



# 2020 EASTERN MUNICIPAL WATER DISTRICT URBAN WATER MANAGEMENT PLAN





EASTERN MUNICIPAL WATER DISTRICT

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# Urban Water Management Plan

JULY 1, 2021

Prepared by Water Systems Consulting, Inc.







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# ACRONYMS & ABBREVIATIONS

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°C	Degrees Celsius
°F	Degrees Fahrenheit
AB	Assembly Bill
AF	Acre Foot
AFY	Acre Feet per Year
AHHG	Area of Historic High Groundwater
AMR	Automatic Meter Reader
APA	Administrative Procedures Act
AWWA	American Water Works Association
BMP	Best Management Practice
CALWARN	California Water/Wastewater Agency Response Network
CAT	Climate Action Team
CCF	Hundred Cubic Feet
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFS	Cubic Feet per Second
CII	Commercial, Industrial, and Institutional
CIMIS	California Irrigation Management Irrigation System
CUWCC	California Urban Water Conservation Council
DCR	DWR SWP Delivery Capacity Report
DDW	SWRCB Division of Drinking Water
DFW	California Department of Fish and Wildlife
DIP	Ductile Iron Pipe
DMM	Demand Management Measure
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EMWD	Eastern Municipal Water District
EPA	United States Environmental Protection Agency
ERNIE	Emergency Response Network of the Inland Empire
ESA	Endangered Species Act
ET	Evapotranspiration

ET <sub>o</sub>	Reference Evapotranspiration
GAC	Granulated Activated Carbon
GIS	Geographic Information System
GPCD	Gallons per Capita per Day
GPM	Gallons per Minute
HECW	High Efficiency Clothes Washer
HET	High Efficiency Toilet
IX	Ion Exchange
KAF	Thousand Acre Feet
KAFY	Thousand Acre Feet per Year
LAFCO	Local Agency Formation Commission
MAF	Million Acre-Feet
MCL	Maximum Contaminant Level
Metropolitan	Metropolitan Water District of Southern California
MF	Multi-family
MG	Million Gallons
MGD	Million Gallons per Day
MOU	Memorandum of Understanding
MSL	Mean Sea Level
MTBE	Methyl Tertiary Butyl Ether
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
PCE	Perchloroethylene
PPCP	Pharmaceuticals and Personal Care Products
PVC	Polyvinyl Chloride
QWEZ	Qualified Water Efficient Landscaper
RIX	Rapid Infiltration and Extraction
RPA	Reasonable and Prudent Alternative
RUWMP	Regional Urban Water Management Plan
RWQCB	Regional Water Quality Control Board
SBX7-7	Senate Bill 7 of Special Extended Session 7
SF	Single Family
SOC	Synthetic Organic Chemicals
SOI	Sphere of Influence
SWRCB	State Water Resources Control Board

TDS	Total Dissolved Solids
TCE	Trichloroethylene
ULFT	Ultra-Low Flush Toilet
UV	Ultraviolet
UWMP	Urban Water Management Plan
UWMP Act	Urban Water Management Planning Act
VOC	Volatile Organic Compound
WBIC	Weather Based Irrigation Controller
WSCP	Water Shortage Contingency Plan
WFF	Water Filtration Facility
WSS	Water Sense Specification
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant







**This Urban Water Management Plan (UWMP) presents a discussion of how Eastern Municipal Water District (EMWD) manages its water supplies to meet customer demands.**

EMWD is required to prepare an UWMP and submit it to the California Department of Water Resources (DWR) every five years. DWR prepares guidance materials for water suppliers to help them prepare UWMPs that meet requirements of the California Water Code (CWC). EMWD has used these guidance materials to prepare its 2020 UWMP.

#### IN THIS SECTION

- Summary of fundamental determinations of the UWMP

## Water Supplies

EMWD provides potable water, recycled water, and wastewater services to an area of approximately 555 square miles in western Riverside County. The service area includes seven incorporated cities in addition to unincorporated areas of Riverside County. EMWD has a diverse portfolio of local and imported supplies. Local supplies include recycled water, potable groundwater, and desalinated groundwater. EMWD is a leader in recycled water and generally uses 100 percent of its recycled water to irrigate landscape and agricultural fields and provide water for industrial customers. EMWD has groundwater wells in two groundwater management areas and works with other stakeholders to protect the quality and integrity of the groundwater basins. EMWD receives imported water from the Metropolitan Water District of Southern California (Metropolitan). About half of the water used in EMWD's service area is imported by Metropolitan. Through the implementation of local supply projects and increased water use efficiency, EMWD has been able to maintain a balance of local and imported water even as new connections have been added.

## Water Demands

EMWD is both a retail supplier, selling to residential and commercial customers, and a wholesale supplier, selling to other water agencies. EMWD has a comprehensive conservation program to encourage customers to use water wisely and efficiently. Through the successful implementation of these programs, EMWD's average water use per person has dropped significantly since 2010. Looking forward, EMWD expects demands to increase as new residential and commercial development continues in the service area.

## Drought Risk

EMWD's supply portfolio has a high degree of reliability. The local groundwater basins are managed to protect them from overdraft, and EMWD participates in programs to bank water in the groundwater basins in wet years so that it can be used in dry years. EMWD's imported water is provided by Metropolitan, which has made extensive investments in programs to increase the reliability of its supply. In its 2020 UWMP, Metropolitan has shown the ability to continue to meet demands through 2045, even during an extended drought. EMWD would benefit from Metropolitan's storage and supply programs and also expects that it can meet demands through 2045 during normal and dry conditions.

## Contingency Planning

Even with highly reliable supplies, events such as statewide water use restrictions or a catastrophic natural disaster (such as an earthquake) that disrupts imported water supplies may require EMWD to temporarily reduce water demands. EMWD's Water Shortage Contingency Plan (WSCP) defines the actions that EMWD could take to conserve water during a shortage. The WSCP describes how EMWD would communicate these requirements to customers, and it describes how the restrictions on use (for example, limiting watering to certain days of the week) would be enforced.

## Preparation and Outreach

EMWD coordinated with Metropolitan and EMWD's wholesale customers on the preparation of the 2020 UWMPs to present a clear and consistent picture of water supply management in the region. EMWD held a public hearing to receive feedback on the UWMP and the WSCP and used that feedback to help develop the plans. If a shortage occurs, EMWD will continue to monitor how the WSCP works and considering making changes where needed.



**The Urban Water Management Planning Act (Act), adopted in 1983, requires water suppliers in California to conduct long-term water resources planning. Prior to adoption of the Act, water agencies were more vulnerable to supply disruptions during periods of drought or supply shortages.**

The Act sought to reduce susceptibility to supply shortages by requiring a minimum level of long-term resource assessment and planning by water suppliers. The planning requirements established by the Act and subsequent legislation encourage regional coordination and focus on water use efficiency as described in the sections below.

This 2020 Urban Water Management Plan (UWMP) addresses the water supply sources, projected demands, and supply reliability for Eastern Municipal Water District (EMWD).

#### IN THIS SECTION

- California Water Code
- UWMP Organization
- Related Efforts

## 1.1 The California Water Code

California Water Code (CWC) Section 10620 (a) of the Urban Water Management Act, states, “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)”. These plans are to be updated every five years and submitted to the California Department of Water Resources (DWR). Requirements for the UWMP include:

- Assessment of current and projected water supplies
- Evaluation of demand and customer types
- Evaluation of the reliability of water supplies
- Description of conservation measures implemented by the urban water supplier
- Response plan, in the event of a water shortage
- Comparison of demand and supply projections

In November of 2009, the California Legislature passed Senate Bill (SB) 7 as part of the Seventh Extraordinary Session, referred to as SBX7-7 or the Water Conservation Act of 2009. SBX7-7 set the goal of achieving a 20 percent reduction in urban per capita water use statewide by 2020. Retail water agencies were required to set targets and track progress toward decreasing daily per capita urban water use in their service areas, in order to assist the State in meeting its 20 percent reduction goal by 2020. This law required that every UWMP include:

- Baseline per capita water use
- Urban water use target for 2020
- Compliance daily per capita water use

This 2020 UWMP has been prepared to comply with the Urban Water Management Planning Act and SBX7-7. In addition to meeting the requirements of the Act, this report will be used to support water supply assessments and written verifications of water supply required by SB 610 and SB 221 of 2001. These bills require that water supply information be provided to counties and cities for projects of a certain size, prior to discretionary project approval. Both bills allow a UWMP to be used as a source document to fulfill these legislative requirements.

Since EMWD’s 2015 UWMP was completed and submitted to DWR, the Legislature has passed additional requirements that need to be incorporated in 2020 UWMPs. Major new requirements include:

- Water Reliability Assessment for five consecutive dry years, more than the three consecutive dry years previously required.
- Drought Risk Assessment to assess water supply reliability over a five-year period from 2021 to 2025 under a reasonable prediction for five consecutive dry years.
- Seismic risk assessment and mitigation plan for a supplier’s infrastructure.
- Water Shortage Contingency Plan with prescribed elements.
- Coordination on groundwater supply planning with plans being completed to address the Sustainable Groundwater Management Act (SGMA).
- Lay Description to describe the fundamental determinations of the UWMP in lay-person’s language.

This 2020 UWMP was developed to incorporate these new requirements, under the guidance of DWR's 2020 UWMPs Guidebook for Urban Water Suppliers. A checklist to document compliance of this UWMP with the Act and the CWC is provided in **Appendix A**.

This UWMP includes the required DWR standardized tables within relevant chapters, and they are compiled in **Appendix B**. Within the UWMP chapters, tables are numbered sequentially, and the standard DWR table number is also provided where applicable.

This UWMP also includes all required SB X7-7 tables in **Appendix C** to verify compliance with the SB X7-7 targets.

## 1.2 UWMP Organization

This report is structured with the layout recommended by the DWR Guidebook. The chapters include:

### Chapter 1 – Introduction and Lay Description

- General legal requirements for UWMPs
- Lay description of fundamental determinations

### Chapter 2 – Plan Preparation

- Plan preparation and agency identification
- Agency coordination and outreach

### Chapter 3 – System Description

- General description of EMWD’s retail and wholesale service areas
- Climate characteristics of EMWD’s service area
- Current and projected population and demographic factors

### Chapter 4 – Customer Water Use

- Overview of past, current, and projected water use
- System water losses
- Climate change impacts on water use

### Chapter 5 – Baselines and Targets

- Information on the Water Conservation Act of 2009
- Water use targets for 2020 and confirmation of compliance

### Chapter 6 – System Supplies

- Information about current and projected supplies
- Background on imported water supply, including the Metropolitan Water District of Southern California (Metropolitan)
- Description of groundwater basin management and supplies
- Description of EMWD’s recycled water system and the beneficial uses of recycled water
- Description of planned water projects
- Climate change impacts to supplies

### Chapter 7 – Water Supply Reliability Assessment

- Overview of the reliability of each of EMWD’s supplies
- Water quality of supplies
- Projections for water supply and water demands under normal, single dry, and multiple dry year hydrologic conditions
- Regional supply reliability

Five-Year Drought Risk Assessment (DRA)

### Chapter 8 – Water Shortage Contingency Planning

- EMWD’s annual procedure for performing an assessment of supplies and demands to determine the potential need for implementing the WSCP in the coming year.
- Overview of EMWD’s water shortage stages and associated response actions for each stage
- Potential fiscal impacts of implementing demand reduction actions
- The contents of this chapter were placed into a stand-alone Water Shortage Contingency Plan (WSCP) that can be adopted and amended separately from the UWMP.

### Chapter 9 – Demand Management Measures

- Summary of EMWD’s retail and wholesale demand management measures

### Chapter 10 – Plan Adoption, Submittal, and Implementation

- Overview of the UWMP adoption process
- Implementation of the Plan



### 1.3 UWMPs in Relation to Other Efforts

UWMPs allow for integration of information from other planning documents, as well as regional planning efforts. EMWD has recently completed a number of planning documents that were used to inform estimates of water supplies and water use projections for the 2020 UWMP update. Additionally, regional planning efforts conducted by Metropolitan were used to assess the EMWD imported water supply reliability. A summary of related planning efforts is presented in **Table 1-1**.

**Table 1-1. Related Planning Efforts**

DOCUMENT	DESCRIPTION
Water Master Plan, EMWD 2016	This document analyzes EMWD's facilities needs to meet current and future customer demands.
Recycled Water Strategic and Master Plan, EMWD 2016	The document analyzes EMWD's recycled water opportunities and contains recycled water projections through the year 2045, including descriptions of planned recycled water projects and facilities.
Wastewater Collection Master Plan, EMWD 2016	This document analyzes EMWD's facilities needs to collect existing and future wastewater.
Regional Water Reclamation Facilities Master Plan	This document analyzes EMWD's reclamation facility needs for treating existing and future wastewater.
Metropolitan Water District Integrated Resources Plan	The document analyzes multiple supply and demand scenarios and describes Metropolitan's plan for providing adequate and reliable supplies to member agencies under the different scenarios. The detailed analyses of further local and imported water supplies; economic growth, demographics, and water demands; and changing hydrology are incorporated into Metropolitan's UWMP.
Metropolitan Water District Urban Water Management Plan	The document describes Metropolitan's demand and supply reliability and is used as the basis of EMWD's imported water supply reliability.

## 1.4 UWMPs and Grant or Loan Eligibility

Water suppliers are required to have a current UWMP on file with DWR in order to be eligible for any water grant or loan administered by DWR. DWR must also determine that the supplier's UWMP has addressed the requirements of the Water Code.

EMWD's 2015 UWMP was determined by DWR to address the requirements of the Water Code. This 2020 UWMP will be submitted to DWR for review and a similar determination.

## 1.5 Demonstration of Consistency with the Delta Plan for Participants in Covered Actions

EMWD receives imported water supplies from the State Water Project (SWP) through Metropolitan. Agencies that receive water from the SWP are required to demonstrate consistency with the Delta Plan's policy to reduce reliance on the Sacramento-San Joaquin Delta (Delta).

EMWD has worked with Metropolitan to demonstrate this consistency. The documentation is included in **Appendix L**.



**The Urban Water Management Planning Act (UWMP Act) requires every urban water supplier that provides water for municipal purposes to more than 3,000 connections or supplies more than 3,000 acre-feet of water annually to adopt and submit an Urban Water Management Plan (UWMP) to the California Department of Water Resources (DWR) every five years.**

The main purposes of developing and updating a UWMP are to forecast water demands and supplies under normal, single-dry, and multiple-dry year conditions; assess supply reliability; and describe methods of reducing demands under potential water shortages.

#### IN THIS SECTION

- Coordination and Outreach
- Cities and Counties Served by EMWD
- Basis for Plan

## 2.1 Plan Preparation

This UWMP satisfies the requirements of the UWMP Act and its amendments and provides an overview of Eastern Municipal Water District's (EMWD)'s long-term supplies and demands. The 2020 UWMP also demonstrates EMWD's compliance with the water use efficiency targets set by the Water Conservation Act of 2009 (SB X7-7).

EMWD operates a Public Water System that qualifies as an "Urban Water Supplier" under the CWC Section 10617, serving more than 3,000 customers and more than 3,000 acre-feet per year (AFY). The qualifying information about EMWD is shown in **Table 2-1**. The number of connections and volume of water supplied in **Table 2-1** reflect EMWD's potable water system only and do not include recycled water users or water supplied on a wholesale basis.

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

PUBLIC WATER SYSTEM NUMBER	PUBLIC WATER SYSTEM NAME	NUMBER OF MUNICIPAL CONNECTIONS 2020	VOLUME OF WATER SUPPLIED 2020
CA3310009	Eastern Municipal Water District	155,561	84,673

## 2.2 Basis for Preparing a Plan

This plan is an individual plan to meet EMWD's reporting requirements as a wholesale supplier and a retail supplier. Although EMWD has coordinated with appropriate retail agencies and constituents, EMWD is not participating in a Regional UWMP or a Regional Alliance. The plan identification details are provided in **Table 2-2**.

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

TYPE OF PLAN	MEMBER OF RUWMP	MEMBER OF REGIONAL ALLIANCE
Individual UWMP	No	No

EMWD is both a retail and wholesale Urban Water Supplier and has selected to report UWMP data in calendar years and in units of acre-feet (AF). The agency identification details are provided in **Table 2-3**.

**Table 2-3. DWR 2-3 Agency Identification**

TYPE OF SUPPLIER	YEAR TYPE	UNIT TYPE
Wholesale and Retail	Calendar Years	Acre Feet (AF)

## 2.3 Coordination and Outreach

EMWD has coordinated with other agencies to prepare consistent evaluations of projected water demands and supplies. These coordination efforts are described in the following sections.

### 2.3.1 Wholesale and Retail Coordination

EMWD is both a retail and wholesale agency. As a retail agency, EMWD is required to provide its wholesaler, Metropolitan, with projected water demand in five-year increments for 20 years. As a wholesale agency, EMWD is required to provide information to its customer urban water suppliers identifying and quantifying water supplies available to those agencies in five-year increments.

The agencies affected are shown in **Table 2-4** and **Table 2-5**.

**Table 2-4. DWR 2-4 Water Supplier Information Exchange**

WHOLESALE WATER SUPPLIER NAME
Metropolitan Water District of Southern California

**Table 2-5. DWR 2-4W Water Supplier Information Exchange**

WHOLESALE WATER SUPPLIER NAME
City of Hemet
City of Perris
City of San Jacinto
Lake Hemet Municipal Water District
Nuevo Water Company
Rancho California Water District
Western Municipal Water District

### 2.3.2 Coordination with Other Agencies and the Community

Article 3, Section 10642 of the UWMP Act requires each urban water supplier to encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area. EMWD has encouraged the participation of sub agencies, cities, the County of Riverside, and other public groups. Public participation and coordination efforts included outreach to the entities shown in **Table 2-6**.

**Table 2-6. Outreach to Other Agencies and Entities**

ENTITY	ROLE
Metropolitan Water District of Southern California	Wholesaler supplier to EMWD
City of Beaumont	EMWD's retail service area overlaps portion of City
City of Canyon Lake	EMWD's retail service area overlaps portion of City
City of Hemet	EMWD is wholesale supplier to agency
City of Meniffee	EMWD's retail service area overlaps portion of City
City of Moreno Valley	EMWD's retail service area overlaps portion of City
City of Murrieta	EMWD's retail service area overlaps portion of City
City of Perris	EMWD is wholesale supplier to agency
City of Riverside	EMWD's retail service area overlaps portion of City
City of San Jacinto	EMWD is wholesale supplier to agency
City of Temecula	EMWD's retail service area overlaps portion of City
Elsinore Valley Municipal Water District	EMWD sells recycled water to agency
Lake Hemet Municipal Water District	EMWD is wholesale supplier to agency
Nuevo Water Company	EMWD is wholesale supplier to agency
Rancho California Water District	EMWD is wholesale supplier to agency
Western Municipal Water District	EMWD is wholesale supplier to agency
Fallbrook Public Utility District	Agency is a potential future wholesale customer of EMWD (pending the outcome of the reorganization proposal filed by Fallbrook PUD which is being processed by San Diego County Local Agency Formation Commission)
Rainbow Municipal Water District	Agency is a potential future wholesale customer of EMWD (pending the outcome of the reorganization proposal filed by Rainbow MWD which is being processed by San Diego County Local Agency Formation Commission)
County of Riverside	
Hemet – San Jacinto Watermaster	Oversee administration of Stipulated Judgement in the Management Area (Canyon Subbasin, the San Jacinto Upper Pressure Subbasin downstream to Bridge Street and the Hemet Subbasin)
Santa Ana Watershed Protection Authority	Integrated Regional Water Management Plan
Pechanga Band of Luiseño Indians	EMWD sells recycled water to Tribal Government
Soboba Band of Luiseño Indians	Party to Soboba Settlement Agreement
California Department of Water Resources	Administers Urban Water Management Planning Act
General Public	

### 2.3.3 Notice to Cities and Counties

EMWD provided notice to the cities and counties within its service area that the UWMP was being updated. These notices are included in Appendix J and were provided more than 60 days prior to the public hearing held to consider the draft plan.



## 3 System Description

EMWD is a public water agency formed in 1950 by popular vote. In 1951, it was annexed into Metropolitan and gained access to a supply of imported water from the Colorado River Aqueduct (CRA). Today, EMWD remains one of Metropolitan's 26 member agencies and receives water from Northern California through the State Water Project (SWP) in addition to deliveries through the CRA.

EMWD's initial mission was to deliver imported water to supplement local groundwater for a small, mostly agricultural, community. Over time, EMWD's list of services has evolved to include groundwater production, desalination, water filtration, wastewater collection and treatment, and regional water recycling.

### IN THIS SECTION

- Service Area
- Land Uses



### 3.1 General Description

EMWD provides both retail and wholesale water service covering a total population of over 800,000. EMWD's mission is, "To deliver value to our diverse customers and the communities we serve by providing safe, reliable, economical and environmentally sustainable water, wastewater and recycled water services." A five-member Board of Directors governs EMWD. Each Director serves an area of equivalent population size within EMWD's boundaries and is elected to office every four years. As a member agency of Metropolitan, EMWD also has a member appointed to the Metropolitan Board.

EMWD provides potable water, recycled water, and wastewater services to an area of approximately 555 square miles in western Riverside County. EMWD is both a retail and wholesale agency. Approximately half of EMWD's retail demands are supplied using local sources, while the balance is served by imported water purchased from Metropolitan. EMWD also purchases imported water from Metropolitan to supplement the local supplies of its wholesale customers. Imported water is delivered to EMWD either as potable water treated by Metropolitan, or as raw water that EMWD can either treat at one of its two local filtration plants or deliver as raw water for non-potable uses.

EMWD's local supplies include groundwater, desalinated groundwater, and recycled water. Groundwater is pumped from the Hemet/San Jacinto and West San Jacinto areas of the San Jacinto Groundwater Basin. Groundwater in portions of the West San Jacinto Basin is high in salinity and requires desalination for potable use. EMWD owns and operates two desalination plants that convert brackish groundwater from the West San Jacinto Basin into potable water. EMWD also owns, operates, and maintains its own recycled water system that consists of four Regional Water Reclamation Facilities and several storage ponds spread throughout EMWD's service area that are all connected through the recycled water system. EMWD's goal is to beneficially use 100 percent of the recycled water it produces.

EMWD is located in western Riverside County, approximately 75 miles east of Los Angeles. The 555-square mile service area includes seven incorporated cities in addition to unincorporated areas in the County of Riverside. The cities and unincorporated areas within EMWD's boundary include:

- City of Beaumont
- City of Canyon Lake
- City of Hemet
- City of Menifee
- City of Moreno Valley
- City of Murrieta
- City of Perris
- City of Riverside
- City of San Jacinto
- City of Temecula
- Homeland
- Lakeview
- Nuevo
- Quail Valley
- Romoland
- Valle Vista
- Winchester

In most of the listed areas, EMWD provides both water and wastewater service. However, in some places EMWD provides only water or wastewater service or provides wholesale water to a purveyor agency. EMWD is a wholesale potable provider to the following agencies:

- City of Hemet Water Department
- City of Perris Water System
- City of San Jacinto Water Department
- Lake Hemet Municipal Water District (LHMWD)
- Murrieta Division of WMWD
- Nuevo Water Company
- Rancho California Water District (RCWD)



Additionally, EMWD sells recycled water to RCWD and Elsinore Valley Municipal Water District (EVMWD) and has an emergency connection with the City of Perris' North Perris Water System.

Several of these agencies are preparing their own UWMP. EMWD has discussed and reviewed the supplemental water demands required by each agency with representatives of those agencies. The demand and water supply requirements are incorporated in this UWMP.

EMWD has four sources of water supply: imported water from Metropolitan, local groundwater, desalinated groundwater, and recycled water. Delivery points for each source of water are located throughout the EMWD service area.

Potable imported water is treated and delivered to EMWD directly from Metropolitan's two large filtration plants. The Henry J. Mills (Mills) Water Treatment Plant treats water from Northern California and provides it to EMWD through two connection points located in the northeast portion of EMWD's service area. The Robert F. Skinner (Skinner) Water Treatment Plant treats a blend of Colorado River water and water from Northern California and provides it to EMWD through a connection point in the southwest portion of EMWD's service area.

EMWD owns and operates two microfiltration plants that filter raw imported water delivered through Metropolitan, removing particulate contaminants to achieve potable water standards. The two treatment plants, the Perris Water Filtration Plant and the Hemet Water Filtration Plant, are located in Perris and Hemet, respectively. Raw water from Metropolitan is also used for groundwater replenishment in the eastern part of EMWD. EMWD and others can extract this water at a later date for beneficial uses. Untreated water from Metropolitan used for agricultural purposes is delivered in the northeast for use by EMWD retail and wholesale accounts and in the south for RCWD agricultural accounts.

EMWD produces potable and brackish groundwater from the San Jacinto Groundwater Basin that underlies the EMWD service area. EMWD's groundwater wells pump primarily from the eastern portion of EMWD, with the largest amount of production taking place around the cities of Hemet and San Jacinto. EMWD owns and operates two desalination plants in Sun City, the Menifee Desalter and the Perris I Desalter, which treat brackish groundwater through reverse osmosis to achieve potable water standards.

In addition to the potable water system, EMWD maintains a regional recycled water system that provides tertiary-treated recycled water to customers for agricultural, landscape irrigation, environmental, and industrial use. EMWD's recycled water system consists of four regional water reclamation facilities (RWRFs) that treat municipal sewage and produce water for recycling. The four RWRFs, the San Jacinto Valley RWRF, the Moreno Valley RWRF, the Temecula Valley RWRF, and the Perris Valley RWRF, are spread throughout EMWD's service area. A network of pipelines connects the four RWRFs, as well as several distribution storage ponds, to manage the delivery of recycled water.

EMWD's water supplies and facilities are described in more detail in **Chapter 6**.

## 3.2 Service Area Boundary Maps

EMWD's service area boundary and the intersecting and adjacent water agencies within that boundary are shown in **Figure 3-1**. The cities in EMWD's service area are shown in **Figure 3-2**.

Figure 3-1. Water Agencies in and around EMWD Boundary

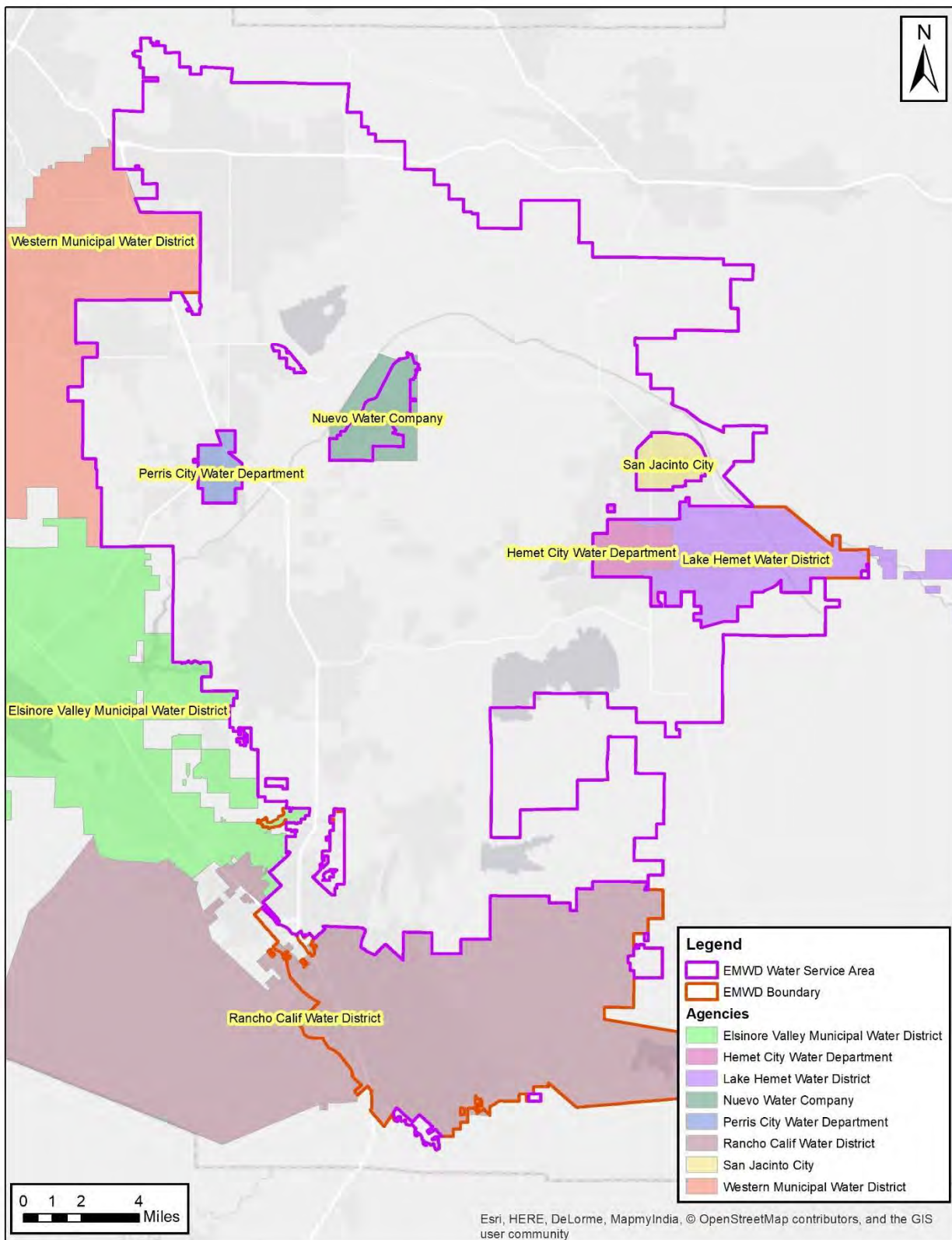
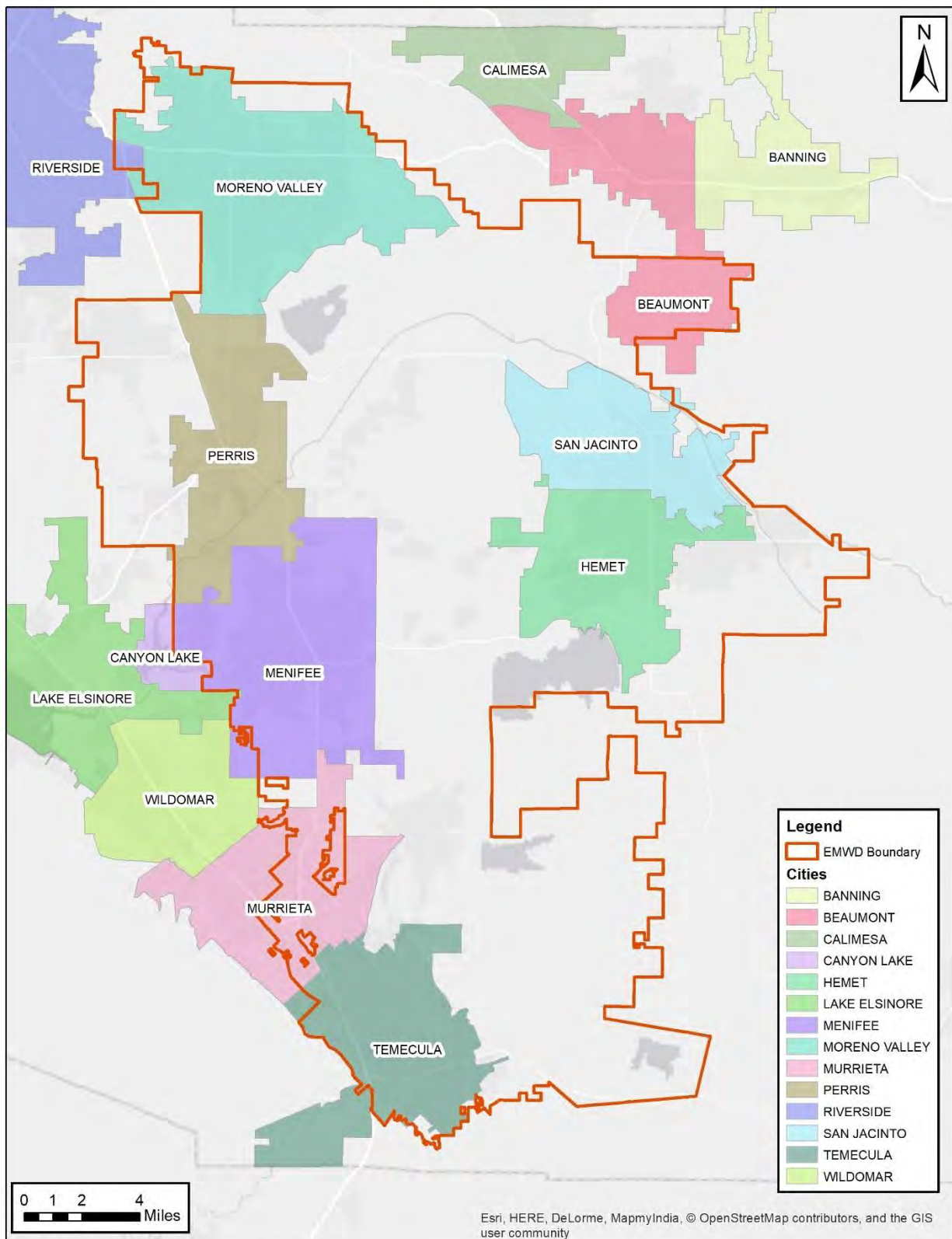


Figure 3-2. Cities in EMWD Boundary



### 3.3 Service Area Climate

EMWD has a semi-arid climate characterized by hot, dry summers and cooler winters. The region experiences a wide variation in rainfall and periodic drought. The average total rainfall in the service area is approximately 7.6 inches, occurring mostly December through March. A summary of historical average climatological data is presented in **Table 3-5**, and the values are plotted in **Figure 3-3**.

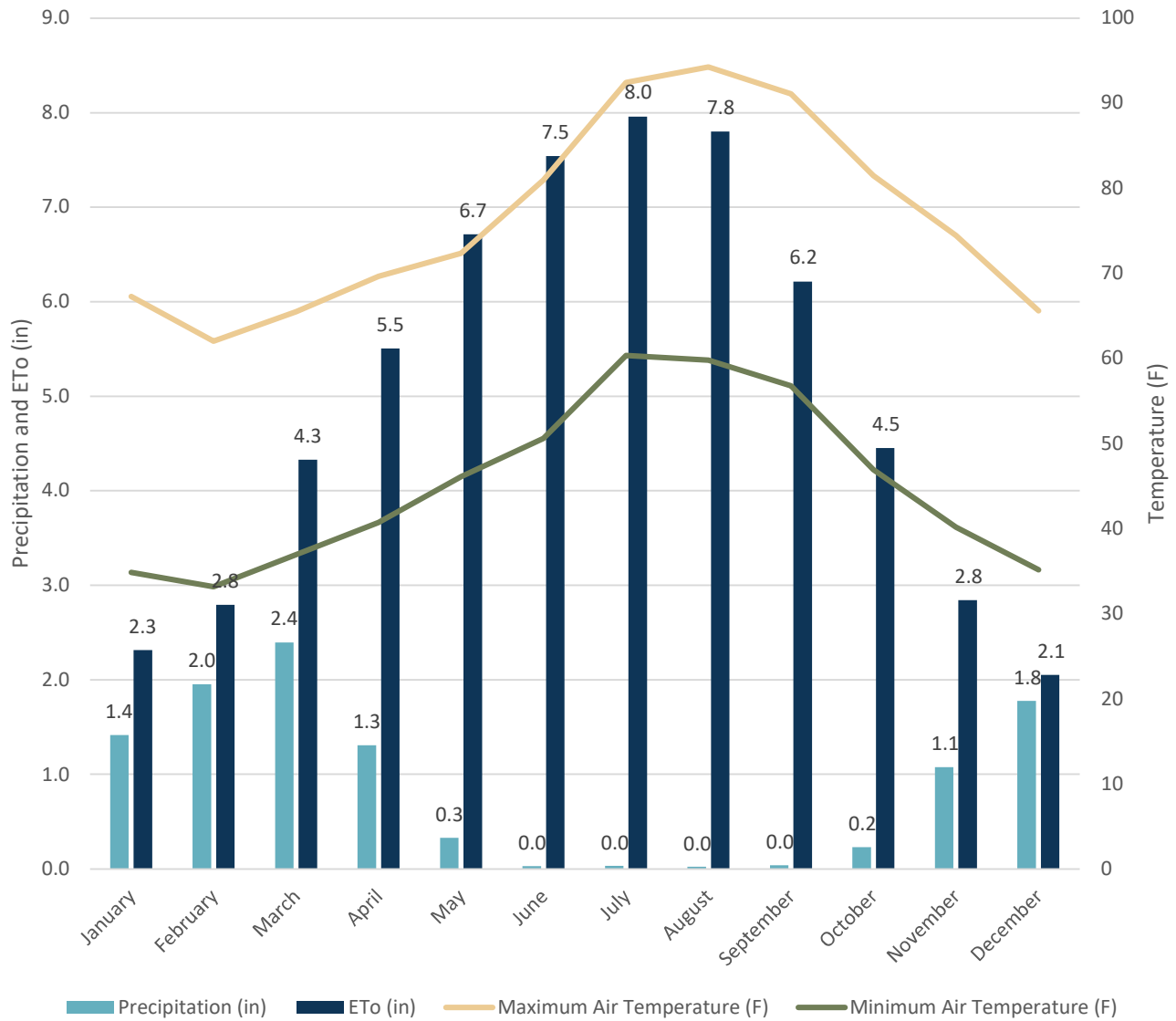
**Table 3-1. EMWD Climate**

	STANDARD MONTHLY AVERAGE ETO (INCHES)	AVERAGE RAINFALL (INCHES)	AVERAGE MAXIMUM TEMPERATURE (FAHRENHEIT)	AVERAGE MINIMUM TEMPERATURE (FAHRENHEIT)
<b>JANUARY</b>	2.3	1.4	67	35
<b>FEBRUARY</b>	2.8	2.0	62	33
<b>MARCH</b>	4.3	2.4	65	37
<b>APRIL</b>	5.5	1.3	70	41
<b>MAY</b>	6.7	0.3	72	46
<b>JUNE</b>	7.5	0.0	81	51
<b>JULY</b>	8.0	0.0	92	60
<b>AUGUST</b>	7.8	0.0	94	60
<b>SEPTEMBER</b>	6.2	0.0	91	57
<b>OCTOBER</b>	4.5	0.2	82	47
<b>NOVEMBER</b>	2.8	1.1	74	40
<b>DECEMBER</b>	2.1	1.8	66	35
<b>TOTAL / AVERAGE</b>	<b>60.5</b>	<b>10.6</b>	<b>76</b>	<b>45</b>

Data from California Irrigation Management Information System (CIMIS) Station Winchester 179

Data from 2002 through 2020

Figure 3-3. Historical Climate Data at CIMIS Station 179



### 3.3.1 Climate Change

EMWD has considered the potential impacts of climate change on its demands (described in **Chapter 4**) and its supplies (described in **Chapter 6**).



### 3.4 Service Area Population and Demographics

EMWD's service area has experienced population growth driven by cycles of economic expansion and conversion of agricultural land to urban development.

#### 3.4.1 Service Area Population

EMWD used the DWR Population Tool to estimate the population in its service area for the census years of 1990, 2000, and 2010. The historic growth in population is shown in **Table 3-2**.

**Table 3-2. Historical Population within EMWD's Boundary - 1990 to 2010**

WATER SERVICE AREA	1990	2000	2010	2015
EMWD Retail Service Area	240,293	297,111	519,880	546,146
EMWD Wholesale Service Area	102,362	167,104	200,789	215,075
<b>TOTAL</b>	<b>342,655</b>	<b>464,215</b>	<b>720,669</b>	<b>761,221</b>

Service area population was estimated using Census data and DWR's Population Tool.

The DWR Population Tool was used to estimate the 2020 population based on the census data for 2010 and the change in the number of connections from 2010 to 2020.

For future population projections, EMWD evaluated projections prepared by the Southern California Association of Governments (SCAG). SCAG recently completed an updated regional growth forecast known as 2020 Connect SoCal. SCAG generated estimates of population, households, and employment in each Traffic Analysis Zone (TAZ). The results are summarized in **Table 3-3**.

**Table 3-3. Projections of Population, Households, and Employment**

		2025	2030	2035	2040	2045
<b>POPULATION</b>	EMWD Boundary	921,200	983,300	1,045,300	1,088,300	1,131,300
	EMWD Water Service Area	649,700	695,500	741,300	774,300	807,200
	EMWD Wholesale Service Area	271,500	287,800	304,000	314,000	324,100
<b>HOUSEHOLDS</b>	EMWD Boundary	290,800	317,000	343,200	360,800	378,400
	EMWD Water Service Area	199,600	218,700	237,700	251,000	264,200
	EMWD Wholesale Service Area	91,200	98,300	105,500	109,800	114,200
<b>EMPLOYMENT</b>	EMWD Boundary	231,400	250,100	268,800	282,500	296,300
	EMWD Water Service Area	123,600	132,300	141,000	149,000	157,000
	EMWD Wholesale Service Area	107,800	117,800	127,800	133,500	139,300

Estimates from SCAG forecast in 2020 Connect SoCal

The current and projected future population in the retail service area is shown in **Table 3-4**, and the estimates for the wholesale service area are shown in **Table 3-5**.

**Table 3-4. DWR 3-1R Current and Projected Population**

POPULATION SERVED	2020	2025	2030	2035	2040	2045
Retail	603,950	649,700	695,500	741,300	774,300	807,200

1) Retail population for 2020 was estimated using the DWR Population Tool and persons per connection.

2) Retail population projections for 2025-2045 were estimated using population projections prepared by the Southern California Association of Governments for 2020 Connect SoCal.

**Table 3-5. DWR 3-1W Current and Projected Population**

POPULATION SERVED	2020	2025	2030	2035	2040	2045
Wholesale	255,210	271,500	287,800	304,000	314,000	324,100

1) Wholesale population for 2020 was estimated using the data from the Southern California Association of Governments.

2) Wholesale population projections for 2025-2045 were estimated using population projections prepared by the Southern California Association of Governments for 2020 Connect SoCal.

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

As the population within EMWD’s service area continues to grow, the characteristics of the service area are continually changing. Tract homes, commercial centers and new industrial warehouses are replacing areas of agriculture and vacant land.

EMWD has a history of development cycles with wide variations in the rate of growth. From the mid-1980’s to 1990’s, population growth in EMWD routinely exceeded 10 percent per year. In the early 1990’s, growth slowed during an economic recession. During the late 1990’s, growth began to steadily increase, and the first five years of the 2000’s again brought accelerated population growth to the area. Growth within EMWD’s service area reached its peak rate in 2005, but then there was a major decline in housing development and growth slowed again. Starting in 2006 EMWD saw a sharp decline in the number of new connections added, reaching a low point in 2010. Since 2010, new connections have slowly been increasing; but they remain well below the peak levels of new development seen in the early 2000’s.

The cycle of booming growth followed by slower growth makes new development in EMWD’s service area difficult to predict. On average, 6,700 new equivalent dwelling units (EDUs) per year were added to EMWD’s service area from 2000 through 2015; but over that 15-year time period there were two years with more than 15,000 EDUs added and three years with less than 2,000 EDUs added. Because of the variability in demand cycles, EMWD has developed a comprehensive database of planned projects that tracks proposed new development and land use changes. This database is used in facility and supply planning to project future demands.

Ultimate demand estimates indicate that before EMWD reaches build out, the population will more than double compared to the current size. Land will continue to be developed in western Riverside County as more and more people move into the area. Just as it has in the past, EMWD will continue to meet the challenges of new development with innovation, efficiency, and responsibility.

### 3.5 Land Uses within Service Area

EMWD's service area includes a number of cities and unincorporated communities within Riverside County. The regional growth projections prepared by SCAG included consultation with these agencies to reflect the current and planned land uses within their jurisdictions. As part of its planning process, EMWD has also reviewed general and specific plans available from Riverside County and the cities within the service area.

### 3.6 Proposed Reorganization of Fallbrook Public Utility District and Rainbow Municipal Water District

The San Diego Local Agency Formation Commission (LAFCO) is currently processing two related proposals separately filed by the Rainbow Municipal Water District (MWD) and Fallbrook Public Utility District (PUD). These proposals request LAFCO approval for each agency to separately and concurrently detach from the San Diego County Water Authority (SDCWA) and annex to EMWD for purposes of changing wholesale water suppliers. Fallbrook PUD and Rainbow MWD are currently being supplied with imported water from Metropolitan's Robert A. Skinner (Skinner) Water Treatment Plant via the Metropolitan/San Diego Aqueduct, and if the proposal is approved, would continue to be supplied with the same water by EMWD.

As part of the LAFCO process, EMWD evaluated current and projected supplies and demands with and without the annexation of Fallbrook PUD and Rainbow MWD under various hydrologic conditions. Through the analysis, EMWD determined that EMWD's current retail and wholesale customers would continue to recognize the same water supply reliability regardless of whether or not Fallbrook PUD and Rainbow MWD become wholesale customers of EMWD.





**When EMWD was formed in 1950 it was a small agency, primarily serving agricultural customers. Since then, potable water use in EMWD's service area has shifted from primarily agricultural to urban use. The reduction in agricultural demand has two major causes: rural farmland has been transformed to urban housing, and most remaining agricultural demands have been shifted to the recycled water system.**

The development of new homes and the accompanying increase in population has led to the increasing demand for domestic water. EMWD has experienced increases in demand as the region has experienced dry weather patterns and a growing economy. Even with the warmer, drier weather, and improvements in the economy, demand has remained well below the peak seen in 2007. EMWD's proactive conservation program, including an allocation-based tiered rate billing structure, has reduced demand even as the agency has added new dwelling units.

#### IN THIS SECTION

- Water Use by Sector
- Projections of Future Demand

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

In addition to retail potable water demand, EMWD delivers water to seven wholesale customer agencies and meets a significant portion of demand with recycled water. The sections below summarize the past and projected retail and wholesale water use within EMWD’s service area.

EMWD’s primary retail customers can be divided into residential, commercial, industrial, institutional, landscape and agricultural irrigation sectors. Although the residential sector is by far EMWD’s largest customer segment, each market segment plays a role in the growth and development of EMWD’s service area.

EMWD wholesales water to seven different agencies. The demand from each agency differs based on its need each year. These demands can be unstable at times as these agencies use water from EMWD to supplement their system when their local facilities are inadequate or fail. EMWD will also provide backup for the North Perris Water System if an emergency should occur.

Under the Hemet/San Jacinto Groundwater Management Area Water Management Plan (HSJ Management Plan), EMWD is responsible for providing water to recharge the groundwater basin. A portion of the water supplied will be SWP water imported through Metropolitan to meet the requirements of the Soboba Band of Luiseño Indians Water Settlement Agreement and to improve the reliability of groundwater in the area. Individual agencies, including EMWD, will be able to extract their allotted amount of the recharged water from the basin.

A portion of the water EMWD wholesales to Lake Hemet Municipal Water District (LHMWD) is raw water for agricultural uses. This water is needed especially when surface water is not available to LHMWD in dry years.

Water use for 2020 is shown in **Table 4-1** and **Table 4-2**.

**Table 4-1. DWR 4-1R Actual Demands for Potable and Raw Water**

USE TYPE	ADDITIONAL DESCRIPTION	LEVEL OF TREATMENT WHEN DELIVERED	2020 VOLUME
Single Family		Drinking Water	52,162
Multi-Family		Drinking Water	6,535
Commercial		Drinking Water	4,267
Industrial		Drinking Water	571
Institutional/Governmental		Drinking Water	1,629
Landscape		Drinking Water	8,155
Agricultural irrigation		Drinking Water	1,114
Agricultural irrigation		Raw Water	446
Other		Drinking Water	1,287
Non-Revenue	System losses & unbilled, authorized consumption	Drinking Water	8,507
<b>TOTAL:</b>			<b>84,673</b>

1) Passive water savings due to the restrictions outlined in the Administrative Code are included in the demand projections for EMWD’s retail service area.  
 2) Landscape demands remain constant/decrease over time as landscape accounts are offset by conversion to the recycled water system.  
 3) Projections for losses in the table include system losses (real and apparent) and unbilled, authorized consumption. EMWD’s water loss audits are completed on a fiscal year basis (rather than calendar year) and report estimated system losses.

**Table 4-2. DWR 4-1W Actual Demands for Potable and Raw Water**

USE TYPE	ADDITIONAL DESCRIPTION	LEVEL OF TREATMENT WHEN DELIVERED	2020 VOLUME
Groundwater Recharge	Imported water recharge to the Hemet/San Jacinto Basin	Raw Water	6,467
Sales/Transfers/Exchanges to Other Agencies	City of Perris Water System	Drinking Water	1,685
Sales/Transfers/Exchanges to Other Agencies	Western Municipal Water District Murrieta Division	Drinking Water	1,809
Sales/Transfers/Exchanges to Other Agencies	Nuevo Water Company	Drinking Water	409
Sales/Transfers/Exchanges to Other Agencies	Rancho California Water District	Drinking Water	11,105
Sales/Transfers/Exchanges to Other Agencies	Rancho California Water District	Raw Water	13,923
Sales/Transfers/Exchanges to Other Agencies	City of Hemet	Drinking Water	0
Sales/Transfers/Exchanges to Other Agencies	City of San Jacinto	Drinking Water	0
Sales/Transfers/Exchanges to Other Agencies	Lake Hemet Municipal Water District	Raw Water	986
<b>TOTAL:</b>			<b>36,384</b>

Projected demands for EMWD were developed using information about planned development and land use. To track new developments, EMWD updates a Geographic Information System (GIS) database that tracks proposed development quarterly. Currently, EMWD is tracking the status of over 800 proposed projects and over 125,000 equivalent dwelling units. Growth rates were based on a forecast of future population prepared by the Southern California Association of Governments (SCAG). EMWD’s growth forecasts include both the retail and wholesale service areas.

EMWD’s retail demand projections include the water savings needed to meet the Water Conservation Act of 2009, SB X7-7 requirements. Demand forecasts for wholesale customers are developed from growth projections and through collaboration with sub agencies.

Wholesale demand projections are based on communications with sub agencies and respective growth projections for those agencies.

### 4.1.1 Codes and Other Considerations Used in Projections

EMWD demand projections include water savings that result from a progressive conservation rate structure. EMWD uses an allocation-based tiered rate structure to encourage conservation by sending a strong price signal for water use over a budget allocation. Indoor budgets are based on an allocation of 55 gallons per capita per day. Outdoor budgets are based on the irrigated area and a percent of evapotranspiration. The percent of evapotranspiration is tied to the date the home was connected to EMWD’s system. The rate structure is used to enforce codes and standards in place to promote efficiency.

As codes and standards increase efficiency over time, EMWD has the ability to adjust the allocations. The most recent update to EMWD’s allocations occurred in May of 2015, when a fifty percent

evapotranspiration standard was adopted for all new non-functional landscape installed after June 1, 2015. The details on EMWD's rate structure can be found in Section 5, Article 6 of EMWD's Administrative Code.

Senate Bill (SB) 606 and Assembly Bill (AB) 1668 became law in 2018. These laws establish guidelines for efficient water use and a framework for the implementation and oversight of new water use standards. The State will establish water use objectives and long-term standards for efficient water use applying to indoor use, outdoor use, and other use types including losses. Rulemaking is currently underway to implement this legislation and develop the standards for efficient water use. When the final standards are adopted, EMWD will evaluate the need to modify its water use budgets for customers.

Residential consumption is the dominant demand for EMWD, and this will continue in the future according to current general plans for the County of Riverside and local cities. Residential accounts are required to keep their demands below a budgeted allocation or pay a high rate for water use. Accounts dedicated to irrigating landscaped areas have the second highest consumption rate. Just as with residential accounts, landscape accounts are subject to a budgeted allocation or pay a higher rate for over budget use. New development in both of these account classes are provided with lower budget allocations to account for water use efficiency requirements for new development.

Section 5, Article 6 of EMWD's Administrative Code details EMWD's rate structure. Passive water savings due to the provisions outlined in the Administrative Code are included in the demand projections for EMWD's retail service area.

In 2019, EMWD began implementing water budgets and tiered rates for additional commercial, industrial, and institutional (CII) customers. Commercial developments will also continue to increase and will be focused along the major transportation corridors through EMWD's boundary (Interstate Highway 15, Interstate Highway 215, Highway 79, and Highway 74). Land use-based projections indicate that the ratio of commercial demand to retail demand will increase slightly over time.

EMWD has a very small industrial use sector, accounting for less than one percent of retail demand. Industrial developments are proposed around Interstate Highway 215 and other main transportation corridors. Much of the proposed growth consists of large warehouse projects with minimal water demand. As much as feasible, EMWD will meet the needs of high-water demand industrial customers with recycled water.

Currently, the demand from institutional accounts account for about two percent of retail demand for potable water. EMWD works closely with institutional and government accounts to help reduce their demand and promote the efficient use of water. Whenever possible, recycled water is used for landscape irrigation for schools and other government facilities. EMWD has also developed conservation programs designed to assist public sector accounts like schools to reduce demand through the retrofit of inefficient devices. These programs are discussed further in Chapter 9.

EMWD's service area has gone through a major transformation from a farming community to a residential community. Currently, agricultural demand accounts for less than four percent of EMWD's potable and raw water market, with a substantial portion of the agricultural community being served by the recycled water system. Agricultural demand for potable and raw water is expected to remain relatively stable for the next twenty years with some fluctuations from year to year due to changes in weather or crop rotations. It is also possible that a general decline over time may be observed both as a result of continued urbanization and increased recycled water usage.

Project demands for the retail and wholesale customers are shown in **Table 4-3** and **Table 4-4**.

**Table 4-3. DWR 4-2R Projected Demands for Potable and Raw Water**

USE TYPE	ADDITIONAL DESCRIPTION	PROJECTED WATER USE				
		2025	2030	2035	2040	2045
Single Family		66,900	71,700	76,700	80,500	84,000
Multi-Family		8,500	9,100	9,700	10,200	10,600
Commercial		6,100	6,500	7,000	7,300	7,600
Industrial		600	600	700	700	700
Institutional/Governmental		2,700	2,900	3,100	3,200	3,400
Landscape		8,400	7,600	6,800	6,200	5,500
Agricultural irrigation	Potable Water	1,500	1,500	1,500	1,500	1,500
Agricultural irrigation	Raw Water	500	500	500	500	500
Other		0	0	0	0	0
Non-Revenue	System losses & unbilled, authorized consumption	7,400	7,900	8,400	8,800	9,200
<b>TOTAL:</b>		<b>102,600</b>	<b>108,300</b>	<b>114,400</b>	<b>118,900</b>	<b>123,000</b>

- 1) Passive water savings due to the provisions outlined in the Administrative Code are included in the demand projections for EMWD’s retail service area.
- 2) Landscape demands remain constant/decrease over time as landscape accounts are offset by conversion to the recycled water system.
- 3) Projections for losses in the table include system losses (real and apparent) and unbilled, authorized consumption.

**Table 4-4. DWR 4-2W Projected Demands for Potable and Raw Water**

USE TYPE	ADDITIONAL DESCRIPTION	PROJECTED WATER USE				
		2025	2030	2035	2040	2045
Groundwater Recharge	Imported water recharge to the Hemet/San Jacinto Basin	7,500	7,500	7,500	7,500	7,500
Sales/Transfers/Exchanges to Other Agencies	City of Perris Water System	1,800	1,900	2,100	2,200	2,300
Sales/Transfers/Exchanges to Other Agencies	Western Municipal Water District Murrieta Division	1,000	1,300	1,600	2,000	2,300
Sales/Transfers/Exchanges to Other Agencies	Nuevo Water Company	500	1,000	1,100	1,200	1,200
Sales/Transfers/Exchanges to Other Agencies	Rancho California Water District (Potable)	27,100	20,000	21,000	15,200	16,500
Sales/Transfers/Exchanges to Other Agencies	Rancho California Water District (Raw)	15,200	15,200	15,200	22,300	22,300
Sales/Transfers/Exchanges to Other Agencies	City of Hemet	0	0	0	0	0
Sales/Transfers/Exchanges to Other Agencies	City of San Jacinto	0	0	0	0	0
Sales/Transfers/Exchanges to Other Agencies	Lake Hemet Municipal Water District	5,100	5,500	5,900	6,300	6,700
<b>TOTAL:</b>		<b>58,200</b>	<b>52,400</b>	<b>54,400</b>	<b>56,700</b>	<b>58,800</b>

- 1) Lake Hemet Municipal Water District generally receives raw water, but may purchase some potable water in the future based on operational conditions
- 2) Groundwater recharge will occur under the Hemet/San Jacinto Water Management Plan.

In addition to potable and raw water demands, EMWD also uses recycled water for beneficial uses such as municipal, industrial, landscape, agricultural and environmental use. These uses are described in more detail in **Chapter 6**.

The gross water use including recycled water for the retail and wholesale systems is shown in **Table 4-5** and **Table 4-6**.

**Table 4-5. DWR 4-3R Total Gross Water Use**

-	2020	2025	2030	2035	2040	2045
<b>Potable and Raw Water</b> From Table 4-1R and 4-2R	84,673	102,600	108,300	114,400	118,900	123,000
<b>Recycled Water Demand*</b> From Table 6-4R	31,243	43,330	49,020	54,500	59,800	64,100
<b>TOTAL WATER USE:</b>	<b>115,916</b>	<b>145,930</b>	<b>157,320</b>	<b>168,900</b>	<b>178,700</b>	<b>187,100</b>

**Table 4-6. DWR 4-3W Total Gross Water Use**

-	2020	2025	2030	2035	2040	2045
<b>Potable and Raw Water</b> From Table 4-1W and 4-2W	36,384	58,200	52,400	54,400	56,700	58,800
<b>Recycled Water Demand*</b> From Table 6-4W	1,285	4,770	5,180	5,600	5,600	5,600
<b>TOTAL WATER DEMAND:</b>	<b>37,699</b>	<b>62,970</b>	<b>57,580</b>	<b>60,000</b>	<b>62,300</b>	<b>64,400</b>



## 4.2 Distribution System Water Losses

Water loss is a combination of apparent losses and real losses. Apparent losses are attributed to unauthorized consumption, customer metering inaccuracies and systematic data handling errors. Real losses are attributed to such physical water losses as leakage along the pipe system, at the storage tanks, or at the service connections. Real losses in EMWD’s potable system are highest where pipelines are older and smaller in size, especially in the Hemet and San Jacinto areas that were once owned by the Fruitvale Mutual Water Company. EMWD tracks pipe leaks and identifies pipes for replacement as part of its capital improvement program. These efforts are described in more detail in **Chapter 9**.

EMWD used the American Water Works Association (AWWA) water system balance methodology to prepare water audits for the last five fiscal years. While EMWD provides both retail and wholesale service and generally reports these services separately throughout this UWMP, its physical facilities are shared. Therefore, losses cannot be easily attributed to one system or the other. For this reason, all of EMWD’s water losses are reported in a single table.

The results of the water audits are summarized in **Table 4-7**. The completed audits are included in **Appendix D**.

**Table 4-7. DWR 4-4R 12 Month Water Loss Audit Reporting**

REPORT PERIOD START DATE		VOLUME OF WATER LOSS (AF)
MM	YYYY	
7	2015	8,865
7	2016	6,221
7	2017	4,321
7	2018	7,360
7	2019	5,096

1) EMWD’s retail and wholesale physical facilities are shared. Therefore, losses cannot be easily attributed to one system or the other. For this reason, all of EMWD’s water losses are reported in the DWR Table 4-4 for retail.

2) Water Loss includes Real losses and Apparent losses

### 4.3 Water Use for Lower Income Households

Senate Bill 1087 requires that water use projections in an UWMP include the projected water use for single family and multi-family residential housing for lower income households as identified in the housing element of any city and county in the service area of the supplier. EMWD used the percent of low income and very low-income housing identified in the Regional Housing Needs Assessment (RHNA) for 2021 through 2029, approved by the Southern California Association of Governments, to estimate the number of new low-income housing units that may require service within EMWD’s retail service area. The number of projected low-income housing units within each jurisdiction served by EMWD is shown in **Table 4-8**. The demands for these units are included in the total projected residential retail demands.

**Table 4-8. Low Income Housing Unit Projection**

JURISDICTION	PROJECTED HOUSING UNITS			PERCENT VERY LOW INCOME OR LOW INCOME
	TOTAL	VERY LOW INCOME	LOW INCOME	
Hemet	6,466	812	732	24%
Menifee	6,609	1,761	1,051	43%
Moreno Valley	13,627	3,779	2,051	43%
Murrieta	3,043	1,009	583	52%
Perris	7,805	2,030	1,127	40%
San Jacinto	3,392	800	465	37%
Temecula	4,193	1,359	801	52%
<b>TOTAL</b>	<b>45,135</b>	<b>11,550</b>	<b>6,810</b>	<b>41%</b>

The demand projections in this UWMP include future water savings and demand for lower income residential households as summarized in **Table 4-9**.

**Table 4-9. DWR 4-5R Inclusion in Water Use Projections**

ARE FUTURE WATER SAVINGS INCLUDED IN PROJECTIONS? REFER TO APPENDIX K OF UWMP GUIDEBOOK.	Yes
SECTION OR PAGE NUMBER WHERE THE CITATIONS UTILIZED IN THE DEMAND PROJECTS CAN IT BE FOUND:	Section 4.1.1
ARE LOWER INCOME RESIDENTIAL DEMANDS INCLUDED IN PROJECTIONS?	Yes



## 4.4 Climate Change Considerations

EMWD has considered the impacts of climate change on water demands as part of long-term strategic planning. Climate change is expected to cause a rise in temperatures in the region which will increase evapotranspiration and water demand. This is particularly true for EMWD's agricultural sector. Additionally, in urbanized areas with limited vegetation, climate change can exacerbate the heat island effect which may result in increased energy and cooling demands.

EMWD's service area lies within the Santa Ana River and Santa Margarita River Watersheds. The Santa Ana River Watershed is covered under the Santa Ana Watershed Planning Authority's (SAWPA)'s Integrated Regional Water Management (IRWM) Plan for the Santa Ana River Watershed. A climate change vulnerability assessment was completed for the region as part of the IRWM Plan update. Key demand vulnerabilities identified by the SAWPA Region that relate to EMWD's service area include:

- Increased temperature could lead to increases in industrial cooling water needs
- Seasonal outdoor water use is expected to increase
- Climate-sensitive crops will be impacted
- Continued education and increased employment of efficient use technologies will be required
- Changes in snowmelt patterns in the future may make it difficult to balance water demands

EMWD continues to work toward decreasing demands for potable water through water conservation programs and full utilization of recycled water. EMWD's conversion of agricultural, landscape and industrial uses to recycled water has helped EMWD mitigate climate change impacts on these demands.

EMWD is currently preparing a Climate Action Plan (CAP). EMWD has a two-pronged approach for investing in projects that address climate change. EMWD is committed to investing in climate resilient water supplies and landscapes as well as demand reduction efforts. EMWD is also committed to investing in projects that mitigate climate change by maximizing energy independence, reducing GHG emissions, and advancing policies and strategies that address climate adaptation.





**The Water Conservation Act of 2009, SB X7-7, set a requirement for water agencies to reduce their per capita water use by the year 2020. The overall goal was to reach a statewide reduction of per capita urban water use of 20 percent by December 31, 2020.**

DWR, through a public process, developed and published Methodologies for Calculating Baseline and Compliance Urban Water Per Capita Use for consistent application of SB X7-7 throughout the state.

**IN THIS SECTION**

- Baselines & Targets
- 2020 Compliance

As a wholesaler, EMWD is required to provide an assessment of its present and proposed future measures, programs, and policies that will help its wholesale customers achieve their SB X7-7 water use reduction targets. As both a wholesaler and a retailer, EMWD currently participates in and supports programs developed and implemented by Metropolitan that benefit its entire service area, including wholesale customers. These programs include region-wide rebates for both commercial and residential customers, conservation messaging and outreach, and research and development of new conservation programs and devices. EMWD also actively promotes conservation throughout Riverside County through participation in organizations such as the Riverside County Water Task Force. EMWD will continue to support water reduction by wholesale customers through the use of outreach, technical support, and participation in regional programs. EMWD’s wholesale water conservation efforts are described in more detail in Chapter 9.

Any one of four methods can be used to determine the per capita water use targets. Three methods were specified in the legislation, and the fourth was developed by DWR. The four methods are:

- Method 1: Use 80 percent of the baseline as the per capita water use target.
- Method 2: Use an efficiency standard with targets for indoor use, landscape use, and commercial, industrial, and institutional (CII) use and an optional target for agricultural use.
- Method 3: Use 95 percent of the applicable state hydrologic region target developed by DWR and published in the state’s 20X2020 Water Conservation Plan.
- Method 4: Use an alternative method developed by DWR that accounts for water savings due to water metering and achieving water conservation measures in three water use sectors.

As documented in its 2015 UWMP, EMWD used Method 2 to calculate its target water use for 2020.

Water purveyors were required to define a continuous 10- to 15-year baseline period ending between December 31, 2004 and December 31, 2010 and calculate an average water use over this period. If the percentage of recycled water used in the year 2008 was at least 10 percent of the total water used, the agency could use up to a 15-year period. If the percentage of recycled water was less than 10 percent, a 10-year baseline period was required. Additionally, a continuous five-year period ending between December 31, 2007 and December 31, 2010 was used to confirm that the selected 2020 target meets the minimum water use reduction requirements.

EMWD selected a 10-year baseline period beginning 1999 and ending 2008 despite providing more than 10 percent recycled water in 2008. A 5-year baseline period was chosen between 2003 and 2007 for the target confirmation.

## 5.1 SB X7-7 Forms and Tables

EMWD has completed the required forms for compliance with SB X7-7 and included them in **Appendix C**.

### 5.1.1 Baselines and Target Summary

The baselines and targets calculated in EMWD’s 2015 UWMP are summarized in **Table 5-1**. EMWD is not making any changes to its baselines or targets in the 2020 UWMP.

**Table 5-1. DWR 5-1R Baselines and Targets Summary**

<b>BASELINE PERIOD</b>	<b>START YEAR</b>	<b>END YEAR</b>	<b>AVERAGE BASELINE GPCD*</b>	<b>CONFIRMED 2020 TARGET *</b>
10-15 Year	1999	2008	197	176
5 Year	2003	2007	195	

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

## 5.2 Methods for Calculating Population and Gross Water Use

EMWD used methods consistent with previous UWMPs and guidance from DWR to calculate service area population and gross water use for 2020.

### 5.2.1 Service Area Population

EMWD’s retail baseline population was calculated using DWR’s Population Tool. For 2020, EMWD used the Population Tool in combination with data from the Southern California Association of Governments and estimated persons per connection. The Population Tool uses preloaded Census data for the years 1990, 2000, and 2010 and uploaded service area boundary maps for the corresponding years to calculate service area population in Census years. The annual numbers of single family and multi-family connections in EMWD’s retail service area were used to calculate a population-per-connection ratio for Census years. The Population Tool interpolated the population-per-connection ratio to estimate population for non-Census years.

### 5.2.2 Gross Water Use

Gross water use was calculated using the best available meter data for water entering and exiting EMWD’s distribution system. The distribution system includes potable water service for both domestic and agricultural demand, and raw water service to a few agricultural customers.

Potable sources include potable groundwater wells, treated water from two desalination plants, imported water from Metropolitan and water wheeled from other agencies. Imported water from Metropolitan includes water delivered directly to the potable distribution system and raw water treated at EMWD facilities. Small amounts of water are also delivered from Western Municipal Water District and Rancho California Water District. Only water delivered to the distribution system is included in the gross water calculations. The single source for the raw water system is imported raw water from Metropolitan.

EMWD sells a portion of the water that enters its distribution system to wholesale customers. Some Metropolitan connections also have a portion of water that is diverted to other agencies without entering EMWD’s distribution system. RCWD, EMWD’s largest wholesale customer, has dedicated connections to Metropolitan’s system and does not impact EMWD’s distribution system.

## 5.3 2020 Compliance Daily Per-Capita Water Use (GPCD)

In the 2020 UWMP, agencies must demonstrate compliance with their confirmed 2020 Target GPCD. EMWD estimated its gross water use and service area populations using the methods described for previous years. EMWD did not make any optional adjustments to its 2020 gross water use.

A summary of EMWD’s compliance is provided in Table 5.2.

**Table 5-2. DWR 5-2R 2020 Compliance**

ACTUAL 2020 GPCD*	OPTIONAL ADJUSTMENTS TO 2020 GPCD		2020 CONFIRMED TARGET GPCD	SUPPLIER ACHIEVED TARGETED REDUCTION IN 2020
	TOTAL ADJUSTMENTS*	ADJUSTED 2020 GPCD*		
125	0	0	176	Yes

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

### 5.3.1 Adjustments Due to Factors Outside of a Supplier's Control

EMWD has not made any special adjustments to its water use for 2020.

## 5.4 Regional Alliance

EMWD has elected to comply with SB X7-7 as an individual agency and is not participating in a Regional Alliance.





# 6 Water Supply Characterization

This chapter describes the sources of supply used by EMWD to meet demands.

EMWD's supply sources include local groundwater, imported water from Metropolitan, and recycled water. The discussion in this chapter is structured to follow the order recommended by DWR.

## IN THIS SECTION

- Sources of Supply
- Recycled Water Program
- Projected Future Supply Portfolio

## 6.1 Water Supply Analysis Overview

EMWD has a diverse portfolio of local and imported supplies. Local supplies include recycled water, potable groundwater, and desalinated groundwater. EMWD is a leader in recycled water production and use. EMWD generally uses 100 percent of its recycled water to irrigate landscape and agricultural fields and provide water for industrial customers.

Groundwater is produced from two management areas within the service area. EMWD works diligently with other stakeholders to protect the quality and integrity of the groundwater basins. These efforts include recharging the basins with imported water and limiting native groundwater production when appropriate. EMWD has developed plans to expand groundwater recharge to improve reliability for its customers during normal and dry year demand periods. These plans include water banking which allows for imported water from northern California to be percolated into local aquifers for use during dry years and implementation of an advanced water purification facility for water to be used in aquifer recharge.

In addition to the production of potable groundwater, EMWD treats brackish groundwater at two locations, with a third desalter scheduled to come online during 2021. EMWD's groundwater desalination program has the benefit of not only providing a sustainable, reliable source of potable water for its customers, but also protecting higher quality groundwater from rising levels of brackish groundwater. These local supplies help EMWD meet regional goals for supply reliability and help limit the impact of imported water shortages.

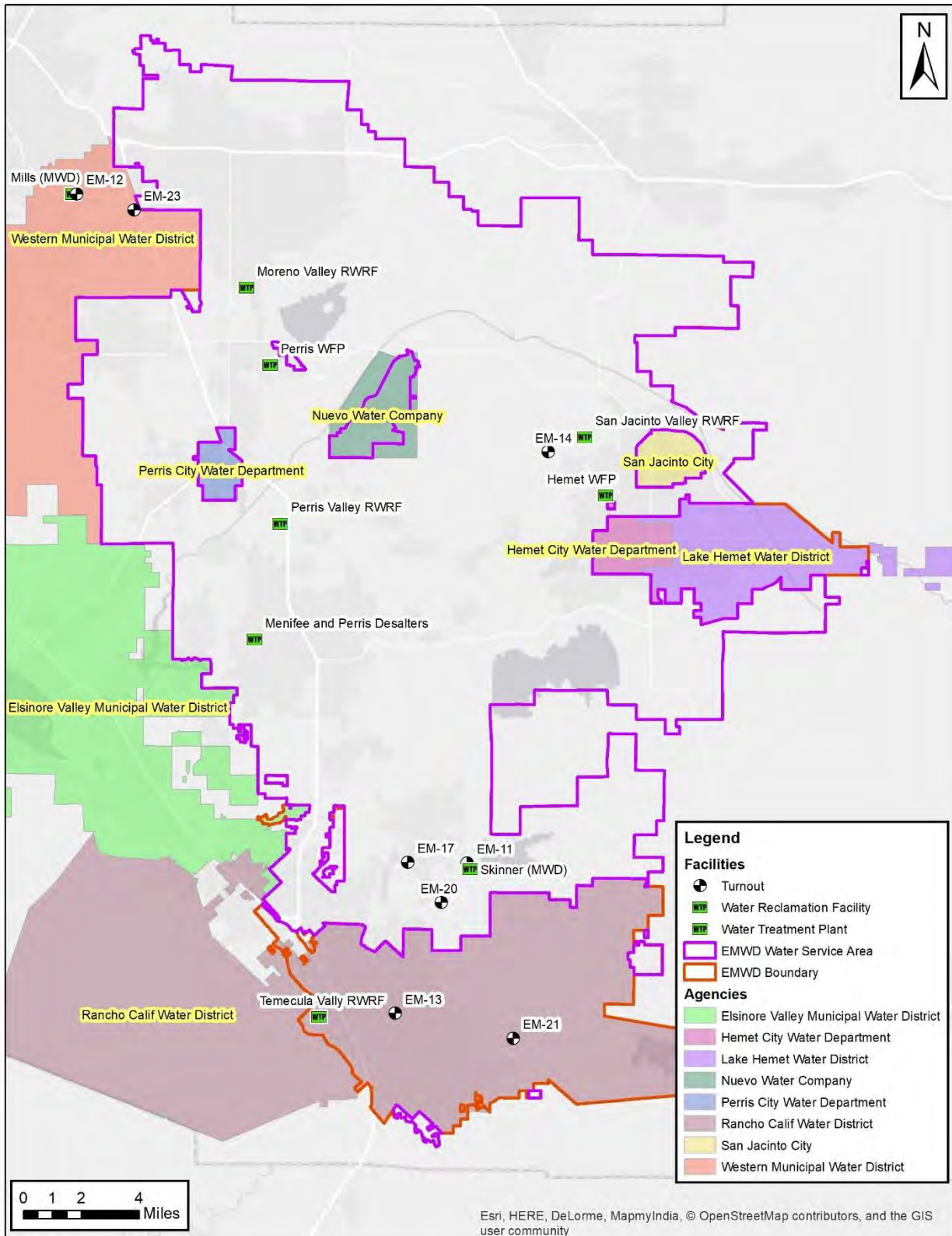
In addition to local supplies, EMWD receives imported water from the Metropolitan Water District of Southern California (Metropolitan) in three forms: delivered directly as potable water, delivered to EMWD as raw water and then treated at EMWD's two local filtration plants, or delivered to EMWD as raw water for non-potable use and groundwater recharge.

Approximately half of the water used in the EMWD service area is imported by Metropolitan. EMWD has been able to maintain a balance of local and imported water even as new connections have been added. This has been accomplished through the implementation of local supply projects and increased water use efficiency.

These supplies are discussed in more detail in the sections that follow. Key facilities in EMWD's service area are shown in **Figure 6-1**.



Figure 6-1. Agencies and Facilities



## 6.2 UWMP Water Supply Characterization

### 6.2.1 Purchased or Imported Water

Metropolitan was formed in 1928 by thirteen Southern California cities to develop, store and distribute water for domestic and municipal purposes to the residents of Southern California. Today, the Metropolitan service area stretches across the Southern California coastal plain to 26 member agencies and includes portions of Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties.

Metropolitan is a wholesale water provider and has no retail customers. It provides treated and untreated water directly to its member agencies. Over the last ten years, Metropolitan has provided between 50 percent and 60 percent of the municipal, industrial, and agricultural water used in its nearly 5,200-square mile service area. The remaining water is provided through local resources and imported water from other sources.

EMWD is one of the 26 member agencies that make up Metropolitan, which include fourteen cities, ten other municipal water districts and one county water authority. The statutory relationship between Metropolitan and its member agencies establishes the scope of EMWD's entitlements from Metropolitan. EMWD, like other member agencies, receives deliveries at different points in the system and pays for the service through a rate structure made up of multiple components. Each year member agencies advise Metropolitan how much water they anticipate they will need during the next five years. Metropolitan then works with member agencies to develop forecasts of long-term future water supply.

Metropolitan delivers supply to member agencies from two sources, the Colorado River Aqueduct (CRA), which it owns and operates, and the State Water Project (SWP), owned and operated by DWR. Additional information about Metropolitan is provided in Metropolitan's 2020 UWMP.

#### EMWD and Metropolitan

The original mission of Metropolitan was to build the CRA, bringing Colorado River water to Southern California. As Metropolitan was constructing the San Jacinto Tunnel Portion of the project, a large amount of seepage was encountered in the pipeline. As the seepage began to affect local water resources within the region, residents began to organize to protect their water supply. Around the same time, the region experienced a period of dry weather conditions and the groundwater basin began to experience overdraft. It became clear that a source of imported water was necessary. EMWD was formed in 1950 to bring imported water into the area. In 1951, it was annexed into Metropolitan and the first major sale of Colorado River water within EMWD began in July of 1952.

In 1960, Metropolitan contracted for additional water supplies from the SWP, operated by DWR. In 1972, the SWP began conveying water from the wet climate of northern California to the dry climate of Southern California. Through the 1980s, EMWD built facilities to take advantage of the SWP water available, and today, EMWD continues to receive a portion of its imported water supply from Northern California. Treated potable water is available in the north from the Mills Water Treatment Plant and in the south through the Skinner Water Treatment Plant. EMWD also owns and operates two water filtration plants that treat raw imported water, in Perris and Hemet. Raw imported water is also used for recharge purposes and to meet agricultural demands.

Metropolitan does not provide supply projections for each member agency. Instead Metropolitan uses a regional approach to developing projections. Metropolitan calculates the demand for the entire region, as discussed in its UWMP. Using information about existing and proposed local projects, Metropolitan then determines the amount of imported water supply and demand. Throughout the preparation of the 2020 UWMP, EMWD has provided to Metropolitan information about local supply

and projects, clarifications on boundary information, and population projections. Based on this information and information provided by other member agencies, Metropolitan has determined it is able to meet the demands of all member agencies through 2045.

## 6.2.2 Groundwater

EMWD produces potable groundwater from two management plan areas within the San Jacinto Groundwater Basin. Both management plan areas are part of the San Jacinto Groundwater Basin (DWR Bulletin 118 Groundwater Basin Number 8-05). The areas are the West San Jacinto Groundwater Sustainability Agency Plan Area (West San Jacinto Basin) and the Hemet/San Jacinto Water Management Plan area (Hemet/San Jacinto Basin). EMWD also owns and operates two desalination plants that convert brackish groundwater from the West San Jacinto Basin into potable water. These plants not only provide a reliable source of potable water, but they also protect potable sources of groundwater and support EMWD's groundwater salinity management program.

### **EMWD is a key player in three cooperative efforts to protect groundwater quality and reliability:**

- The West San Jacinto Basin was formerly governed by the West San Jacinto Groundwater Basin Management Plan (WSJ Management Plan), developed in 1995 and included in Appendix E of this UWMP. Eastern Municipal Water District (EMWD), acting as the Groundwater Sustainability Agency (GSA) for the non-adjudicated portions of the San Jacinto Groundwater Basin, has developed a Groundwater Sustainability Plan (GSP) in compliance with the 2014 Sustainable Groundwater Management Act (SGMA), which is codified in California Water Code (CWC), Part 2.75 (Sustainable Groundwater Management), Section 10720 et seq. The West San Jacinto Basin will be governed by the GSP following its adoption by January 31, 2022.
- The Hemet / San Jacinto (HSJ) Management Plan is implemented by the Hemet-San Jacinto Watermaster (Watermaster). The Watermaster was appointed and is supervised by the Superior Court of the State of California for the County of Riverside, pursuant to the Stipulated Judgment entered in April 2013 (Appendix G).
- Additionally, a subset of participants (EMWD, LHMWD and the Soboba Band of Luiseño Indians [Soboba Tribe]) also actively manage water levels under a separate agreement under the Canyon Operating Plan.

Native potable groundwater production in the Hemet/San Jacinto Basin is limited according to HSJ Management Plan provisions to prevent continued overdraft. EMWD anticipated the limitations on native groundwater production it has experienced and has developed alternatives to assure reliability including an Integrated Recharge and Recovery Program (IRRP), filtration plants to treat and deliver imported water to areas dependent on groundwater, and recycled water use for irrigation of landscape and agriculture. In addition to the existing IRRP, EMWD is developing the Enhanced Recharge and Recovery Program (ERRP) to increase conjunctive use and facilitate groundwater banking. Phase 1 of the ERRP program is included in the Santa Ana River Conservation & Conjunctive Use Program (SARCCUP), a cooperative program between Metropolitan, EMWD, and other agencies in the Santa Ana Watershed to store imported water during wet years for use during dry years.

Portions of EMWD also overlay the Santa Margarita Valley Groundwater Basin. EMWD does not extract groundwater from the Santa Margarita Valley Groundwater Basin and has no plans to do so.

### 6.2.2.1 Basin Description

The West San Jacinto Basin and the Hemet/San Jacinto Basin are both located within the San Jacinto Groundwater Basin. Groundwater management zones within the San Jacinto Groundwater Basin were delineated based on areas of lower groundwater flow, groundwater divides, and changes in groundwater quality. The West San Jacinto Basin covers the Perris North, Perris South, San Jacinto Lower Pressure, and Menifee Groundwater Management Zones, and the Lakeview portion of the Lakeview/Hemet North Groundwater Management Zone. The Hemet/San Jacinto Basin is comprised of the Hemet South, Canyon, and San Jacinto Upper Pressure Groundwater Management Zones, as well as the Hemet North portion of the Lakeview/Hemet North Groundwater Management Zone.

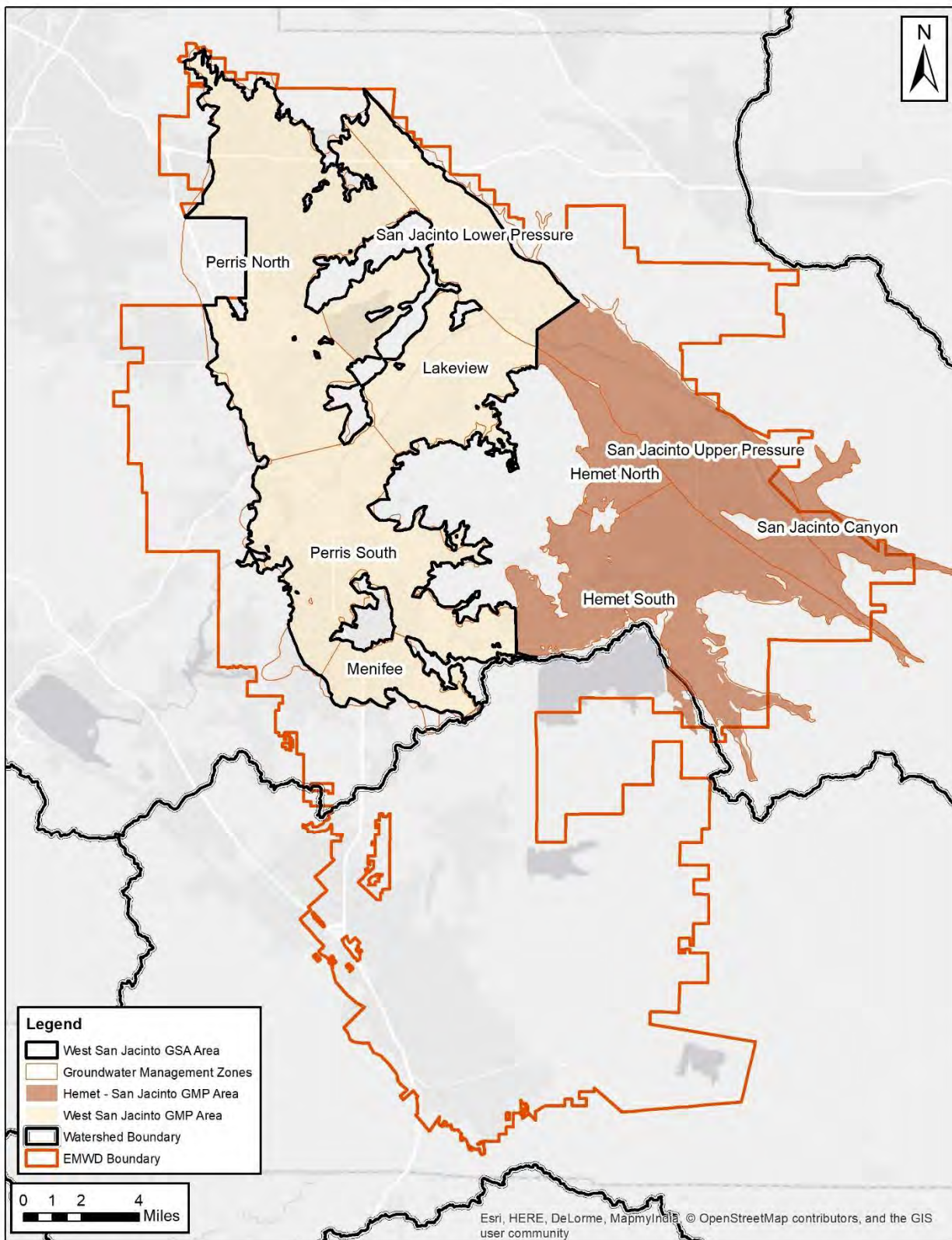
EMWD produces water for potable use or blending in four of the groundwater management zones: Perris North, Hemet South, San Jacinto Upper Pressure and Canyon. Desalter production wells are located in the Perris South and Lakeview/Hemet North Groundwater Management Zones. The Groundwater Management Zones are summarized in **Table 6-1** and are shown in **Figure 6-2**.



**Table 6-1. Groundwater Management Zones**

BASIN	MANAGEMENT AREA	DESCRIPTION
WEST SAN JACINTO	Perris North	Boundaries include the Casa Loma fault to the northeast bordering the San Jacinto Lower Pressure Management Zone; a bedrock constriction to the south bordering the Perris South Groundwater Management Zone; the Bernasconi Hills and the Lakeview Mountains to the west; and the bedrock and surrounding hills the north and west. The Casa Loma fault zone is generally not a barrier to groundwater flow in this section of the fault. Therefore, groundwater leaks across the fault zone as underflow from the San Jacinto Lower Pressure Groundwater Management Zone.  Lake Perris is located to the east of the Perris North Groundwater Management Zone and is surrounded by the Bernasconi Hills and Lakeview Mountains to the north, east, and south, and a dam on the west side. Seepage is known to occur under the dam through a subterranean channel into the Perris North Groundwater Management Zone.
	Perris South	Boundaries include a groundwater divide in the Winchester area; bedrock constrictions/saddles bordering the Menifee Groundwater Management Zone; a bedrock constriction/saddle bordering the Lakeview/Hemet North Groundwater Management Zone; a bedrock constriction bordering the Perris North Groundwater Management Zone; and the surrounding bedrock mountains and hills. A groundwater divide exists in the Winchester area near Highway 79. The divide is likely an artifact of natural and artificial recharge and groundwater production patterns. As such, the position (or the very existence) of this groundwater divide may vary with changing seasons, artificial recharge and/or production patterns.  Southwest of EMWD's Winchester Ponds, a narrow constriction in the bedrock coincides with a buried bedrock saddle. This area of constriction in the water-bearing alluvium is a boundary between the Perris South and Menifee Groundwater Management Zones. Groundwater can flow through this bedrock gap from the Winchester area into the Menifee Groundwater Management Zone; this is especially true during times of high groundwater levels. Southeast of Sun City, a bedrock constriction in the water-bearing alluvium is also a boundary between the Perris South and Menifee Groundwater Management Zones. Groundwater flows through this bedrock gap from the Sun City area into the Menifee Groundwater Management Zone.  To the northeast, the gap between the Bernasconi Hills and the Lakeview Mountains becomes narrow and the buried bedrock surface forms a saddle. This area of constriction in the water-bearing alluvium is the boundary between the Perris South and Lakeview Groundwater Management Zones. Under historic flow conditions, groundwater flowed westward from Lakeview into Perris South. However, groundwater currently flows from Perris South eastward into Lakeview toward a "pumping depression" in the groundwater table.
	San Jacinto Lower Pressure	Boundaries include the Claremont fault to the northeast; the Casa Loma fault and its northwestward extension; various crystalline bedrock outcrops to the north and west; and the flow system boundary with the San Jacinto Upper Pressure Groundwater Management Zone to the southeast. The Casa Loma fault zone is a leaky barrier to groundwater flow to the Perris North Groundwater Management Zone in this section of the San Jacinto Groundwater Basin. Recharge rates along with water quality differences between San Jacinto Upper Pressure and San Jacinto Lower Pressure characterize the location of the barrier between the two zones.
	Menifee	Boundaries include the bedrock constrictions/saddles bordering the Perris South Groundwater Management Zone, a bedrock constriction to the east, and the surrounding bedrock mountains and hills. Southwest of the Winchester Ponds, a narrow constriction in the bedrock coincides with a buried bedrock saddle surface. This area of constriction in the water-bearing alluvium is a boundary between the Perris South and Menifee Groundwater Management Zones. Groundwater can flow through this bedrock gap from the Winchester area into the Menifee Groundwater Management Zone, especially during times of high groundwater levels. Southeast of Sun City, a bedrock constriction in the water-bearing alluvium is also a boundary between the Perris South and Menifee Groundwater Management Zones. Groundwater flows through this bedrock gap from the Sun City area into the Menifee Groundwater Management Zone.
WSJ AND HSJ	Lakeview / Hemet North	Boundaries of the Lakeview/Hemet North Groundwater Management Zone include the Casa Loma fault zone to the east; the groundwater divide near Esplanade Avenue to the south; the Lakeview Mountains to the west and south; the Bernasconi Hills to the north; and a bedrock constriction/saddle to the west. The Casa Loma fault zone is a partial barrier to groundwater flow. Generally, groundwater leaks across the fault zone as underflow from the San Jacinto Upper Pressure Groundwater Management Zone. Impermeable, crystalline bedrock outcrops that compose the Bernasconi Hills and the Lakeview Mountains to the north and south, respectively, are hard rock barriers to groundwater flow. To the west, the gap between the Bernasconi Hills and the Lakeview Mountains becomes narrow and the buried bedrock surface forms a saddle. This area of constriction in the water-bearing alluvium is the boundary between the Perris South and Lakeview/Hemet North Groundwater Management Zones.
HEMET/SAN JACINTO	Hemet South	Boundaries include the Casa Loma and Bautista Creek fault zones to the east; the groundwater divide near Esplanade Avenue to the north; the Lakeview Mountains to the northwest; the groundwater divide in the Winchester area to the west; and various crystalline bedrock outcrops to the south. The Casa Loma and Bautista Creek fault zones are generally known barriers to groundwater. However, groundwater leaks across portions of the Casa Loma Fault Zone as underflow into the San Jacinto Upper Pressure Groundwater Management Zone.
	San Jacinto Canyon	The boundaries include the San Jacinto Mountains to the east, north, and south, as well as the San Jacinto fault zone to the west. The San Jacinto Mountains are composed of consolidated crystalline bedrock and semi-consolidated sedimentary rocks. These rocks are relatively impermeable, providing limited groundwater seepage into the basin and bound the water-bearing, alluvium-filled canyons within this groundwater management zone. A branch of the San Jacinto fault zone extends southeast along the channel of Bautista Creek until it intersects the Park Hill fault and acts as an impermeable barrier at depth. The barrier effect of the fault forces groundwater upwards within the San Jacinto River upstream of the fault causing muddy areas at the surface. This area is known as the Cienega and is an area of significant municipal groundwater production.
	San Jacinto Upper Pressure	The San Jacinto Upper Pressure Groundwater Management Zone is bounded by the San Jacinto fault to the northeast, the Casa Loma and Bautista Creek fault zones to the southwest and the flow system boundary with the San Jacinto Lower Pressure Groundwater Management Zone to the northwest. The Claremont fault is a known barrier to groundwater flow and separates the San Jacinto Graben from both the San Timoteo Badlands and the San Jacinto Mountains. East of the City of San Jacinto, a branch of the San Jacinto fault zone cuts the alluvial fill by extending southeast across the San Jacinto River and along the channel of Bautista Creek until it intersects the Park Hill fault. This branch of the San Jacinto fault zone separates the San Jacinto Upper Pressure Groundwater Management Zone from the Canyon Groundwater Management Zone. The Casa Loma and Bautista Creek fault zones are generally known barriers to groundwater flow. However, studies show groundwater leaks across portions of the Casa Loma Fault zones as underflow along the Hemet South and Lakeview/Hemet North Groundwater Management Zones.

Figure 6-2. Groundwater Management Zones



### 6.2.2.2 WSJ Management

In the West San Jacinto Basin, a cooperative groundwater management plan is already in place to protect the reliability and quality of the water supply. In June 1995, EMWD adopted the WSJ Management Plan in accordance with the statutes in the California Water Code Sections 10750 through 10755 resulting from the passage of AB 3030. The plan was adopted after extensive public outreach and meetings with interested individuals and agencies. A copy of the Management Plan is included in **Appendix E**.

Implementation of the WSJ Management Plan began directly after its adoption. Initial efforts to implement the WSJ Management Plan included establishing an advisory committee; prioritizing the management zones; evaluating groundwater resources including establishing groundwater quality, level, and extraction monitoring programs; and conducting hydro-geophysical investigations. The West San Jacinto Groundwater Basin Management Plan Annual Report, documenting the implementation of the plan and activities in the groundwater management zones, has been published annually since 1996.

SGMA was passed into law in 2014 and required that medium and high priority groundwater basins designated by the DWR be managed by GSAs. The San Jacinto Groundwater Basin was deemed a high priority basin by the DWR. Subsequently, EMWD notified DWR of its intent to become the GSA for the non-adjudicated portion of the San Jacinto Groundwater Basin in January 2017. EMWD performed an extensive public outreach effort to ensure that the interests of all beneficial uses and users of groundwater would be considered in the process of forming the GSA, and in the development and implementation of this GSP. After EMWD staff conducted public workshops, reached out to stakeholder agencies (e.g., cities, counties, water districts, watermasters, and state agencies), and circulated notices in the press, the EMWD Board of Directors approved Resolution No. 2016-135 in December 2016, which formalized EMWD's intention to be the GSA for the West San Jacinto GSA Area and, EMWD's Board of Directors became the exclusive GSA for the western portion of the San Jacinto Groundwater Basin on April 24, 2017.

EMWD, as the GSA, initiated the development of the San Jacinto Groundwater Basin GSP in February 2019 and is anticipated to adopt and submit the GSP to the DWR by January 31, 2022. The purpose of the GSP is to define the conditions under which the groundwater resources of the West San Jacinto GSA Plan Area, which support agricultural, domestic, municipal and industrial, and environmental uses, will be managed sustainably in the future. The adoption of the GSP represents the commitment of the West San Jacinto GSA to maintain long-term, sustainable use of groundwater resources within the West San Jacinto GSA Plan Area, as required by SGMA. Over the next 20 years, data will continue to be gathered, analyzed, and used to refine the estimated sustainable yield and understanding of the sources of and influences on degraded water quality. As the understanding of the West San Jacinto GSA Plan Area improves, the findings of this GSP will be evaluated and updated as necessary. The GSP documents a viable approach, determined by the GSA in collaboration with stakeholders and informed by the best available information, to maintaining the long-term sustainability of the groundwater resources within the West San Jacinto GSA Plan Area.

### 6.2.2.3 HSJ Management

In 2001, the Cities of Hemet and San Jacinto, LHMWD, EMWD, and representatives of the private groundwater producers, with DWR acting as an impartial mediator, began working on a groundwater management plan for the Hemet/San Jacinto Basin. The group discussed and resolved several controversial issues, including San Jacinto Tunnel seepage water, the Fruitvale Judgment and Decree, export of groundwater from the basins, and how to maximize the use of recycled water. As a result of their efforts, a final HSJ Management Plan was completed in 2007, and a Stipulated Judgment was entered with the Superior Court of the State of California for the County of Riverside in April of 2013. These documents are included in **Appendix G**.

The HSJ Management Plan:

- Limits the amount of water being extracted from the basin free of the replenishment charge to a sustainable yield.
- Implements continued recharge of the basin using imported water through the IRRP.
- Ensures settlement claims by the Soboba Tribe are facilitated and accommodated.
- Expands the existing water production and water services system to meet future urban growth through the use of imported water recharged into the basin.
- Protects and/or enhances water quality in the Hemet/San Jacinto Basin.
- Supports cost-effective water supplies and treatment by the public agencies.
- Eliminates groundwater overdraft and enhances basin yield.
- Continues the monitoring program to promote and provide for best management and engineering principles to protect water resources.

Long-term groundwater management includes recharge using Metropolitan replenishment water via permanent facilities through the IRRP Program. An agreement with the Soboba Tribe (the Soboba Settlement Agreement) requires Metropolitan to deliver, on average, 7,500 AFY of water for the next 30 years to EMWD, LHMWD, and the Cities of Hemet and San Jacinto as part of an effort to recharge groundwater in the Hemet/San Jacinto Basin, fulfilling the Soboba Tribe's water rights and addressing chronic groundwater overdraft. A copy of the Agreement is included in **Appendix H**.

In 2015, the Canyon Operating Plan, an agreement between EMWD, LHMWD and the Soboba Tribe, was completed as a result of a Memorandum of Understanding (MOU) related to the Soboba Settlement Act. The Canyon Operating Plan provides a framework for operating the Canyon Management Zone in a manner to avoid significant impacts to the Soboba Tribe's wells and does not reduce the overall supply available in the Hemet/San Jacinto Basin.

The HSJ Management Plan recognizes that the Hemet/San Jacinto Basin is presently in a condition of groundwater overdraft. The Watermaster has implemented long-term base production rights that will eliminate overdraft conditions within the Hemet/San Jacinto Basin, with interim production rights that step down gradually. The long-term adjusted base production right for EMWD is 7,303 AF annually.

In addition to the recharge occurring under the Soboba Settlement Agreement and future recharge under ERRP, EMWD has historically also recharged groundwater in the Hemet/San Jacinto Basin with imported surplus water from Metropolitan since 1990 using temporary facilities constructed under various pilot programs. EMWD and the other three local HSJ agencies are also contributing to the replenishment of the basin by providing recycled water in lieu of groundwater production. The Recycled In-Lieu Program supplies recycled water for agricultural irrigation in-lieu of pumping native groundwater. The project costs are jointly funded by EMWD, LHMWD, and the Cities of Hemet and San Jacinto. Agreements that set limits on groundwater production and provide for a payment of a portion of the operation and maintenance costs have been in place since 2008.



### 6.2.2.4 Past Five Years

The volume of groundwater pumped by EMWD for the past five years is reported in **Table 6-2**. The volumes in the table include potable groundwater pumped from the Hemet/San Jacinto Basin and the West San Jacinto Basin as well as brackish groundwater pumped from the West San Jacinto Basin that is treated at EMWD’s desalters before being used as a potable supply. Brackish groundwater volumes reported in **Table 6-2** are reported as a desalinated water supply in other supply tables of this UWMP. EMWD does not use groundwater to meet wholesale demands.

**Table 6-2. DWR 6-1R Groundwater Volume Pumped**

GROUNDWATER TYPE	LOCATION OR BASIN NAME	2016	2017	2018	2019	2020
Alluvial Basin	Hemet/San Jacinto Basin portion of the San Jacinto Groundwater Basin (DWR 8-05)	6,171	6,498	6,367	5,213	9,383
Alluvial Basin	Pumping of EMWD share of unused Soboba Settlement Water recharged in the Hemet/San Jacinto Basin portion of the San Jacinto Groundwater Basin (DWR 8-05)	3,585	3,864	3,850	1,508	2,625
Alluvial Basin	West San Jacinto Basin portion of the San Jacinto Groundwater Basin (DWR 8-05)	4,429	2,908	3,307	1,323	2,402
Alluvial Basin	Brackish Groundwater from the West San Jacinto Basin portion of the San Jacinto Groundwater Basin (DWR 8-05)	10,254	8,585	8,547	9,801	9,565
<b>TOTAL:</b>		<b>24,439</b>	<b>21,855</b>	<b>22,071</b>	<b>17,845</b>	<b>23,975</b>

1) Brackish groundwater pumped from the West San Jacinto Basin is not a direct supply – it is used to feed desalination facilities. The treated volume of this supply is shown in the other supply tables of this chapter as desalinated water instead of groundwater.

2) EMWD share of unused Soboba Settlement Water is pumped from wells in the Hemet/San Jacinto Basin. However, since this volume originates from water imported under the Soboba Settlement Agreement (and unused by the Soboba Tribe), this supply is shown in other supply tables of this chapter as imported water instead of groundwater.

3) In 2019 EMWD voluntarily reduced groundwater pumping through participation in Metropolitan’s cyclic storage program.

### 6.2.3 Surface Water

EMWD holds a right to divert up to 5,760 AFY of San Jacinto River flows for recharge and subsequent use from September 1st through June 30th each year. EMWD’s diversion and recharge of San Jacinto River surface water to the Canyon Management Zone takes place at EMWD’s Grant Avenue Ponds in the Valle Vista area. EMWD’s diverted water is recharged into the groundwater aquifer of the Canyon Groundwater Management Zone and is not used for direct use or sale. The San Jacinto River is an ephemeral river and, consequently, river flows may be insufficient for any diversion at all in some years. Water that is recharged helps the regional water balance and contributes to the safe yield of the basin.

### 6.2.4 Stormwater

The San Jacinto Water Harvesting Project allows EMWD to capture stormwater for the purposes of recharging the groundwater aquifers in the Hemet/San Jacinto Basin. The San Jacinto Water Harvesting Project uses the San Jacinto Reservoir as a retention basin for flows rerouted from Riverside County Flood Control and Water Conservation District storm drain Line E. The San Jacinto Water Harvesting Project is currently not monitored; however, at time of construction, the project was estimated to capture 300 to 320 AFY of storm water on a long-term average.

A potential stormwater capture component was considered during preliminary design of the Phase I Facilities, but it was not determined to be cost-effective. Later phases of the ERRP project may reevaluate the cost-effectiveness of a stormwater capture component.

## 6.2.5 Wastewater and Recycled Water

EMWD provides wastewater collection, treatment, and recycled water services throughout its service area. Recycled water is extensively used in EMWD’s service area to meet non-potable demands. The supply of recycled water will continue to increase with EMWD’s population size (though it is also impacted by conservation measures). The four RWRFs that EMWD operates have recently completed expansions. Recycled water is currently used for both municipal and agricultural purposes. Municipal customers use recycled water for landscape irrigation and industrial process water. Agricultural customers use recycled water for irrigation of crops. A portion of agricultural demand for recycled water is provided in-lieu of using groundwater. Due in part to drier conditions and higher demands, EMWD has been able to meet its goal of eliminating discharges and using almost all of the recycled water available within EMWD. Some of the recycled water use offsets demands of existing potable customers.

### 6.2.5.1 Wastewater Collection, Treatment, and Disposal

EMWD is responsible for all wastewater collection and treatment in its service area. It has four operational RWRFs located throughout EMWD. Inter-connections between the local collection systems serving each treatment plant allow for operational flexibility, improved reliability, and expanded deliveries of recycled water. All of EMWD’s RWRFs produce tertiary effluent, suitable for all permitted uses, including irrigation of food crops and full-body contact. The four RWRFs have a combined capacity of 86,300 AFY as summarized in **Table 6-3**.

**Table 6-3. RWRf Treatment Capacity**

FACILITY	TREATMENT CAPACITY (AFY)
San Jacinto Valley	15,700
Moreno Valley	17,900
Temecula Valley	25,800
Perris Valley	26,900
<b>TOTAL</b>	<b>86,300</b>

**Table 6-4. DWR 6-2R Wastewater Collected within Service Area in 2020**

WASTEWATER COLLECTION			RECIPIENT OF COLLECTED WASTEWATER			
NAME OF WASTEWATER COLLECTION AGENCY	WASTEWATER VOLUME METERED OR ESTIMATED	WASTEWATER VOLUME COLLECTED FROM UWMP SERVICE AREA IN 2020 (AFY)	NAME OF WASTEWATER AGENCY RECEIVING COLLECTED WASTEWATER	WASTEWATER TREATMENT PLANT NAME	WASTEWATER TREATMENT PLANT LOCATED WITHIN UWMP AREA	WWTP OPERATION CONTRACTED TO A THIRD PARTY
Eastern Municipal Water District	Metered	8,194	Eastern Municipal Water District	San Jacinto Valley RWRF	Yes	No
Eastern Municipal Water District	Metered	11,507	Eastern Municipal Water District	Moreno Valley RWRF	Yes	No
Eastern Municipal Water District	Metered	16,090	Eastern Municipal Water District	Temecula Valley RWRF	Yes	No
Eastern Municipal Water District	Metered	17,282	Eastern Municipal Water District	Perris Valley RWRF	Yes	No
<b>TOTAL:</b>		<b>53,073</b>				

**Table 6-5. DWR 6-3R Wastewater Treatment and Discharge within Service Area in 2020**

WASTEWATER TREATMENT PLANT NAME	DISCHARGE LOCATION NAME OR IDENTIFIER	DISCHARGE LOCATION DESCRIPTION	WASTEWATER DISCHARGE ID NUMBER	METHOD OF DISPOSAL	PLANT TREATS WASTEWATER GENERATED OUTSIDE THE SERVICE AREA	TREATMENT LEVEL	2020 VOLUMES (AFY)				INSTREAM FLOW PERMIT REQUIREMENT
							WASTEWATER TREATED	DISCHARGED TREATED WASTEWATER	RECYCLED WITHIN SERVICE AREA	RECYCLED OUTSIDE OF SERVICE AREA	
San Jacinto Valley RWRF	Reach 4 Dissipater	Temescal Creek		River or creek outfall	No	Tertiary	7,441	436	6,319		
Moreno Valley RWRF	Reach 4 Dissipater	Temescal Creek		River or creek outfall	No	Tertiary	10,451	1,600	8,874		
Temecula Valley RWRF	Reach 4 Dissipater	Temescal Creek		River or creek outfall	No	Tertiary	14,612	1,600	12,407		
Perris Valley RWRF	Reach 4 Dissipater	Temescal Creek		River or creek outfall	No	Tertiary	15,696	3,637	13,327		
<b>TOTAL:</b>							<b>48,200</b>	<b>7,273</b>	<b>40,927</b>	<b>0</b>	<b>0</b>

1) Volumes recycled from each facility in the table were estimated based on the proportion of wastewater collected and treated at each plant compared to the total volume of wastewater treated

2) Recycled water sold to RCWD and EVMWD is included in the total volume recycled within EMWD's service area and not reported separately in DWR Table 6-3 for wholesale. Recycled water deliveries to wholesale customers are distinguished from retail sales in DWR Table 6-4.

6.2.5.2 Recycled Water Coordination

As a full-spectrum provider of water, wastewater collection, and treatment and recycled water services, EMWD has been active in developing local and regional plans for expanded water recycling in its service area. EMWD’s first Recycled Water Facilities Master Plan was developed in 1990. In 2009, EMWD completed a Recycled Water System Strategic Plan that provides guidelines for moving forward with recycled water projects. Information from the strategic plan was incorporated into the EMWD Integrated Resource Plan (IRP) to evaluate potential recycled water projects. Both the Recycled Water Facilities Master Plan and the Recycled Water Strategic Plan were updated in 2016. EMWD’s local water recycling plan is also incorporated into the IRWM Plan developed by SAWPA for the Santa Ana River Watershed.

EMWD has worked closely with the Santa Ana Regional Water Quality Control Board in updating local basin plans and developing a long-term salinity management plan to support and ensure compliance with local basin objectives for salinity and nitrogen. EMWD is involved with a variety of local agencies and public interest groups in recycled water planning efforts and has coordinated with these agencies as part of the development of this UWMP. **Table 6-6** lists agencies participating in recycled water planning.

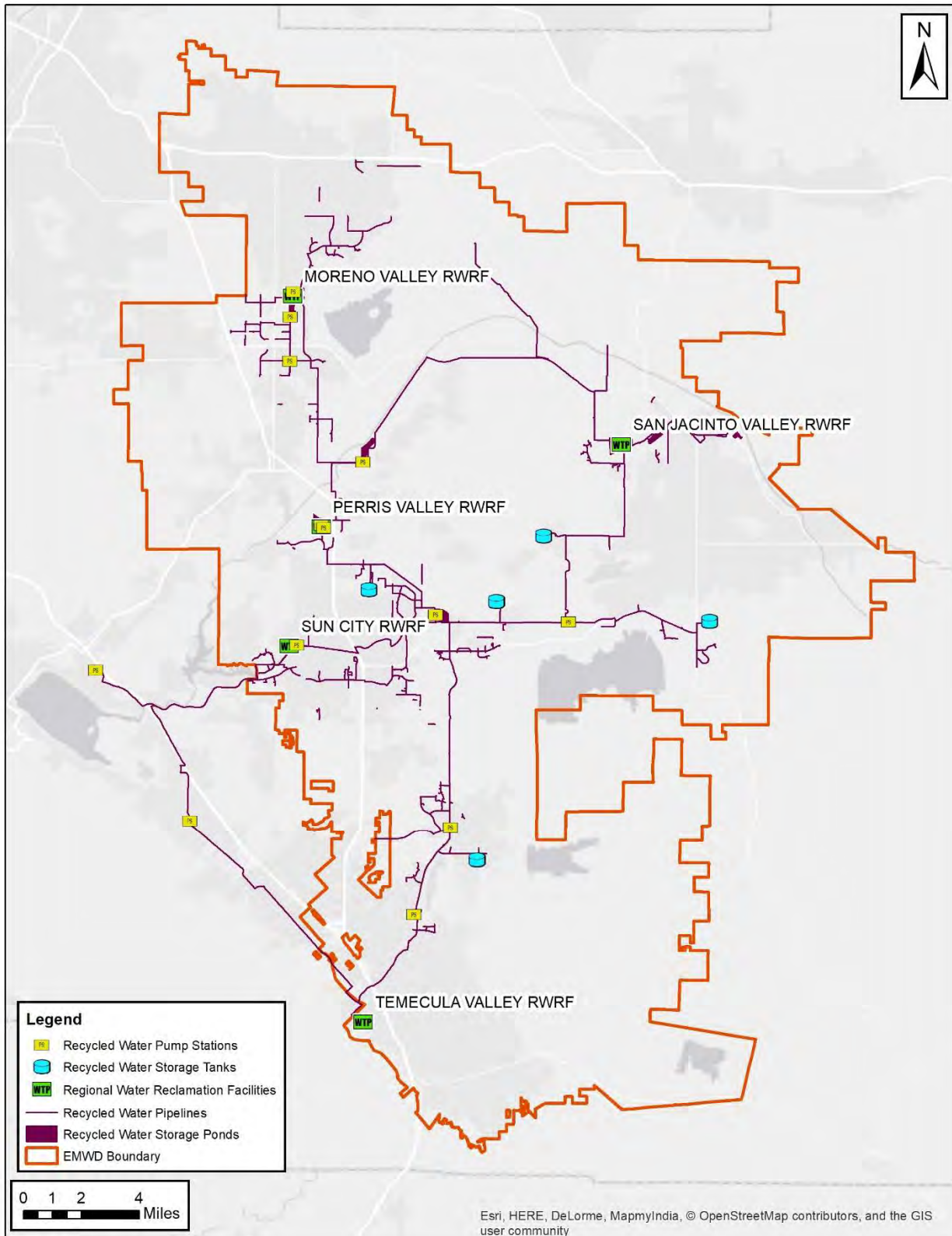
**Table 6-6. Recycled Water Coordination Agencies**

GROUP / AGENCY	ROLE
Santa Ana Watershed Project Authority	Regional Cooperative Planning
Santa Ana Regional Water Quality Control Board	Basin Planning / Salinity Management.
Rancho California Water District	Facility Planning / Market Development
West San Jacinto Groundwater Management Plan Advisory Board	Plan Review / Public Oversight
Hemet/San Jacinto Groundwater Management Plan Policy Committee (Cities of Hemet and San Jacinto, and Lake Hemet Municipal Water District)	Plan Review / Public Oversight
Elsinore Valley Municipal Water District	Facility Planning / Market Development
EMWD Recycled Water Advisory Committee	Plan Review / Public Oversight
San Jacinto Watershed Council	Plan Review / Public Oversight
Lake Elsinore/San Jacinto Watershed Authority	Plan Review / Water Quality
Metropolitan Water District of Southern California	Regional Urban Water Mgmt. Planning / Funding

6.2.5.3 Recycled Water System Description

The majority of recycled water sold is used for agricultural irrigation. A portion of the water sold for agriculture is used in lieu of groundwater, preserving the groundwater basin, and improving water supply reliability. In addition to meeting agricultural demand, recycled water is delivered to municipal customers for landscape irrigation. EMWD also sells recycled water to the California Department of Fish and Wildlife (CDFW) for environmental use within the San Jacinto Wildlife Area and to recreational customers that are comprised of private duck clubs and bird sanctuaries that use recycled water for ponds. EMWD uses existing storage facilities to store water during off peak periods for delivery in peak months and maximize the amount of recycled water sold. EMWD’s recycled water production and distribution facilities are shown in **Figure 6-3**.

**Figure 6-3. EMWD Recycled Water System**



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

EMWD's current and projected retail recycled water sales are summarized in **Table 6-7**.

EMWD's wholesale customer category consists of recycled water delivered to other agencies for use in their service areas. EMWD delivers recycled water to EVMWD and RCWD. EMWD's wholesale current and projected recycled water use is shown in **Table 6-8**.

**Table 6-7. DWR 6-4R Recycled Water within Service Area in 2020**

Name of Supplier Producing (Treating) the Recycled Water:	Eastern Municipal Water District									
Name of Supplier Operating the Recycled Water Distribution System:	Eastern Municipal Water District									
Supplemental Volume of Water Added in 2020:	0									
Source of 2020 Supplemental Water:	N/A									
BENEFICIAL USE TYPE	POTENTIAL BENEFICIAL USES OF RECYCLED WATER	AMOUNT OF POTENTIAL USES OF RECYCLED WATER	GENERAL DESCRIPTION OF 2020 USES	LEVEL OF TREATMENT	2020	2025	2030	2035	2040	2045
AGRICULTURAL IRRIGATION				Tertiary	21,178	22,240	24,640	20,000	20,000	20,000
LANDSCAPE IRRIGATION (EXCLUDES GOLF COURSES)				Tertiary	4,275	7,600	10,080	10,600	11,100	11,100
GOLF COURSE IRRIGATION				Tertiary	1,457	2,750	3,130	3,500	3,500	3,500
INDUSTRIAL USE				Tertiary	0	440	870	1,310	1,310	1,310
RECREATIONAL IMPOUNDMENT				Tertiary	1,029	1,400	1,400	1,400	1,400	1,400
WETLANDS OR WILDLIFE HABITAT				Tertiary	3,231	4,500	4,500	4,500	4,500	4,500
GROUNDWATER RECHARGE (INDIRECT POTABLE REUSE)				Blend of Tertiary and Advanced Water Treatment		4,100	4,100	12,300	12,300	12,300
OTHER			Split between agricultural and landscape usage, proportion to be determined in future	Tertiary				590	5,390	9,690
OTHER			Construction	Tertiary	73	300	300	300	300	300
<b>TOTAL:</b>					<b>31,243</b>	<b>43,330</b>	<b>49,020</b>	<b>54,500</b>	<b>59,800</b>	<b>64,100</b>

Note: Some recycled water in EMWD's storage ponds infiltrates into the ground or evaporates. DWR does not consider this water to be put to beneficial use, and therefore those volumes are not included in the table.

**Table 6-8. DWR 6-4W Recycled Water Within Service Area in 2020**

NAME OF RECEIVING SUPPLIER OR DIRECT USE BY WHOLESALER	LEVEL OF TREATMENT	2020	2025	2030	2035	2040	2045
Elsinore Valley Municipal Water District	Tertiary	533	1,120	1,120	1,120	1,120	1,120
Rancho California Water District	Tertiary	752	3,650	4,060	4,480	4,480	4,480
<b>TOTAL:</b>		<b>1,285</b>	<b>4,770</b>	<b>5,180</b>	<b>5,600</b>	<b>5,600</b>	<b>5,600</b>



EMWD's board has a policy to reuse 100 percent of the recycled water produced. The actual 2020 use is compared to the projections from the 2015 UWMP in **Table 6-9** and **Table 6-10**.

**Table 6-9. DWR 6-5R 2015 Recycled Water Use Projection Compared to 2020 Actual**

BENEFICIAL USE TYPE	2015 PROJECTION FOR 2020	2020 ACTUAL USE
Agricultural Irrigation	18,784	21,178
Landscape Irrigation (excludes golf courses)	5,124	4,275
Golf Course Irrigation	2,375	1,457
Commercial Use	300	0
Industrial Use	2,912	0
Recreational Impoundment	1,250	1,029
Wetlands or Wildlife Habitat	4,500	3,231
Other (Construction)	0	73
<b>TOTAL:</b>	<b>35,245</b>	<b>31,243</b>

Note: Some recycled water in EMWD's storage ponds infiltrates into the ground or evaporates. DWR does not consider this water to be put to beneficial use, and therefore those volumes are not included in the table.

**Table 6-10. DWR 6-5W 2015 Recycled Water Use Projection Compared to 2020 Actual**

NAME OF RECEIVING SUPPLIER OR DIRECT USE BY WHOLESALER	2015 PROJECTION FOR 2020	2020 ACTUAL USE
Elsinore Valley Municipal Water District	289	533
Rancho California Water District	1,367	752
<b>TOTAL:</b>	<b>1,656</b>	<b>1,285</b>

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

EMWD is considering several options for the expansion of recycled water use in EMWD's service area. Historically, EMWD has used recycled water to meet the needs of agricultural and landscape demands. Water has also been used for environmental purposes at the CDFW's San Jacinto Wildlife Area. Other proposed special projects include Indirect Potable Reuse (IPR) using recycled water from the San Jacinto Valley RWRf for groundwater recharge.

IPR is included in EMWD's IRP and modeled under several hydraulic and supply conditions. EMWD's Recycled Water Strategic Plan and Recycled Water Facilities Master Plan also evaluate the storage and system improvements needed to offset peak demand. Additional storage is not required to fully utilize EMWD's recycled water supply.

To ensure that recycled water continues to be used to the fullest extent possible, EMWD uses five methods to expand the use of recycled water within its service area. These methods are:

1. **Mandatory Recycled Water Use Ordinance** – EMWD has adopted an ordinance requiring new and existing customers to use recycled water for appropriate permitted uses when it is available. This ordinance provides a basis for denying potable water service and providing recycled water for permitted uses.
2. **Rate Incentives** – Recycled water is currently priced below the cost of potable water for both municipal and agricultural use.

3. **Water Supply Assessments** – EMWD’s Water Supply Assessments require all major new developments to use recycled water as a condition of service where it is available and permitted.
4. **Public Education** – EMWD actively promotes the use of recycled water with its water education program. EMWD also places prominent signage at public recycled water use sites promoting the benefits of water recycling.
5. **Facilities Financing** – EMWD will work with private parties to arrange or provide financing for construction of facilities needed to convert potable demands to recycled water.

EMWD does not have any data to support a projection of how much increased recycled water sales will result from each of the listed methods of encouraging recycled water use. Historically, the low cost of recycled water was the primary inducement for agricultural customers to use recycled water in-lieu of groundwater. However, as municipal customers continue to replace agriculture, it is reasonable to assume that the mandatory provisions of EMWD’s Recycled Water Use Ordinance will play a major role in program expansion.

**Table 6-11** summarizes EMWD’s methods to expand future retail recycled water use.

**Table 6-11. DWR 6-6R Methods to Expand Future Recycled Water Use**

NAME OF ACTION	DESCRIPTION	PLANNED IMPLEMENTATION YEAR	EXPECTED INCREASE OF RECYCLED WATER USE
Mandatory Recycled Water Use Ordinance	The ordinance requiring new and existing customers to use recycled water for appropriate permitted uses when it is available	Ongoing	
Rate Incentives	EMWD prices recycled water below the cost of potable water for both municipal and agricultural use	Ongoing	
Water Supply Assessments	Assessments condition all major new developments to use recycled water as a condition of service where it is available and permitted	Ongoing	
Public Education	EMWD has a recycled water public education campaign to promote the benefits of recycled water	Ongoing	
Facilities Financing	EMWD helps arrange or provide financing for the construction of facilities needed to convert potable demands to recycled water	Ongoing	
<b>TOTAL:</b>			

EMWD does not have data to support a projection of how much increased recycled water sales will result from each of the listed methods of encouraging recycled water use. Historically, the low cost of recycled water was the primary inducement for agricultural customers to use recycled water in-lieu of groundwater. However, as municipal customers continue to replace agriculture, it is reasonable to assume that the mandatory provisions of EMWD’s Recycled Water Use Ordinance will play a major role in program expansion.

## 6.2.6 Desalinated Water Opportunities

EMWD currently uses groundwater desalination to remove salts from basins in the West San Jacinto Basin. The 250 square mile area experiences increasing water levels due to the inward migration of high total dissolved solids (TDS) groundwater and decreased production. The high TDS groundwater is migrating into the Lakeview portion of the Lakeview/Hemet North Management Zone, which is an area of good quality groundwater. Lowering groundwater levels and removal of saline groundwater is an integral element of the WSJ Management Plan. To address these concerns, EMWD implemented a Groundwater Salinity Management Program. This program currently consists of two desalination facilities owned and operated by EMWD, with a third under construction. These facilities recover high TDS groundwater from the Menifee and Perris South Management Zones, and the Lakeview portion of the Lakeview/Hemet North Management Zone, for potable use. In addition to being a source of potable water, the main role of the desalters is to play a part in managing the groundwater management zones by addressing the migration of brackish groundwater into areas of good quality groundwater.

Desalter wells pump water to an integrated brackish water system that delivers water to the desalination plants where it is treated prior to entering the distribution system. The Menifee Desalter was the first desalter to be built. This facility began producing potable water in 2003. The second desalter, the Perris I Desalter, is located next to the Menifee Desalter in Sun City. This plant began production in 2006 and has a production capacity of approximately 7,500 AFY. Groundwater extraction for use in the desalter program has caused local declines in water levels to date; but the overall West San Jacinto Basin shows groundwater levels that continue to exhibit a stable or upward trend.

High iron and manganese concentrations along with silica irreversibly impact the desalter membranes and have resulted in several brackish groundwater extraction wells being offline. In 2004, an effort was initiated to evaluate alternative technologies for removal of iron and manganese prior to desalination. In late 2013, iron and manganese removal facilities were placed online and allowed EMWD to begin producing from four previously inactive wells.

## 6.2.7 Water Exchanges and Transfers

EMWD currently relies on Metropolitan for any transfers or exchanges. As a member agency, EMWD benefits from Metropolitan's efforts to improve supply reliability through transfers and exchanges, as detailed in Metropolitan's 2020 UWMP.

In addition to relying on Metropolitan, water transfers have been identified as a method of improving reliability, especially during periods of water shortage. The five regional water agencies in the Santa Ana River Watershed have identified a watershed scale project, the Santa Ana Conservation and Conjunctive Use Program (SARCCUP), to store imported water during wet years in order to help meet dry-year demands. The group includes representatives from the following regional water agencies:

- EMWD
- Inland Empire Utilities Agency
- Orange County Water District
- San Bernardino Valley Municipal Water District
- Western Municipal Water District

The program goals of SARCCUP include:

- Providing watershed wide benefits based upon regional collaboration
- Creating significant new dry year yield (about 70,000 AFY in Phase 1)
- Increasing resiliency and reliability of water supply

The SARCCUP includes four separate groundwater banks located in different groundwater basins within the Santa Ana Watershed. The total storage proposed for SARCCUP is about 137,000 AF. Each of the banks is expected to be able to recharge and extract one third of its storage capacity in any year. The combined extraction capacity is 45,667 AFY. Since the participants are sharing the benefits equally, each agency receives 25 percent (1/4) of the total capacity (IEUA does not currently have any storage capacity), resulting in each of the SARCCUP agencies receiving 11,417 AFY of new dry year yield. This may require transfers, in-lieu, or exchanges between the agencies in both wet and dry years. EMWD's SARCCUP facilities include recharge facilities, three production wells, eleven monitoring wells, and associated equipping and ancillary facilities.

In early 2016, SAWPA was formally notified that it had been awarded \$64,268,000 by DWR for its Proposition 84 2015 IRWM grant proposal, which included the SARCCUP. From the grant, SAWPA governance designated \$55 million for SARCCUP implementation. The SARCCUP Proposition 84 grant award includes the development of a Decision Support Model which was used to help refine the proposed facilities and identified additional facilities that could be included in future phases of the program. The total cost of Phase 1 of the SARCCUP program is approximately \$150 million.

Construction of the SARCCUP facilities is on-going and estimated to be complete by 2023. The SARCCUP agencies will continue work to finalize all of the individual agreements needed for operations of the facilities and water purchases. This includes an agreement between the SARCCUP agencies and Metropolitan to allow purchase of water made available under the program and special conditions associated with use of the water during droughts and emergencies. Metropolitan recently authorized agreements associated with SARCCUP to be executed. All agreements associated with SARCCUP have been or will be presented to EMWD's Board for approval prior to completion of the SARCCUP facilities.

### 6.2.8 Future Water Projects

EMWD is in the process of updating planning efforts for wastewater, water and recycled water supplies and facilities. EMWD's expected future water supply projects and programs that have a quantifiable increase in supply and are reasonably expected to be implemented over the next 25 years are summarized in **Table 6-12**.

**Table 6-12. DWR 6-7R Expected Future Water Supply Projects or Programs**

NAME OF FUTURE PROJECTS OR PROGRAMS	JOINT PROJECT WITH OTHER SUPPLIERS	AGENCY NAME	DESCRIPTION	PLANNED IMPLEMENTATION YEAR	PLANNED FOR USE IN YEAR TYPE	EXPECTED INCREASE IN WATER SUPPLY TO SUPPLIER
SARCCUP / San Jacinto Enhanced Recharge and Recovery Program (ERRP) Phase I	Yes	Inland Empire Utilities Agencies, Orange County Water District, San Bernardino Valley Municipal Water District, Western Municipal Water District, DWR	Project to be completed in phases and includes conjunctive use of groundwater recharge	2025	Multi-Dry Year	7,000 AFY
Perris North Basin Groundwater Contamination Prevention and Remediation Program	Yes	SWRCB (funding partner), WMWD	Combined MV and North Perris GW Development, and wells near MARB	2023	Average Year	6,450 AFY
Perris II Desalter	Yes	Army Corps of Engineers	Expected to be online mid-2021	2021	Average Year	5,400 AFY
Purified Water Replenishment, Phase I (IPR)	No	N/A	Advanced treated recycled water used to recharge the Hemet/San Jacinto Basin	2024	Average Year	4,000 AFY
Purified Water Replenishment, Phase II (IPR)	No	N/A	Advanced treated recycled water used to recharge the Hemet/San Jacinto Basin - could be increased to 11,000 AFY if brine issues are resolved	2035	Average Year	8,000 AFY
San Jacinto Enhanced Recharge and Recovery Program (ERRP) Phase II	No		Project to be completed in phases and includes conjunctive use of groundwater recharge	2030 - 2035	Multi-Dry Year	7,500 AFY
San Jacinto Enhanced Recharge and Recovery Program (ERRP) Phase III	No		Project to be completed in phases and includes conjunctive use of groundwater recharge	2040 - 2050	Multi-Dry Year	TBD

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

As described throughout this chapter, EMWD has developed a number of local supplies to offset imported water demand including recycled water, groundwater, and desalinated groundwater. EMWD's planned supply projects will increase supply reliability to mitigate against impacts to supply during dry and multi-dry years.

The following tables summarize EMWD's retail and wholesale current and projected supplies.

**Table 6-13. DWR 6-8R Actual Water Supplies**

WATER SUPPLY	ADDITIONAL DETAIL ON WATER SUPPLY	2020	
		ACTUAL VOLUME (AF)	WATER QUALITY
Purchased or Imported Water	Treated water purchased from Metropolitan	44,726	Drinking Water
Purchased or Imported Water	Untreated water purchased from Metropolitan, treated at EMWD Filtration Plants	17,584	Drinking Water
Purchased or Imported Water	EMWD share of unused Soboba Settlement Water	2,625	Drinking Water
Purchased or Imported Water	Raw Water for Agriculture	642	Other Non-Potable Water
Groundwater (not desalinated)	Potable water pumped from the Hemet/San Jacinto Basin portion of the San Jacinto Groundwater Basin (DWR 8-05)	9,383	Drinking Water
Groundwater (not desalinated)	Potable water pumped from the West San Jacinto Basin portion of the San Jacinto Groundwater Basin (DWR 8-05)	2,402	Drinking Water
Groundwater (not desalinated)	Brackish water pumped from the West San Jacinto Basin portion of the San Jacinto Groundwater Basin (DWR 8-05) used to supplement the recycled water system	0	Other Non-Potable Water
Desalinated Water - Groundwater	Desalinated water pumped from the West San Jacinto Basin portion of the San Jacinto Groundwater Basin (DWR 8-05)	7,310	Drinking Water
Recycled Water	Includes Storage Pond Incidental Recharge / Evaporation	39,642	Other Non-Potable Water
<b>TOTAL:</b>		<b>124,314</b>	

**Table 6-14. DWR 6-8W Actual Water Supplies**

WATER SUPPLY	ADDITIONAL DETAIL ON WATER SUPPLY	2020	
		ACTUAL VOLUME (AF)	WATER QUALITY
Purchased or Imported Water	Treated Water purchased from Metropolitan	15,008	Drinking Water
Purchased or Imported Water	Raw Water purchased from Metropolitan	14,909	Other Non-Potable Water
Purchased or Imported Water	Soboba Settlement Water	6,467	Other Non-Potable Water
Recycled Water		1,285	Recycled Water
<b>TOTAL:</b>		<b>37,669</b>	



**Table 6-15. DWR 6-9R Projected Water Supplies**

WATER SUPPLY	ADDITIONAL DETAIL ON WATER SUPPLY	PROJECTED WATER SUPPLY (AFY)				
		REASONABLY AVAILABLE VOLUME				
		2025	2030	2035	2040	2045
Purchased or Imported Water	Metropolitan Treated/ Untreated	66,447	72,147	70,247	74,747	78,847
Groundwater (not desalinated)	Pumped from the Hemet/San Jacinto Basin	7,303	7,303	7,303	7,303	7,303
Groundwater (not desalinated)	Pumped from the West San Jacinto Basin	11,450	11,450	11,450	11,450	11,450
Desalinated Water - Groundwater	Desalinated water from the West San Jacinto Basin	13,400	13,400	13,400	13,400	13,400
Recycled Water	Excludes Storage Pond Incidental Recharge / Evaporation	43,330	49,020	54,500	59,800	64,100
Other	Purified Water Replenishment (IPR)	4,000	4,000	12,000	12,000	12,000
<b>TOTAL:</b>		<b>145,930</b>	<b>157,320</b>	<b>168,900</b>	<b>178,700</b>	<b>187,100</b>

The projected recycled water supply total is inclusive of recycled water that is required to be recharged as part of EMWD’s planning Purified Water Replenishment (PWR) Program – an Indirect Potable Reuse project with multiple phases. This recharge volume is reported under the groundwater recharge line item in Table 6-7 (DWR 6-4R) as a demand/beneficial use of EMWD’s recycled water supply. The projected supply total under the “other” category reflects the volume of water produced by PWR that will be used to meet demands on EMWD’s potable water system.

**Table 6-16. DWR 6-9W Projected Water Supplies**

WATER SUPPLY	ADDITIONAL DETAIL ON WATER SUPPLY	PROJECTED WATER SUPPLY (AFY)				
		REASONABLY AVAILABLE VOLUME				
		2025	2030	2035	2040	2045
Purchased or Imported Water	Metropolitan Treated / Untreated	50,700	44,900	46,900	49,200	51,300
Purchased or Imported Water	Soboba Settlement Water	7,500	7,500	7,500	7,500	7,500
Recycled Water		4,770	5,180	5,600	5,600	5,600
<b>TOTAL:</b>		<b>62,970</b>	<b>57,580</b>	<b>60,000</b>	<b>62,300</b>	<b>64,400</b>

Soboba Settlement requires Metropolitan to provide a long term annual average recharge of 7,500 AFY - any portion unused by the Soboba Tribe is split for use by EMWD, LHMWD, City of Hemet, and the City of San Jacinto

### 6.2.10 Climate Change Effects

EMWD has considered the impact of climate change on water supplies as part of its long-term strategic planning. Climate change has the potential to affect not only local demand and supplies, but to reduce the amount of water available for import. Warmer temperatures will lead to higher demand for water within EMWD's service area and throughout California. An increase in intensity and frequency of extreme weather events can impact both local and imported supplies. EMWD gets approximately half of its retail supply from Metropolitan which imports water from the Bay-Delta system through the SWP and the Colorado River through the CRA. Potential impacts to these imported supplies are discussed in Metropolitan's UWMP.

In its climate change vulnerability assessment for the Santa Ana River Watershed, the SAWPA Region identified key supply vulnerabilities to climate change. The vulnerabilities identified in the assessment related to EMWD's supplies include:

- Reduction in the Sierra Nevada snowpack;
- Increased strain on imported supplies
- Inability to meet water demands during drought
- Shortage of long-term water storage

One of the outcomes of climate change could be more frequent limitations on imported supplies. To limit the impact of climate change, EMWD's long-term planning focuses on the development of reliable local resources and the implementation of water use efficiency. This includes the full utilization of recycled water, which is a highly resilient supply source, and the proactive management, monitoring, and recharge of local groundwater basins to ensure supply reliability even during potential periods of severe hydrologic conditions. EMWD is also focused on reducing demand for water supplies, especially outdoors. Increasing the use of local resources and reducing the need for imported water has the dual benefit of not only improving water supply reliability, but reducing the energy required to import water to EMWD's service area.

## 6.3 Energy Intensity

EMWD has calculated the energy intensity of its water management operations using the approach recommended by DWR. EMWD has self-regenerated renewable energy for both the potable and recycled water systems. This renewable energy is provided through solar generation and use of digester gas. The energy generated is used for the treatment processes and helps reduce the need for purchased power. The energy use for calendar year 2019 for the two systems are shown in **Table 6-17** and **Table 6-18**.

**Table 6-17. DWR Table O-1-1B Energy Intensity of Water Operations**

<b>Urban Water Supplier:</b> Eastern Municipal Water District <b>Water Delivery Product (If delivering more than one type of product use Table O-1C):</b> Other			
<b>TABLE O-1B: RECOMMENDED ENERGY REPORTING - TOTAL UTILITY APPROACH</b>			
Start Date for Reporting Period: 1/1/2019 End Date for Reporting Period: 12/31/2019	<b>URBAN WATER SUPPLIER OPERATIONAL CONTROL</b>		
Is upstream embedded in the values reported?	<b>SUM OF ALL WATER MANAGEMENT PROCESSES</b>	<b>NON-CONSEQUENTIAL HYDROPOWER</b>	
Water Volume Units Used	<b>TOTAL UTILITY</b>	<b>HYDROPOWER</b>	<b>NET UTILITY</b>
Volume of Water Entering Process (volume unit)	119205	0	119205
Energy Consumed (kWh)	53763864	0	53763864
<b>ENERGY INTENSITY (KWH/VOLUME)</b>	<b>451.0</b>	<b>0.0</b>	<b>451.0</b>
<b>QUANTITY OF SELF-GENERATED RENEWABLE ENERGY</b>			
0 kWh			
<b>DATA QUALITY (ESTIMATE, METERED DATA, COMBINATION OF ESTIMATES AND METERED DATA)</b>			
Combination of Estimates and Metered Data			
<b>DATA QUALITY NARRATIVE:</b>			
<b>NARRATIVE:</b>			

**Table 6-18. DWR Table O-2 Energy Intensity of Wastewater and Recycled Water Operations**

TABLE O-2: RECOMMENDED ENERGY REPORTING - WASTEWATER & RECYCLED WATER				
Start Date for Reporting Period: 1/1/2019 End Date for Reporting Period: 12/31/2019	<b>URBAN WATER SUPPLIER OPERATIONAL CONTROL WATER MANAGEMENT PROCESS</b>			
Is upstream embedded in the values reported? Volume of Water Units Used AF	<b>COLLECTION / CONVEYANCE</b>	<b>TREATMENT</b>	<b>DISCHARGE / DISTRIBUTION</b>	<b>TOTAL</b>
Volume of Wastewater Entering Process (volume units selected above)	48,415	48,415	6,120	48,415
Wastewater Energy Consumed (kWh)	17,014,851	54,199,173	0	71,214,024
<b>WASTEWATER ENERGY INTENSITY (KWH/VOLUME)</b>	<b>351.4</b>	<b>1,119.5</b>	<b>0.0</b>	<b>1,470.9</b>
Volume of Recycled Water Entering Process (AF)	0	0	42,300	42,300
Recycled Water Energy Consumed (kWh)	0	0	7,415,833	7,415,833
<b>RECYCLED WATER ENERGY INTENSITY (KWH/VOLUME)</b>	<b>0.0</b>	<b>0.0</b>	<b>175.3</b>	<b>175.3</b>
<b>QUANTITY OF SELF-GENERATED RENEWABLE ENERGY RELATED TO RECYCLED WATER AND WASTEWATER OPERATIONS</b>				
Wastewater system: 8,756,363 kWh of self-generated solar (included in use above)				
Recycled water system: 2,213,990 kWh of self-generated solar (included in use above)				
Wastewater system: 21,486,638 kWh of digester gas generation (included in use above)				
<b>DATA QUALITY (ESTIMATE, METERED DATA, COMBINATION OF ESTIMATES AND METERED DATA)</b>				
Combination of Estimates and Metered Data				
<b>DATA QUALITY NARRATIVE:</b>				
<b>NARRATIVE:</b>				



# 7 Water Service Reliability and Drought Risk Assessment

**This chapter presents a comparison of EMWD’s expected supplies and demands during future conditions**

Each of EMWD supply’s sources has potential constraints that could affect future reliability. This section describes these potential constraints. EMWD’s diverse supply portfolio is expected to allow it to maintain reliable water service for the next 25 years.

**IN THIS SECTION**

- Water Service Reliability Assessment
- Drought Risk Assessment

## 7.1 Water Service Reliability Assessment

This section presents an assessment of the expected reliability of EMWD's sources of supply.

### 7.1.1 Imported Water Reliability

Approximately half of EMWD's current and projected retail water supplies are imported through Metropolitan. EMWD also imports water from Metropolitan to augment the supplies of its wholesale customers. Metropolitan's resource management strategy depends on improving the reliability and availability of imported water supplies, increasing local storage and developing local resources. In Metropolitan's 2020 UWMP, it evaluated challenges to supply reliability, including drought conditions, environmental regulations, water quality concerns, infrastructure vulnerabilities to natural disaster, and responses to variations in water supply availability from year to year.

Flexible and adaptive regional planning strategies are required. Metropolitan's continued progress in developing a diverse resource portfolio will allow it to meet the region's water supply needs. Metropolitan's 2020 UWMP details its planning initiatives and based on these efforts concludes that with the storage and transfer programs developed, Metropolitan has sufficient supply capabilities to meet the expected demands of its member agencies from 2020 through 2045 under normal, historic single-dry and historic multiple-dry year conditions. EMWD is relying on Metropolitan's 2020 UWMP to evaluate the reliability of imported supplies and the amount of imported water which will be available in EMWD's service area during normal, single dry, and multiple dry water year periods.

In February 2008, Metropolitan adopted its Water Supply Allocation Plan (WSAP) to allocate water based on need during periods of mandatory imported water allocations throughout the region. The WSAP contains a specific formula and methodology to determine member agency supply allocations. Metropolitan works with member agencies to periodically review the WSAP formula and make adjustments as needed. The most recent revision to the WSAP was completed in December of 2014. The plan takes into consideration:

- The impact on retail customers and the economy
- Population and growth
- Changes and/or loss of local supply
- Reclamation and recycling
- Conservation
- Investment in local resources

In the event allocation is required, the WSAP establishes base period demands and then adjusts them for population growth and changes in local supply; it then calculates the water supply allocation for each member agency based on the calculated needs. Regional shortages are defined in 10 stages and credits are given for conservation and investment in local extraordinary supplies. These credits would potentially reduce a member agency's cutback under an allocation. EMWD currently expects that its contribution to SARCCUP would qualify for the extraordinary supply credit. It is Metropolitan's intent to prevent member agencies from experiencing retail shortages that are greater than corresponding regional shortages.

The probability of Metropolitan meeting dry year demands is dependent on the amount of water Metropolitan has in its reserves. Under some conditions, Metropolitan may choose to implement the WSAP proactively to preserve storage reserved for a future year. Accordingly, a Metropolitan allocation does not necessarily represent a Metropolitan shortage, and member agencies are not prohibiting from

making purchases over their allocated volume. However, any purchases made over the allocation would be subject to a surcharge.

### 7.1.2 Groundwater and Desalinated Groundwater Supply Reliability

Protecting the available groundwater supply is an integral component of EMWD's planning efforts. EMWD is actively working with other agencies and groups to ensure that groundwater will be a reliable resource far into the future. To improve groundwater reliability EMWD and other groundwater producers are reducing production of native groundwater and using imported water to supplement natural recharge.

EMWD and the other participants in the Hemet/San Jacinto area have agreed to reduce production. The long-term adjusted base production right for EMWD is 7,303 AFY.

Production over the base production right requires basin replenishment. There is a long-term agreement in place for Metropolitan to provide an average of 7,500 AFY for replenishment in the Hemet/San Jacinto Basin. This water is to be used by the Soboba Tribe with any unused water available to the other municipal producers in the Hemet/San Jacinto Basin, as described in Chapter 6. The municipal producers are allowed to carry over quantities of both unused replenishment water and adjusted base production rights to future years. EMWD has also purchased carry over credits from other municipal producers in the basin. At the end of 2020, EMWD's carry over credit balance in the Hemet/San Jacinto Basin was over 25,000 acre-feet.

EMWD has plans to expand recharge through the ERRP.

Potable groundwater production from the West San Jacinto Basin will increase once the Perris North Basin Groundwater Contamination Prevention and Remediation Program is completed, and brackish groundwater production will increase as EMWD's desalter program comes online in 2021.

Desalination of groundwater from the West San Jacinto Basin increases groundwater supply reliability in the San Jacinto Basin by helping manage increasing groundwater levels that are due to decreased production. Desalination also prevents migration of brackish groundwater that could otherwise contaminate potable groundwater supplies.

### 7.1.3 Recycled Water Supply Reliability

EMWD has established a strategic goal of maximizing beneficial reuse of recycled water and frequently reuses 100 percent of the wastewater generated in its service area as recycled water. Because recycled water supply is dependent on wastewater generation and not precipitation, it is considered a nearly 100 percent reliable, drought-resistant supply. EMWD also has optimization efforts underway to improve operation of the recycled water system.

### 7.1.4 Water Quality Constraints on Water Sources

Promoting and protecting the quality of its water resources is a vital part of EMWD's planning and operations. Water quality constraints for imported water and groundwater are part of the criteria used to evaluate the value of a proposed project. EMWD does not anticipate a reduction in supply reliability due to water quality constraints. Contaminants of concern may require treatment or blending, but long-term supply planning indicates that the quantity of available water will not be diminished from projected levels due to quality.



#### 7.1.4.1 Imported Water Quality

As part of the Metropolitan IRP and other planning efforts, Metropolitan has concentrated on maintaining the quality of source water and developing management programs that protect and enhance water quality. Metropolitan has two water sources: the CRA and the SWP. Metropolitan responds to water quality concerns by concentrating on protecting the quality of source water and developing water management programs that maintain and enhance water quality. Based on current knowledge, the only water quality threat to Metropolitan water supplies that may require future treatment is the potential for increased salinity levels.

To date, Metropolitan has not identified any other water quality issues that cannot be mitigated. Increased salinity may impact the amount of water available in the future. If additional treatment is required, Metropolitan could experience a loss of up to 15 percent of the water processed. Since only a small portion of the total water supply would be treated and blended with the remaining unprocessed water, there is no significant risk to Metropolitan's water supply availability.

Additional information and analysis of water quality is included in Metropolitan's 2020 UWMP.

#### 7.1.4.2 Groundwater and Desalinated Groundwater Quality

EMWD has an extensive and proactive groundwater monitoring program that includes collecting, compiling and analyzing data related to groundwater quality. There are no known significant threats to EMWD's groundwater supply that cannot be mitigated by treatment or blending and EMWD does not anticipate a significant loss of supply due to water quality issues. EMWD may occasionally alter operational patterns to support treatment or blending.

EMWD protects groundwater supplies from potential water quality risks including contamination from salinity, nitrates, and chlorinated and other volatile organic compounds. Other contaminants have also been found in local groundwater sources at levels exceeding PHGs and may require additional treatment in the future.

##### Salinity and Nitrates

In partnership with other agencies, EMWD is responsible for the protection and preservation of local groundwater under the authority of the HSJ Management Plan and the WSJ Management Plan. Salinity and nitrate levels in groundwater increase due to agricultural activities, urban use, and recycled water use. EMWD monitors the salinity and nitrate levels in local basins as part of the groundwater management plan. EMWD also evaluates the ambient water quality for the basins and the data indicates that the basins are slowly increasing in concentrations of salinity and nutrients. Typically, the groundwater water quality meets the safe drinking water standards for salinity and nutrients and can be used directly. Where the salt and nutrients exceed the drinking water standards, EMWD addresses water quality through the efforts of the desalination program. Two operational desalination plants and one planned plant are part of EMWD's effort to remove salts and nutrients from the brackish water supply. In addition to supplying a source of drinking water, desalination also prevents the migration of brackish groundwater into other management zones.

##### Chlorinated Solvents and Other Volatile Organic Compounds

In the WSJ Management Plan, chlorinated solvents and other volatile organic compounds have been found in amounts that exceed PHGs. Chlorinated solvents are volatile organic compounds (VOCs) that contain chlorine. In general, they are used in aerospace and electronics industries, dry-cleaning, and degreasing industries. EMWD is vigilant in protecting groundwater basins from VOC contamination by closely monitoring the construction of new businesses such as gas stations and manufacturing within the vicinity of production wells. Through the review of proposed new development, EMWD works with local land agencies to ensure that groundwater quality is protected.

### Arsenic

Arsenic is a naturally occurring compound found in rocks, soil, water and air. Arsenic has been found in several of EMWD's wells at levels that range from not detected to 12 µg/L (2015 data). In 2006, the MCL for arsenic in domestic water supplies was lowered to 10 µg/L by the USEPA. Currently, high arsenic concentration sources are blended with lower concentration sources to comply with the MCL. Should California lower the State's MCL below the federal level, some of EMWD's production wells could be impacted, requiring additional treatment facilities to utilize these wells.

### Pharmaceuticals and Personal Care Products

Pharmaceuticals and Personal Care Products (PPCPs) are constituents of emerging concern and EMWD has been and will continue to be proactive in addressing water quality concerns that arise. EMWD participates in the USEPA's Unregulated Contaminant Monitoring Rule program, which recently has included monitoring for PPCPs.

### Per- and Polyfluoroalkyl Substances

Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that includes PFOA, PFOS, GenX and many other chemicals. Historical activities at the former March Air Force Base have been identified as sources of PFOA and PFOS contamination in the groundwater. PFOA and PFOS have been detected at levels that exceed the current Division of Drinking Water notification levels in the Perris North and Perris South subbasins; however, groundwater extracted from these basins for drinking water that exceed the notification levels is treated to reduce PFOA and PFOS concentrations to below the notification levels. Should California lower notification levels, establish MCLs that are lower than current notification levels, or add notification levels/MCLs for additional PFAS compounds, some of EMWD's production wells could be impacted, requiring additional treatment facilities to utilize these wells.

## 7.1.4.3 Recycled Water Quality

EMWD has an extensive recycled water program and this supply is used for landscape, agricultural, and environmental uses. It significantly offsets non-potable water demands throughout the EMWD. Water quality issues with recycled water include high salinity, nutrients, and PPCPs.

### Salinity and Nutrient Management

One of the challenges with the use of the recycled water is that it has salinity and nutrient concentrations that exceed the Santa Ana Region's basin plan objectives. EMWD has a Salinity and Nutrient Management Program (SNMP) specifically designed to evaluate and address the salinity and nutrient impacts that may be associated with the use of recycled water. The SNMP determines whether or not the recycled water complies with the basin plan water quality objectives. In the basins where the recycled water does not meet the water quality objectives, the SNMP determines the excess loading to the basin and describes EMWD's offset mitigation measure to address the added salt and nutrient load. Because recycled water offers a great benefit to the region and reduces the demand on the potable water system for non-potable water purposes, the basin plan allows the excess salt and nutrient load to be mitigated. The SNMP describes the approved offset mitigation measures utilized by EMWD. This offset program ensures that for every excess pound of salt or nutrient added to the basin, a corresponding pound is removed by desalinization wells or mitigated by replenishment with higher quality water.

### Pharmaceuticals and Personal Care Products

PPCPs are a source of concern in EMWD's recycled water. In 2008, EMWD participated with SAWPA to form a Task Force to develop a plan to characterize emerging constituents (ECs) throughout the region. In 2009, the Task Force presented an acceptable monitoring plan to the Santa Ana Regional

Water Quality Control Board to monitor specific ECs. The plan included monitoring by SAWPA members to evaluate EC levels in wastewater effluent, local receiving streams and other raw water supplies imported into the area. Samples were collected in the spring of 2010 and a final report was prepared by SAWPA in late 2010. The results indicated the presence of some ECs at trace levels (parts per trillion) in the wastewater effluent that are consistent with the results from other wastewater agencies. EMWD tests for ECs in recycled water every three years, and monitors efforts towards the development of regulations.

### 7.1.5 Year Type Characterization

Since approximately half of EMWD’s service area supplies are imported from Metropolitan, EMWD’s normal, single-dry, and multi-dry year conditions are based on the same years used by Metropolitan in its 2020 UWMP. As described in Metropolitan’s UWMP, these years are based on hydrological conditions impacting SWP supplies. EMWD’s single-dry year condition is represented by 1977 hydrology and the multiple-dry year condition is represented by 1988-1992 hydrology. EMWD’s average year is represented by the average of the 1922-2017 hydrologic conditions.

The base years for EMWD’s retail and wholesale supplies are identified in Table 7-1 and Table 7-2.

**Table 7-1. DWR 7-1R Basis for Water Year Data (Reliability Assessment)**

YEAR TYPE	BASE YEAR	AVAILABLE SUPPLY IF YEAR TYPE REPEATS	
		VOLUME AVAILABLE	PERCENT OF AVERAGE SUPPLY
AVERAGE YEAR	1922 - 2017		100%
SINGLE-DRY YEAR	1977		100%
CONSECUTIVE DRY YEARS 1ST YEAR	1988		100%
CONSECUTIVE DRY YEARS 2ND YEAR	1989		100%
CONSECUTIVE DRY YEARS 3RD YEAR	1990		100%
CONSECUTIVE DRY YEARS 4TH YEAR	1991		100%
CONSECUTIVE DRY YEARS 5TH YEAR	1992		100%

Note: Because EMWD is able to purchase additional water from Metropolitan to meet demands, percent of supply is 100% or greater.

**Table 7-2. DWR 7-1W Basis for Water Year Data (Reliability Assessment)**

		AVAILABLE SUPPLY IF YEAR TYPE REPEATS	
YEAR TYPE	BASE YEAR	VOLUME AVAILABLE	PERCENT OF AVERAGE SUPPLY
AVERAGE YEAR	1922 - 2017		100%
SINGLE-DRY YEAR	1977		100%
CONSECUTIVE DRY YEARS 1ST YEAR	1988		100%
CONSECUTIVE DRY YEARS 2ND YEAR	1989		100%
CONSECUTIVE DRY YEARS 3RD YEAR	1990		100%
CONSECUTIVE DRY YEARS 4TH YEAR	1991		100%
CONSECUTIVE DRY YEARS 5TH YEAR	1992		100%

Note: Because EMWD is able to purchase additional water from Metropolitan to meet demands, percent of supply is 100% or greater.

### 7.1.6 Water Service Reliability

Based on the information provided in the Metropolitan UWMP, EMWD has the ability to meet current and projected water demands through 2045 during normal, historic single-dry and historic multiple-dry year periods using imported water from Metropolitan with existing supply resources. Planned local supplies will complement imported supplies and improve reliability for EMWD and the region.

EMWD will continue to rely on imported water from Metropolitan as the main source of supply for its retail and wholesale customers, yet recognizes the need to increase local supplies and water conservation to manage supply and demand. Metropolitan evaluated challenges to supply reliability in its UWMP, including drought conditions, environmental regulations, water quality concerns, and infrastructure vulnerability. Metropolitan has undertaken several planning initiatives to assess and prepare for vulnerabilities including its Integrated Resources Plan, its Water Surplus and Drought Management Plan, and its Water Supply Allocation Plan (WSAP). Additionally, Metropolitan has developed dry-year storage through groundwater and surface water reservoirs that help meet dry-year demands. Based on the information provided in Metropolitan’s UWMP, Metropolitan has sufficient supply capabilities to meet the expected demands of its member agencies from 2020 through 2045 under normal, historic single-dry and historic multiple-dry year conditions.

If another multiple-dry year period were to occur over the next five years, Metropolitan could declare an allocation. EMWD is able to respond to a potential allocation through implementation of its WSCP and its balance of carry over credits in the Hemet/San Jacinto Management Plan Area. EMWD has the ability to meet current and projected water demands through 2045 under normal, historic single-dry and historic multiple-dry year conditions using a combination of imported water from Metropolitan and existing local supply resources.

#### 7.1.6.1 Water Service Reliability – Normal Year

**Table 7-3** and **Table 7-4** demonstrate that EMWD will have sufficient supplies to meet both retail and wholesale demands from 2020 to 2045 under average year conditions.

**Table 7-3. DWR 7-2R Normal Year Supply and Demand Comparison**

-	2025	2030	2035	2040	2045
<b>Supply Totals</b> From Table 6-9R	145,930	157,320	168,900	178,700	187,100
<b>Demand Totals</b> From Table 4-3R	145,930	157,320	168,900	178,700	187,100
<b>DIFFERENCE:</b>	0	0	0	0	0

**Table 7-4. DWR 7-2W Normal Year Supply and Demand Comparison**

-	2025	2030	2035	2040	2045
<b>Supply Totals</b> From Table 6-9W	62,970	57,580	60,000	62,300	64,400
<b>Demand Totals</b> From Table 4-3W	62,970	57,580	60,000	62,300	64,400
<b>DIFFERENCE:</b>	0	0	0	0	0

### 7.1.6.2 Water Service Reliability – Single Dry Year

The single-dry year represents the year with the lowest water supply available to the agency. EMWD’s single-dry year is represented using 1977 hydrologic conditions. EMWD has developed programs to help accommodate increases in demand during dry years including the planned ERRP project which would allow EMWD to rely more heavily on groundwater supplies to meet demand in dry years. Additionally, EMWD could import more water from Metropolitan to meet increases in demand. **Table 7-5** and **Table 7-6** demonstrate that EMWD will have sufficient supplies to meet both retail and wholesale demands from 2020 to 2045 under single-dry year conditions.

**Table 7-5. DWR 7-3R Single Dry Year Supply and Demand Comparison**

-	2025	2030	2035	2040	2045
<b>Supply Totals</b>	151,130	162,820	174,700	184,700	193,300
<b>Demand Totals</b>	151,130	162,820	174,700	184,700	193,300
<b>DIFFERENCE:</b>	0	0	0	0	0

**Table 7-6. DWR 7-3W Single Dry Year Supply and Demand Comparison**

-	2025	2030	2035	2040	2045
<b>Supply Totals</b>	64,770	59,080	61,600	63,600	65,900
<b>Demand Totals</b>	64,770	59,080	61,600	63,600	65,900
<b>DIFFERENCE:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**7.1.6.3 Water Service Reliability – Five Consecutive Dry Years**

The multiple-dry year period represents the lowest average water supply availability to the agency for a consecutive five-year period. EMWD’s multiple-dry year period is represented using hydrologic conditions similar to the 1988-1992 period.

As demonstrated in **Table 7-7** and **Table 7-8**, EMWD will have sufficient supplies to meet both retail and wholesale demands from 2020 to 2045 under multiple-dry year conditions. During dry periods, EMWD would be able to utilize stored groundwater from the proposed ERRP project or import more water from Metropolitan to meet demands, if needed.

**Table 7-7. DWR 7-4R Multiple Dry Years Supply and Demand Comparison**

-	-	2025	2030	2035	2040	2045
First	Supply Totals	151,130	162,820	174,700	184,700	193,300
Year	Demand Totals	151,130	162,820	174,700	184,700	193,300
-	<b>DIFFERENCE:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Second	Supply Totals	132,700	143,300	153,700	162,500	170,300
Year	Demand Totals	132,700	143,300	153,700	162,500	170,300
-	<b>DIFFERENCE:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Third	Supply Totals	134,900	145,500	155,500	164,100	171,900
Year	Demand Totals	134,900	145,500	155,500	164,100	171,900
-	<b>DIFFERENCE:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Fourth	Supply Totals	137,100	147,600	157,400	165,700	173,500
Year	Demand Totals	137,100	147,600	157,400	165,700	173,500
-	<b>DIFFERENCE:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Fifth	Supply Totals	140,200	150,800	160,000	168,000	175,800
Year	Demand Totals	140,200	150,800	160,000	168,000	175,800
-	<b>DIFFERENCE:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>



**Table 7-8. DWR 7-4W Multiple Dry Years Supply and Demand Comparison**

-	-	2025	2030	2035	2040	2045
First	Supply Totals	64,770	59,080	61,600	63,600	65,900
Year	Demand Totals	64,770	59,080	61,600	63,600	65,900
-	<b>DIFFERENCE:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Second	Supply Totals	63,200	59,100	61,400	63,400	65,600
Year	Demand Totals	63,200	59,100	61,400	63,400	65,600
-	<b>DIFFERENCE:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Third	Supply Totals	62,100	59,600	61,800	63,900	66,000
Year	Demand Totals	62,100	59,600	61,800	63,900	66,000
-	<b>DIFFERENCE:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Fourth	Supply Totals	61,000	60,100	62,200	64,300	66,400
Year	Demand Totals	61,000	60,100	62,200	64,300	66,400
-	<b>DIFFERENCE:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Fifth	Supply Totals	59,800	60,600	62,600	64,700	66,900
Year	Demand Totals	59,800	60,600	62,600	64,700	66,900
-	<b>DIFFERENCE:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Note: Includes 7,500 AFY of Soboba Settlement Recharge.

## 7.2 Drought Risk Assessment

EMWD anticipates it will have enough supplies to meet demands under all water year conditions from 2020 through 2045. To supplement Metropolitan imported sources and improve reliability, EMWD has several local resource programs. Production of local groundwater has been a source of supply for EMWD's service area for decades, but overproduction of groundwater has led to a need for groundwater management. Native production is limited and plans are in place to recharge local ground water basins to increase supply reliability. Desalination of high TDS groundwater also provides a reliable local supply of water.

Recycled water production and sales reduce the demand for imported water and provide a sustainable supply. EMWD's continued investment in improved facilities will continue to grow the market for recycled water, and innovative planning and recycled water management will allow EMWD's recycled water supply to bring an even greater benefit to the service area.

EMWD also has several planned projects that will increase regional supply reliability by increasing local supplies and decreasing demands for imported water from Metropolitan. These projects include increasing local groundwater banking through the ERRP, expanding the desalter program with the Perris II Desalter, and full utilization of recycled water through implementation of IPR.

In addition to the development of local resources, EMWD aggressively promotes the efficient use of water. Through the implementation of local ordinances, conservation programs and an innovative tiered pricing structure, EMWD is reducing demands on retail accounts. Reducing demands allows existing and proposed water supplies to stretch farther and reduces the potential for water supply shortages.

The California Water Code requires suppliers to prepare a Five-Year Drought Risk Assessment (DRA) to assess their ability to meet demands if the next five years are dry.

The results of the DRA are summarized in **Table 7-9**.

**Table 7-9. DWR 7-5 Five-Year Drought Risk Assessment**

<b>2021</b>	Gross Water Use	177,900
	Total Supplies	177,900
	Surplus/Shortfall without WSCP Action	0
	<b>Planned WSCP Actions (Use Reduction and Supply Augmentation)</b>	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	0
	Revised Surplus/Shortfall	0
	Resulting Percent Use Reduction from WSCP Action	0%
	<b>2022</b>	Gross Water Use
Total Supplies		185,400
Surplus/Shortfall without WSCP Action		0
<b>Planned WSCP Actions (Use Reduction and Supply Augmentation)</b>		
WSCP (Supply Augmentation Benefit)		
WSCP (Use Reduction Savings Benefit)		14,900
Revised Surplus/Shortfall		0
Resulting Percent Use Reduction from WSCP Action		8%
<b>2023</b>		Gross Water Use
	Total Supplies	194,400
	Surplus/Shortfall without WSCP Action	0
	<b>Planned WSCP Actions (Use Reduction and Supply Augmentation)</b>	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	15,400
	Revised Surplus/Shortfall	0
	Resulting Percent Use Reduction from WSCP Action	8%
	<b>2024</b>	Gross Water Use
Total Supplies		209,400
Surplus/Shortfall without WSCP Action		0
<b>Planned WSCP Actions (Use Reduction and Supply Augmentation)</b>		
WSCP (Supply Augmentation Benefit)		0
WSCP (Use Reduction Savings Benefit)		16,000
Revised Surplus/Shortfall		0
Resulting Percent Use Reduction from WSCP Action		8%
<b>2025</b>		Gross Water Use
	Total Supplies	217,500
	Surplus/Shortfall without WSCP Action	0
	<b>Planned WSCP Actions (Use Reduction and Supply Augmentation)</b>	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	16,500
	Revised Surplus/Shortfall	0
	Resulting Percent Use Reduction from WSCP Action	8%

For each year: "revised surplus/shortfall" is still 0 AF because WSCP savings result in less purchases from Metropolitan.





**For the 2020 UWMP reporting cycle, EMWD prepared a Water Shortage Contingency Plan (WSCP). The WSCP is an appendix to this document and is being adopted separately by the EMWD Board of Directors.**

Adopting the UWMP as a separate document will allow EMWD to make adjustments as needed without triggering the need to amend and re-adopt the UWMP.

This chapter has been retained in the UWMP to maintain consistency with the chapter numbering defined in the DWR Guidebook.

**IN THIS SECTION**

- The WSCP is attached as Appendix I.

## 8.1 WSCP Overview

The WSCP includes a description of the shortage response actions that EMWD could implement to close a gap between supply and demand. It was developed and adopted as a separate document from the UWMP so that it can be modified if needed during the next five years.



## 9 Demand Management Measures

The CWC and UWMP Act require water agencies to describe the Demand Management Measures (DMMs) that an agency is implementing as part of its overall water conservation program. As both a retail and wholesale water agency, EMWD is responsible for fulfilling the requirements of both the retail and wholesale DMMs.

EMWD has established itself as a statewide leader in water use efficiency and continues to promote water conservation through investments in infrastructure, technology, education, and community outreach programs.

### IN THIS SECTION

- Programs to Encourage and Incentivize Efficient Water Use



In 2009, EMWD first implemented the use of water budgets for its residential customers. The tiered water rate structure was designed to promote water conservation by encouraging efficient water use and discouraging wasteful water usage. All residential customers received a monthly water budget allocation customized to meet their specific household and landscape irrigation needs. The rate structure set budgets for indoor usage and usage in excess of the total budget. In 2017, the Board adopted a new water rate structure, adjusted to meet new State standards that call for making water efficiency a permanent way of life. The changes maintained the principles behind EMWD's rate structure, reflecting the cost of service while rewarding customers who use less and penalize those who are wasteful.

In 2019, EMWD launched its WaterWise Plus program, a comprehensive and forward-thinking program designed to assist customers and partner agencies with finding new and cost-effective ways to become more water efficient. The program integrates existing water use efficiency-based programs with long-term solutions that are promoted regardless of drought conditions. These programs help customers make lifestyle changes to their water use habits resulting in becoming more efficient with their water use, gaining a better understanding of their water usage, and making them better able to manage their monthly bills.

EMWD offers a wide range of programs for residential customers, including participation in the Metropolitan Water District of Southern California (Metropolitan) turf removal rebate program, EMWD offered water efficient devices and EMWD's Demonstration Garden which is available for customers to view to obtain ideas on various water efficient and sustainable landscape options.

EMWD is also working with government agencies and the business community to develop long-term sustainable approaches to see the benefits that the average residential customers may realize. It is partnering with the cities it serves in introducing a landscape transformation program, promoting investments in climate appropriate landscaping in commercial, industrial, and instructional areas through turf replacement programs. EMWD is also partnering with its local agricultural customers to better understand current irrigation practices and to incorporate programs that will further assist local farmers in managing their water use.

EMWD is an industry leader in recycled water, one of the largest by volume recyclers in the nation and one of the few agencies that achieves 100 percent beneficial reuse in most years. Its recycled water system receives and treats more than 45 million gallons of wastewater each day at its four operating regional treatment plants. About 75 percent of recycled water production is sold to agricultural irrigation, landscaping, and industrial customers. It also serves several schools, parks, cities and county streetscaping, HOA landscape areas, golf courses, wetlands habitat areas and industrial cooling towers. EMWD has the ability to store more than two billion gallons of recycled water. With significant urban development, it is prepared to manage the increase in recycled water production and is securing the regions' water future through water banking and its groundwater reliability efforts.

## 9.1 Demand Management Measures for Wholesale Suppliers

As a wholesale agency, EMWD is responsible for implementing DMMs for wholesale suppliers, as well as assisting its wholesale customers with their own DMM implementation. EMWD works closely with its wholesale customers to help fund, market, and implement a number of conservation programs.

### 9.1.1 Metering

All of EMWD's wholesale customers are fully metered and billed volumetrically each month.

## 9.1.2 Public Education and Outreach

As a wholesale agency, EMWD maintains extensive Public Information and School Education Programs for all of its wholesale customers.

### Public Information Programs

As a wholesale agency, EMWD participates in a biennial landscaping competition with customers from EMWD, Western Municipal Water District (WMWD), and other water agencies throughout the Inland Empire as well as the respective sub agencies. EMWD initiated a long-term campaign to encourage all customers to use water wisely and offered materials with sub agencies. EMWD sponsors workshops and produces videos on California-friendly plants to promote landscaping using drought tolerant plants and the Water Waste Program to report/correct the wasteful use of water.

### School Education Programs

EMWD implements an Education Program to foster understanding of water and wastewater issues and to promote wise water use among the future leaders of the community. EMWD's extensive education program is designed to provide a useful academic experience at all grade levels (K-12). Any school within EMWD's service area is eligible to benefit from the program. EMWD offers resources such as lesson plans, curriculum packets, and student materials.

As a wholesale agency, EMWD has created the language arts program "Write Off" for middle school students and is the lead agency in partnership with Rancho California Water District (RCWD), a sub agency of EMWD. Multiple presentations, which include complete curriculum packets, have resulted from this program, and agencies throughout California and other states have either duplicated the program or have requested materials to add to their current education programs.

### 9.1.3 Water Conservation Program Coordination and Staffing

EMWD maintains full-time staffing for water conservation programs.

**EMWD's full time Conservation Staff include:**

- One Executive Assistant
- One Conservation Program Assistant
- One Conservation Program Specialist
- One Water Resources Planning Manager
- One Principal Water Resources Specialist
- Two Water Resources Specialist Assistants
- One Water Resources Specialist Associate

### 9.1.4 Other Demand Management Measures

EMWD's wholesale agencies' customers are eligible to participate in the region-wide rebate program offered through Metropolitan. EMWD has also worked with wholesale customers to implement agency administered programs funded in part by Metropolitan. EMWD provides support and information about water use efficiency to sub agencies and offers training opportunities in landscape efficiency.

EMWD has a volume-based rate structure for wholesale customers.

### 9.1.5 Asset Management

EMWD's wholesale distribution system asset management program is the same as its retail asset management program.

The mission of EMWD is to deliver value to customers and the communities within EMWD's service area by providing safe, reliable, economical, and environmentally sustainable water, wastewater, and recycled water services. One of the ways this mission is carried out is through the EMWD's Asset Management program. This program was established to effectively manage assets throughout their lifecycle. The underpinnings of this program are rooted in research of other water agencies that have implemented Asset Management Plans.

One of the key components of the program is EMWD's Computerized Maintenance Management System. This system is a transactional database system that is used to capture physical attributes as well as work activities performed on assets. Asset technicians manage the asset records during new construction, refurbishment, and replacements. Two of the initial attributes captured for asset records are installation date and original purchase price. In addition, other important data is collected such as horsepower, revolutions per minute (rpm), and power requirements. Asset grouping is employed to compare histories of like assets. Further analysis may provide insight on premature failures and lead to the procurement of better performing assets.

The lifecycles of assets are determined by a number of factors. Due to the nature of business at EMWD, assets may be found in office, potable water, wastewater, and recycled water operating environments. Wastewater produces the harshest operating conditions and, therefore, decreases the life of an asset more than other EMWD environments. Another factor that impacts the life of an asset is its expected life. Empirical data is the best indicator for predicting an asset's expected life. This takes into account the operating conditions of the asset at a particular location using real-world parameters. However, this method takes time to build history from maintenance activities. An alternative method entails using industry standards from similar operations. Combining these factors allows for the remaining life of assets to be calculated.

An Asset Management model was produced to provide a framework for business decisions related to the replacement and refurbishment (R&R) of EMWD's assets. The inputs to the model include the

physical location, remaining life expectancy, and the corrective maintenance costs. The health of an asset can be determined, in part, by the cost of maintenance relative to like assets. For example, if a potable pump historically costs more to maintain than another potable pump operating under similar conditions it should be further analyzed to understand the cause. Another input to the model includes EMWD's Capital Improvement Projects. By including Capital Improvement Project commitments into the model, assets that are likely candidates based on maintenance costs or end of life may be excluded from R&R consideration.

Output from the Asset Management model is provided to management for budget preparation. Assets may be grouped by site for a holistic review. Furthermore, the model allows for grouping of assets by maintenance responsibility whether electrical, mechanical, or other maintenance group. Management can easily review assets nearing end of life or with higher than usual maintenance costs. Assets are earmarked for budget inclusion or deferred to a future budget cycle. These decisions are recorded in the Asset Management model for future reference.

### 9.1.6 Wholesale Supplier Assistance Programs

#### **EMWD has implemented these programs:**

- Financial incentives provided for by Metropolitan for a variety of water efficient devices are administered through the SoCal WaterSmart regional rebate program for residential and commercial customers. Both residential and commercial customers of EMWD's sub agencies are eligible to participate in the regional rebate programs.
- EMWD has hosted and/or conducted workshops for landscape professionals, including personnel and customers of EMWD's sub agencies, providing certification opportunities for smart irrigation controller technologies. EMWD's Board members hold Director Advisory Committee meetings with stakeholders throughout the year; and staff members attend/participate at local city councils and planning commissions. EMWD also provides assistance to sub agencies with various Geographic Information System (GIS) mapping requests.
- EMWD is the first water agency in Riverside County to offer the Qualified Water Efficient Landscaper (QWEL) professional certification program which provides landscape professionals with 24 hours of education on principles of proper plant selection for the local climate, irrigation system design and maintenance, and irrigation system programming and operation. In order to obtain the QWEL certification an individual must demonstrate their ability to perform an irrigation system audit as well as pass the QWEL exam.
- Staff meets with sub agencies to discuss conservation related topics. Regional incentive programs are administered through vendors assigned by Metropolitan and sub agencies are encouraged to participate in these programs. Metropolitan hosts monthly water use efficiency meetings to discuss the implementation of conservation programs; EMWD's sub agencies are encouraged to participate.
- During a shortage, supply to wholesale customers could be allocated using the formula and methodology based on Metropolitan's Water Supply Allocation Plan (WSAP). This plan takes into consideration: the impact on retail customers and the economy; population and growth; changes and/or loss of local supply; reclamation and recycling; conservation; and investment in local resources.
- EMWD will establish base period demands and then adjust them for growth and changes in local supply. Regional shortages will be phased in 10 stages. At each stage the wholesale customers will not experience shortages on the wholesale level that are greater than one-and-a-half times the percentage shortage of regional water supplies; nor will they face a retail shortage less than the regional shortage. Credits will be given for conservation and investment in local supplies.

## 9.2 Existing Demand Management Measures for Retail

EMWD has implemented programs to meet the requirements for DMMs as a retail agency.

### 9.2.1 Water Waste Prevention Ordinances

**EMWD has implemented the following initiatives:**

- **Ordinance 72.25** – Water Use Efficiency Ordinance, implemented January 1991. EMWD reviews ordinances on a regular basis with the most recent revision effective February 2016. This ordinance prohibits water waste, imposes penalties for runoff, and requires efficient design in new development. The ordinance is enforced in two ways, (1) through EMWD’s allocation-based tiered rate structure for single family, multi-family and landscape accounts utilizing the domestic water system; and (2) through penalties for runoff.
- **Ordinance 117.2** – Water Shortage Contingency Plan, implemented July 2005. EMWD reviews the WSCP on a regular basis with the most recent modification adopted in 2017. This ordinance is designed for the purpose of protecting the integrity of water supply facilities (infrastructure), and implementing a contingency plan in times of drought, supply reductions, failure of water distribution systems or emergencies. The ordinance is included in Title 5, Article 10 of EMWD’s administrative code (amended by Resolution No 2017-152 on December 20, 2017).
- EMWD supports legislation and local ordinances that prohibit water waste, and supports local ordinances that establish requirements for water efficient design in new development. As a member of the Riverside County Water Task Force, EMWD participated in updating Riverside County’s Water Efficient Landscape Requirements Ordinance 859.
- In mid-2015, EMWD adopted new development standards to further promote conservation throughout its service area. Beginning in July 2015, all new developments are prohibited from having non-functional turf, including turf in the front yards of new homes. With more than 60 percent of water in EMWD’s service area being used outdoors, this was designed to be a long-term strategy to minimize the impact of new development. EMWD’s service area is currently 40 percent built out, making it one of the few regions in Southern California that will see significant population growth in the coming decades. EMWD also helped the County of Riverside adopt a similar ordinance prohibiting turf in the front yards of new homes in all unincorporated areas of Riverside County.
- EMWD has also prohibited the installation of non-functional turf in all new Commercial, Industrial, and Institutional (CII) developments. While turf is being allowed in functional areas of new development, including parks and schools, it is no longer permitted within common area landscaping that provides no functional community benefit. Non-functional turf can best be described as turf that is only ever walked on when it is being mowed.

### 9.2.2 Metering

A water meter is defined as a device that measures the actual volume of water delivered to an account in conformance with the guidelines of the American Water Works Association (AWWA).

**EMWD has implemented this DMM through the following programs:**

1. Meters are required on all new service connections
2. All service connections in EMWD’s service area are metered
3. Meters are read on a monthly basis and billed monthly in hundred cubic feet
4. EMWD’s program for meter testing and replacement is referenced in Table 9-1

5. EMWD has identified and measured all commercial customers with mixed use meters and completed creating water budgets for these customers in 2019
6. In an effort to reduce leaks, a continuous water use notification system was implemented in February 2016 which notifies customers of the presence of a constant water flow running through their meter (for every hour for several days), which is a strong indication of a possible leak
7. As part of the Water Loss Analysis that takes place every few years, EMWD now sends back approximately 30 small (5/8"-2") meters each month for random testing to ensure accuracy
8. To better serve its customers in a more accurate and efficient manner, EMWD upgraded its meters to Advanced Metering Infrastructure (AMI) technology and Flex Net meters.

**Table 9-1. Meter Testing and Replacement Frequency**

METER TYPE	METER SIZE	MONTHLY CONSUMPTION (HUNDRED CUBIC FEET)	METER TESTING FREQUENCY	METER REPLACEMENT FREQUENCY
Residential	5/8" – 2"	Not Applicable	Customer Request	Upon Failure
Commercial	3" and Larger	1,001 – Above	6 Months	Upon Failure
Commercial	3" and Larger	401 – 1,000	12 Months	Upon Failure
Commercial	3" and Larger	201 – 400	24 Months	Upon Failure
Commercial	3" and Larger	0 – 200	36 Months	Upon Failure
Sample	Not Applicable	Not Applicable	Bi-Annually	Upon Failure

1) Meter testing frequency based on age segment (1960's, 1961 – 1969, 1970 – 1979, etc.)

## 9.2.3 Conservation Pricing

### Retail Water Rates

Conservation pricing provides economic incentives (a price signal) to customers to use water efficiently. Because conservation pricing requires a volumetric rate, metered water service is a necessary condition of conservation pricing.

This DMM is intended to reinforce the need for water agencies to establish a strong nexus between volume-related systems costs and volumetric commodity rates. Conservation pricing requires volumetric rates. The goal of this DMM is to recover the maximum amount of water sales revenue from volumetric rates that is consistent with utility costs (which may include utility long-run marginal costs), financial stability, revenue sufficiency, and customer equity. In addition to volumetric rates, conservation pricing may also include service connection charges, meter service charges and/or special rates and charges for temporary service, fire protection service and other irregular services provided by the utility.

**The following volumetric rate designs are potentially consistent with the above definition:**

1. Uniform rate in which the volumetric rate is constant regardless of the quantity consumed
2. Seasonal rates in which the volumetric rate reflects seasonal variation in water delivery costs
3. Tiered rates in which the volumetric rate increases as the quantity used increases
4. Allocation-based rates in which the consumption tiers and respective volumetric rates are based on water use norms and water delivery costs established by the utility

In February 2009, EMWD implemented an allocation-based tiered rate structure for single family residential, multi-family residential and landscape accounts. The rate structure was instituted to promote the efficient use of water and is designed to provide customers a significant economic incentive to use the proper amount of water required to serve indoor and outdoor (landscape) demands. This is accomplished by setting a customized “allocation” for each customer account based on a variety of factors such as: irrigated area, daily weather characteristics, size of household, and other more unique characteristics such as the presence of a pool, livestock, or medical needs. Water is then sold to customers under a four-tier structure based upon their monthly allocation which varies for landscape use relating to daily weather patterns. Customers using water within their allocation purchase water in the lower two tiers. Customers using in excess of their allocation also purchase water in the remaining two tiers that generally will result in relatively high water bills which can send a strong price signal for excessive use. The tiered rate structure was also designed so that 70 percent of the rate is variable.

In January 2019, EMWD implemented water budgets and tiered rates for additional commercial, industrial, and institutional (CII) customers. The water budgets for these non-residential customers are based on industry-standard methodology, which considers factors such as business, historical average use, and amount of irrigated landscape. The structure for the CII customers includes a three-tier structure, in which Tier 1 represents the budgeted supply, and, similar to the residential and landscape structure, customers using water within their allocation purchase water in the lower tier. Customers using in excess of their allocation also purchase water in the remaining two tiers that generally will result in relatively high water bills which can send a strong price signal for excessive use.

### Retail Wastewater Rates

Conservation pricing of sewer service provides incentives to reduce average or peak use, or both. Such pricing includes: (a) rates designed to recover the cost of providing service, and (b) billing for sewer service based on metered water use.

#### **The following rate options are available for wastewater service:**

1. Uniform rates in which the unit rate is the same across all units of service
2. Increasing block rates in which the unit rate increases as the quantity of units purchased increases
3. Rates in which the unit rate is based upon the long-run marginal cost or the cost of adding the next unit of capacity to the sewer system
4. Rates that charge customers a fixed amount per billing cycle for sewer service regardless of the unit of service consumed; and/or rates in which the typical bill is determined by high fixed charges and low commodity charges do not satisfy the definition of conservation pricing of sewer services.

EMWD complies with an at least as effective approach for this DMM. EMWD and RCWD, its largest sub agency, both have allocation-based tiered rate billing structures. The allocation-based tiered rate billing structure sends a strong price signal against using excessive water both indoors and outdoors. EMWD also uses the household size provided water budgets to tier sewer pricing. Finally, EMWD recycles all of its wastewater and reuses it within the service area. These methods are at least as effective as a conserving rate structure for wastewater.



## 9.2.4 Public Education and Outreach

California water agencies have played a major role in promoting water use efficiency through both public information and school education programs. EMWD's Public Information and Education Programs for its retail service area are described below.

### Public Information Programs

Public information programs are an effective tool to educate customers about the need for water use efficiency and to influence customer behavior towards conservation. The following actions are necessary to implement a public information program to promote water conservation and related benefits:

- Public speakers to employees, community groups and the media
- Advertising using paid and public service
- Customer communication using bill inserts and on bill comparison charts for multi-year usage
- Coordination with government agencies, industry groups, public interest groups and media
- Marketing designed to change attitudes and influence behavior

### **EMWD has implemented this DMM in the following ways:**

1. EMWD provides public speakers at new employee orientation which is conducted twice each year; provides information to employees via intranet updates on a regular basis; and occasionally provides employees with fact sheets or talking points on industry issues that may be topics of discussion with individuals outside of EMWD. Public speakers are also provided to community groups, in a variety of settings such as rotary clubs, homeowners associations, religious organizations, and mobile home parks. EMWD's active speakers' bureau provides multiple presentations each month. EMWD maintains an active relationship with reporters by phone, email and direct contact regarding topical issues relating the need to encourage water use efficiency throughout its service area. EMWD utilizes a number of means for paid advertising such as various Chambers of Commerce programs and newsletters and a variety of community publications. Monthly cable slides are used for public service advertising. Customer communication includes bill inserts, bill messaging, monthly usage comparisons on the water bills, monthly emails, and bi-monthly newsletters.
2. EMWD provides public information to promote water conservation measures. In an effort to effect changes in attitude and influence behavior, EMWD has active pages on common social media sites that are updated regularly, and dedicated water use efficiency web pages that are updated on a regular basis. Addressing the subject of training stakeholders, EMWD has hosted and/or conducted workshops for landscape professionals, providing certification opportunities for smart irrigation controller technologies. EMWD's Board members hold Director Advisory Committee meetings with stakeholders throughout the year; and staff members attend/participate at local city councils, planning commissions, and chambers of commerce events. Ongoing outreach efforts targeting new residential customers consists of a welcome letter and bi-monthly newsletters containing seasonal tips and ideas for water use efficiency. EMWD enforces local and state landscape ordinances through the use of budget based tiered rates.
3. EMWD's Education Program uses a variety of grade-appropriate curriculum to educate area students about the importance of water use efficiency. Through its wide range of programs, EMWD reaches more than 60,000 students per year. The long-term objective of the program is to establish positive water use efficiency habits at a young age in order to have a future generation of ratepayers who understand the importance of using water efficiently. Among the programs offered are: school assembly programs, field trips, classroom and virtual presentations, annual "Write-Off"

contests where students write and illustrate a water-themed book, and participation in regional poster contests.

EMWD participates in Metropolitan’s regional rebate programs administered through SoCal Water\$mart for residential and commercial customers.

### School Education Programs

School education programs have been implemented to reach the youngest water users at an early age and reinforce the need to engage in water conservation as a life-long behavior. The following actions are necessary to implement school education programs to promote water conservation and related benefits:

1. Provide instructional assistance to school districts and private schools within the service area
2. Provide educational materials and classroom presentations that identify urban, agricultural and environmental issues and conditions in the local watershed
3. Develop and/or provide grade appropriate educational materials that meet the state education framework requirements

#### **EMWD has implemented this DMM in the following ways:**

1. EMWD has a very robust school education program that promotes water conservation and all aspects of environmental education. Additionally, EMWD works very closely with public and private schools within both its retail and wholesale service areas to provide educational materials which are in alignment with the California content standards for grades K-12.
2. EMWD provides classroom presentations covering water conservation, potable water treatment, desalination, wastewater treatment, purified water replenishment, and all aspects of environmental education. EMWD sponsors weekly field trips for students in eleven school districts throughout EMWD’s service area to tour one of EMWD’s wastewater treatment facilities and wetlands project and includes water education activities that are conducted in the education facility. EMWD provides materials developed by EMWD education staff and Metropolitan for K-12 students.

EMWD has also developed a variety of curriculum for K-5 students including:

- Wastewater Treatment for All Curious Beings – activity book
- Dewie the Dragon – curriculum packet
- Gobi’s Adventure – curriculum packet
- Otis the Turtle gets Water Wise – curriculum packet
- Lily and the Seven Drops – curriculum packet
- Bartholomew the Bird Investigates How to Use Water Wisely – curriculum packet and puppet show

The following contests are also promoted by EMWD on an annual basis:

- Grades K-5 Students – Poster contest “Water Use it Wisely”
- Grades 6-8 Students – Language Arts contest “Write-Off” (results in a published book, written and illustrated by 6-8 grade students)
- Grades 9-12 Students – Solar Cup event (MWD provides boat hull for students to assemble and EMWD provides financial support for students to outfit the boat with a motor and solar panels); and new video contest

EMWD participates in the following school and community activities:

- Environmental, science, health, and community fairs – provide activities and materials
- Annual environmental youth conference – provided in partnership with other agencies
- Sponsoring an environmental assembly program for schools in EMWD's service area

EMWD offers the following assistance for teachers in the service area:

- Training programs offered by EMWD and Metropolitan
- Training workshops offered by EMWD in partnership with other agencies to spotlight programs
- Training for Project WET offered

Conservation and Education have joined together to develop the Augmented Reality Sandbox Program (ARS) to help students learn about watersheds and topography by shaping and molding kinetic sand. Students will learn about the importance of watersheds, how we can protect them, and study elevation levels to create measurements. The ARS directly supports fourth and fifth grade common curriculum by concentrating on mathematics and science standards.

EMWD is one of Metropolitan's member agencies, as such Metropolitan has taken the lead as the wholesale agency in the Student Poster Contest Program and the Annual Solar Cup Event. Metropolitan has also provided curriculum for K-12 students.

### 9.2.5 Programs to Assess and Manage Distribution System Real

The goals of modern water loss control methods include both an increase in water use efficiency in the utility operations and proper economic valuation of water losses to support water loss control activities. In May 2009, the AWWA published the 3rd Edition M36 Manual "Water Audits and Loss Control Programs." This DMM incorporates these water loss management procedures and applies them in California. Agencies are expected to use the AWWA Free Water Audit Software to complete their standard water audit and water balance. For the 2020 UWMP, water agencies are required to calculate water loss using the AWWA software and report it with water use in Chapter 4.

**EMWD has implemented this DMM in the following ways:**

1. EMWD has compiled the standard water audit report for the past five years and included those results in Chapter 4.
2. The following methods are used to test source, import and production meters:
  - Source Meters:** Well meters are recalibrated or replaced annually. Filtration Plant and Desalter system supply meters are monitored against the raw water supply meters and calibrated annually.
  - Import Meters:** Metropolitan tests their connection meters bi-annually. EMWD's system meters are recalibrated annually and flows are monitored daily. Significant differences with Metropolitan deliveries are addressed jointly between EMWD and Metropolitan.
  - Production Meters:** Production meters are bench tested by a certified independent laboratory. Some large volume meters are calibrated twice a year.
3. EMWD has completed component analyses of real losses for fiscal years 2010 and 2014.
4. EMWD repairs reported leaks and breaks to the extent that are cost effective. A work order tracking system is used to track pipeline and service leaks by type and completed repairs.
5. In order to identify unreported leaks, EMWD monitors water use by customers and notifies them of anomalies that could indicate a possible leak.

## 9.2.6 Water Conservation Program Coordination and Staffing Support

EMWD has implemented this DMM.

### EMWD's full time Conservation Staff include

- One Executive Assistant
- One Conservation Program Assistant
- One Conservation Program Specialist
- One Water Resources Planning Manager
- One Principal Water Resources Specialist
- Two Water Resources Specialist Assistants
- One Water Resources Specialist Associate

The Principal Water Resources Specialist and Water Resources Planning Manager serve as liaisons between EMWD and other public agencies, community and industry groups, and the media; recommends, develops and coordinates implementation of EMWD conservation programs; and assists in analyzing program goals, performance measures, and sources of funding. The Water Resources Specialist Associate participates in the implementation of conservation programs; develops and implements programs to inform, educate and assist with efficient water use and conservation; represents EMWD with customers in community events and meetings regarding conservation issues; and develops and implements methods to measure improvements in water use efficiency and customer satisfaction. The Conservation Program Specialist assists in the development and implementation of conservation programs; conduct water leak investigations; issue citations to enforce mandatory water conservation ordinances during times of water shortage; and represent EMWD with customers and community events and meetings on conservation issues. The Conservation Program and Water Resources Specialist Assistants perform a variety of customer service functions related to water conservation; assists with residential, landscape and CII water surveys; measures landscape area for water budgets; sends water waste notices; research problems; and conducts related duties assigned. The Executive Assistant provides administrative support for the Conservation Program.

## 9.2.7 Other Demand Management Measures

EMWD has implemented the following additional DMMs.

### Residential Assistance Program

In 1997 EMWD's Conservation staff began performing residential surveys on a limited basis; during FY 2007/2008 and a portion of FY 2008/2009 these surveys were outsourced to a third party. In early 2009, the number of Conservation staff members increased, and in April 2009 the function of performing residential surveys was resumed by internal staff. With a dramatic increase in field and office work in August 2013, the residential surveys were outsourced to a new vendor "Water-Wise Consulting". In 2020 a new vendor was selected through a competitive process and awarded to "ConServe Inc. and to date the vendor continues to perform both residential and multi-family home surveys. Components of the indoor water survey include checking the water meter leak detector and testing the water meter for accuracy; testing flow rates for kitchen faucet, bathroom faucet(s) and showerhead(s) to determine gallons per minute (gpm); verify toilet(s) gallons per flush and perform a leak detection dye test on each toilet; verify use of dishwasher, hot water heater setting and clothes washer type. Upon completion of each survey, the customer is provided with a report that includes survey results and water efficient recommendations, along with information on incentives for eligible

water saving devices when available. Showerheads, aerators and toilet flappers are distributed with surveys as needed.

In addition to surveys EMWD provides leak detection assistance to customers through the distribution of conservation packets. On average, staff members also distribute more than 250 conservation packets to residential customers each month. These packets are available in both English and Spanish to accommodate the needs of a majority of EMWD's residential retail customers. Conservation packets provide the customer with information on how to read their water meter, leak detection dye tablets for toilets, and instructions on how to identify leaks in the home.

In January 2010, EMWD began to distribute Outdoor Water Use Efficiency Kits to residential customers. The Outdoor Water Use Efficiency Kit is designed to help residential customers create a custom irrigation schedule, repair a leaky hose and eliminate water running from an unattended hose. Since 1990, EMWD has maintained a program to provide residential customers with water efficient showerheads and faucet aerators. These devices continue to be distributed when needed and are made available to customers at EMWD's office, as part of the residential survey program and at various outreach events.

EMWD was awarded a grant for the Spray-to-Drip Retrofit Kit Program (Kit Program) from the United States Bureau of Reclamation (USBR) in March 2019. Through this grant, 1,110 Spray-to-Drip conversion kits are offered to residential customers free of charge. The kits contain enough equipment to convert between 250 and 400 square-feet of planter beds from spray to drip irrigation, depending on planting density. As of February 2020, all 1,110 Spray-to-Drip conversion kits required for grant compliance have been distributed and installation verified. EMWD will look for opportunities to expand this program in the future.

EMWD was awarded a grant for the Residential Irrigation Efficiency Project (Project) from the USBR in September 2019. Through this grant, 50 single family homes will have their existing irrigation systems replaced with high efficiency irrigation equipment and manage the watering schedules for a one-year period. The equipment installation and watering schedule management will be conducted by a qualified contractor. Staff will monitor water consumption via EMWD's automated meter infrastructure system, and the homeowners will agree to keep their irrigation system in good working order for the duration of the project. The Project offers cost share funding for water use efficiency activities that result in water savings, improved water management and energy efficiency.

### Landscape Water Survey

The landscape water survey requirement is being met through the implementation of tiered rates. A water budget for efficient landscape irrigation was developed for all residential customers. The water budget is enforced monthly through a tiered billing system. For those who exceed budget targets a residential survey may be performed to assist the customer in identifying where water can be saved. Staff members and/or the vendor perform on-site landscape surveys as part of the complete residential survey. Components of the outdoor water survey for single family residential accounts include checking the water meter leak detector and testing the water meter for accuracy; checking irrigation timer programming; running a one-minute test for each irrigation station to obtain gpm data and checking for system leaks; checking system pressure; obtaining plant and soil type(s) for reporting and measuring irrigated landscape area. Upon completion of each survey, the customer is provided with a report that includes survey results and a watering schedule, water efficient recommendations, and information on incentives for eligible water saving devices when available. EMWD has also developed a cost share program for the direct installation of residential smart irrigation controllers, high-efficiency precision nozzles, drip irrigation, and on-site landscape surveys as a component of this program.



### High Efficiency Clothes Washers

EMWD has provided incentives for HECWs since 2001. In late 2010, EMWD established partnerships with the United States Bureau of Reclamation (USBR) through grant funding, and Southern California Gas Company, for the direct installation of HECWs with a water factor of 4.0 or less.

### WaterSense Specification Toilets

EMWD began offering incentives for toilet retrofits in 1992, beginning with Ultra Low-Flush Toilets (ULFT). Incentives included customer rebates and free distribution events. Incentives for High Efficiency Toilets (HET) were added in 2005. HET incentive programs included customer rebates, free distribution events and a direct installation program which began in 2008. To continue to encourage the installation of water saving devices, the Replace and Save Multi-Family Toilet Program was implemented in 2014 and was targeted towards multi-family customers to help reduce or eliminate the cost associated with replacing older inefficient toilets with new efficient toilets.

### Commercial, Industrial, and Institutional

CII water demands make up a large percentage of total demand for California. CII water use varies dramatically between business sectors as well as within a given water agency's territory. The goal of this DMM is to implement comprehensive yet flexible measures, allowing each water agency to tailor the implementation of each practice to fit local needs and opportunities. The end result is a practice that is successful and will produce the greatest amount of cost-effective water savings.

EMWD continues to encourage efficiency by CII customers and in 2019 implemented budget-based tiered rates for these customers. Financial incentives provided for by Metropolitan for a variety of water efficient devices used in the CII sector are administered through the SoCal WaterSmart regional rebate program. In 2008, EMWD implemented the Public School Retrofit program; providing surveys and direct installation of both indoor and outdoor devices for more than 40 school sites within EMWD's retail service area. In 2009, conservation staff developed a program to identify CII accounts with mixed use meters, accounts with the highest water use are contacted first and offered CII water use surveys. Components of the CII water use survey include checking the water meter leak detector and testing the water meter for accuracy; checking irrigation timer programming; running a one-minute test for each irrigation station obtain gpm data and check for system leaks; checking system pressure; obtaining plant and soil type(s) for reporting and measuring irrigated landscape area. Upon completion of each survey, the customer is provided with a report that includes survey results and a watering schedule, water efficient recommendations, and information on incentives for eligible water saving devices when available.

### Landscape

Irrigation accounts for a large portion of urban water use in California. Irrigation water use varies dramatically depending on water pricing and availability, plant choice, geographic locations, seasonal conditions, and the level of commitment to sound water efficiency practices. The goal of this DMM is that irrigators, with assistance from signatories, will achieve a higher level of water use efficiency consistent with the actual irrigation needs of the plant materials. Reaching this goal would reduce overall demands for water, reduce demands during the peak summer months, and still result in a healthy and vibrant landscape in California.

#### **Accounts with Dedicated Irrigation Meters:**

- Through the tiered rate process, EMWD has developed water budgets for 100 percent of dedicated landscape accounts.

- Water bills for these accounts include data that reflect the relationship between the water budget 70 percent ETo and actual usage.
- Each water bill for dedicated landscape meters provides a contact number with an offer for assistance. An audit program and technical assistance are made available to customers that make a request.
- EMWD has offered financial incentive programs for landscape since 1992, including large landscape audits, soil moisture sensors, weather-based irrigation controller (WBIC) rebates and distribution, large rotary nozzle rebates, and rotating nozzle and synthetic turf rebates. In 2006, EMWD implemented a program to supplement the cost of high efficiency nozzles, including labor for installation, for large landscape accounts. In 2008, EMWD also implemented a public school retrofit program that includes the direct installation of WBICs and high efficiency nozzles. In 2012, EMWD implemented the Large Landscape Assistance Program which provides large landscape customers with the option to have Toro precision nozzles directly installed or receive a voucher for high efficiency nozzles and smart controllers.

#### **Commercial, Industrial, Institutional Accounts without Meters or with Mixed-Use Meters**

- EMWD’s retail service area includes an estimated 4,500 CII accounts.
- In July 2009, Conservation staff developed a program to identify CII accounts with mixed use meters and offer on-site surveys.
- EMWD has offered financial incentive programs for landscape since 1992, including large landscape audits, soil moisture sensors, WBIC rebate and distribution, large rotary nozzle rebates, rotating nozzle, and synthetic turf rebates.

## **9.3 Reporting Implementation**

### **9.3.1 Implementation Over the Past Five Years**

A summary of the extent to which these programs have been implemented is provided in **Table 9-2**.



Table 9-2. DMM Implementation

PROGRAM	TYPE	2016			2017			2018			2019			2020		
		DEVICES	COST	PARTICIPANTS	DEVICES	COST	PARTICIPANTS	DEVICES	COST	PARTICIPANTS	DEVICES	COST	PARTICIPANTS	DEVICES	COST	PARTICIPANTS
CI & Multi-Family Drip Rebate	Commercial	-	\$-	-	221,706	\$79,739	12	353,068	\$176,501	17	97,151	\$42,608	9	55,746	\$27,873	2
Drip Retrofit Kit Voucher Program	Residential	-	\$-	-	52	\$5,564	36	6	\$757	5	437	\$66,895	231	319	\$49,954	166
HECW Direct Install	Residential	161	\$10,465	161	845	\$54,015	831	332	\$21,450	330	173	\$11,245	173	232	\$14,885	228
Large Landscape Controller Voucher Program	Commercial	1	\$3,567	4	19	\$8,969	17	3	\$2,361	2	5	\$32,184	2	7	\$24,652	4
Large Landscape Nozzle Voucher Program	Commercial	3,994	\$20,138	11	-	\$-	-	-	\$-	-	-	\$-	-	-	\$-	-
Regional Rebates: Cistern	Residential	3	\$950	3	-	\$-	-	-	\$-	-	-	\$-	-	-	\$-	-
Regional Rebates: HECW	Residential	985	\$102,105	986	326	\$45,000	326	225	\$33,685	225	150	\$22,060	148	261	\$39,150	261
Regional Rebates: HET	Residential	233	\$19,153	133	35	\$1,400	19	37	\$1,480	18	27	\$1,475	19	579	\$23,160	9
Regional Rebates: HET	Commercial	2	\$196	1	-	\$-	-	-	\$-	-	-	\$-	-	-	\$-	-
Regional Rebates: Ice-Making Machine	Commercial	-	\$-	-	-	\$-	-	1	\$1,000	1	-	\$-	-	-	\$-	-
Regional Rebates: NOZZLES	Residential	392	\$1,110	10	291	\$580	6	235	\$470	5	144	\$288	3	95	\$190	3
Regional Rebates: NOZZLES	Commercial	-	\$-	-	-	\$-	-	-	\$-	-	-	\$-	-	-	\$-	-
Regional Rebates: RAIN BARREL	Residential	205	\$15,413	82	19	\$665	11	6	\$210	4	6	\$210	4	8	\$280	5
Regional Rebates: Soil Moisture Sensor System	Residential	-	\$-	-	-	\$-	-	1	\$145	1	-	\$-	-	-	\$-	-
Regional Rebates: Soil Moisture Sensor System	Commercial	-	\$-	-	-	\$-	-	-	\$-	-	-	\$-	-	-	\$-	-
Regional Rebates: Synthetic Turf	Residential	-	\$-	-	-	\$-	-	-	\$-	-	-	\$-	-	-	\$-	-
Regional Rebates: Urinal	Commercial	-	\$-	-	-	\$-	-	-	\$-	-	-	\$-	-	-	\$-	-
Regional Rebates: WBIC	Residential	146	\$25,813	141	164	\$21,921	159	326	\$39,581	315	280	\$30,060	273	361	\$35,636	349
Regional Rebates: WBIC	Commercial	59	\$95,239	20	12	\$27,624	4	36	\$80,987	13	9	\$16,256	8	1	\$1,680	1
Residential Water Survey	Residential	113	\$14,125	113	94	\$11,750	94	473	\$59,125	473	252	\$31,500	252	77	\$9,625	77
Smart Controller Direct Install Program (Residential)	Residential	53	\$6,669	48	2	\$150	2	7	\$675	9	2	\$225	3	9	\$2575	8
Toro Direct Install Program (Commercial)	Commercial	3,417	\$10,319	6	-	\$-	-	-	\$-	-	-	\$-	-	-	\$-	-
Toro Nozzle Direct Install Program (Residential)	Residential	1,194	\$7,304	23	-	\$-	-	-	\$-	-	-	\$-	-	-	\$-	-
Turf Buy Back Program	Residential	696,153	\$264,162	463	30,041	\$58,468	19	9,789	\$10,416	11	51,247	\$95,358	46	76,076	\$169,931	58
Turf Buy Back Program	Commercial	1,946,465	\$3,219,438	58	1,023,072	\$1,752,401	53	342,580	\$1,113,855	10	333,457	\$476,040	13	409,230	\$855,944	12

### 9.3.2 Implementation Achieve Water Use Targets

EMWD estimates water saving have occurred due to ordinances in place, the implementation of tiered rates and active conservation. EMWD will continue to improve water efficiency through a budget based tiered rate, requirements for water efficiency in new construction and an active conservation program. Water use reduction will be focused on outdoor demand reduction by all customer types. Even after surpassing its water efficiency target for 2020, EMWD estimates that there is the potential for additional conservation savings through 2045.

EMWD will continue to reduce potable water demand in two ways: using recycled water to offset potable water demand and reducing demand for water through conservation. In December 2015, EMWD completed a Water Use Efficiency Master Plan which articulates the goals, strategies, and tactics required to deliver long-term solutions for secure and reliable water supplies. The Water Use Efficiency Master Plan helped to identify and update the targets for saving water through active conservation and provided a portfolio of projects and actions to meet the requirements of SB X7-7. EMWD anticipates continuing these programs to meet the requirements of future water use standards.

## 9.4 Water Use Objectives (Future Requirements)

EMWD's final water use objectives have not yet been determined.





**This chapter describes the processes for adoption of this UWMP and WSCP, submittal of required information to DWR and other entities, and EMWD’s implementation of the plan.**

EMWD has coordinated with cities and counties within its service area to solicit input and feedback during preparation of this UWMP.

**IN THIS SECTION**

- Public Hearing Notices
- Adoption by EMWD Board of Directors
- Future Amendments

## 10.1 Inclusion of All 2020 Data

This UWMP and WSCP have been prepared on a calendar year basis and include data through the end of December 2020.

## 10.2 Notice of Public Hearing

EMWD encouraged public participation during the development of this UWMP and WSCP and provided opportunities for public review and comment. First, EMWD sent out notices via electronic mail on January 19, 2021 to cities within its retail and wholesale service area and the County of Riverside to inform these stakeholders that the UWMP was being reviewed, modified, and prepared in advance of the 60-day period leading up to the public hearing. Additional notices went out to these agencies announcing when the draft UWMP and WSCP would be available for public review and announcing the time and date of the public hearing. The agencies receiving these notices are shown in Table 10-1 and Table 10-2.

Notices of the public hearing were also published in the local newspaper and placed at the EMWD office. The notice included the time and date of the hearing and stated that the draft UWMP and WSCP were available for public review and comment until June 30, 2021 at the EMWD office or on EMWD's website. A copy of the public notice is provided in **Appendix J**.

EMWD conducted the public hearing on June 30, 2021 at the EMWD office to hear and discuss public comments on the draft UWMP and WSCP prior to EMWD Board adoption. No written comments were received on the draft documents.

### 10.2.1 Notice to Cities and Counties

Notices were provided to the cities and counties within the service area. Notice was provided more than 60 days before the public hearing, and subsequent notice was provided with information about the date and time of the public hearing.

#### 10.2.1.1 60 Day Notification

EMWD provided notices to the agencies shown in **Table 10-1** and **Table 10-2** that this UWMP and WSCP was being updated and asking for input.

#### 10.2.1.2 Notice of Public Hearing

EMWD provided notices to the agencies shown in **Table 10-1** and **Table 10-2** that a public hearing had been scheduled to review and consider adoption of the UWMP and WSCP.

**Table 10-1. DWR 10-1R Notification to Cities and Counties**

<b>CITY</b>	<b>60 DAY NOTICE</b>	<b>NOTICE OF PUBLIC HEARING</b>
City of Beaumont	Yes	Yes
City of Canyon Lake	Yes	Yes
City of Menifee	Yes	Yes
City of Moreno Valley	Yes	Yes
City of Murrieta	Yes	Yes
City of Riverside	Yes	Yes
City of Temecula	Yes	Yes
Pechanga Band of Luiseño Indians	Yes	Yes
Soboba Band of Luiseño Indians	Yes	Yes
<b>COUNTY</b>	<b>60 DAY NOTICE</b>	<b>NOTICE OF PUBLIC HEARING</b>
Riverside County	Yes	Yes

**Table 10-2. DWR 10-1W Notification to Cities and Counties**

<b>CITY</b>	<b>60 DAY NOTICE</b>	<b>NOTICE OF PUBLIC HEARING</b>
City of Perris	Yes	Yes
City of Hemet	Yes	Yes
City of San Jacinto	Yes	Yes
<b>COUNTY</b>	<b>60 DAY NOTICE</b>	<b>NOTICE OF PUBLIC HEARING</b>
Riverside County	Yes	Yes
<b>OTHER</b>	<b>60 DAY NOTICE</b>	<b>NOTICE OF PUBLIC HEARING</b>
Lake Hemet Municipal Water District	Yes	Yes
Nuevo Water Company	Yes	Yes
Rancho California Water District	Yes	Yes
Western Municipal Water District	Yes	Yes
Elsinore Valley Municipal Water District	Yes	Yes
Metropolitan Water District of Southern California	Yes	Yes
Fallbrook Public Utility District	Yes	Yes
Rainbow Municipal Water District	Yes	Yes

## 10.2.2 Notice to the Public

EMWD provided notice to the public through its web site that the UWMP and WSCP were being updated. Notice of the public hearing was published twice in the local newspaper in accordance with Section 6066 of the Government Code. Copies of these notices are included in **Appendix J**.

## 10.3 Public Hearing and Adoption

EMWD's Board of Directors held a public hearing to consider adoption of this UWMP and WSCP. The documents were adopted by the Board after the hearing.

### 10.3.1 Public Hearing

EMWD held a public hearing on June 30, 2021 at 8:00 a.m. The meeting was held at EMWD's headquarters, with an option to join virtually through an online collaboration platform. EMWD staff made a brief presentation of the contents of the UWMP and WSCP, and the public was given the opportunity to provide comments.

### 10.3.2 Adoption

The UWMP and WSCP were adopted by the EMWD Board of Directors on June 30, 2021 after the public hearing. Copies of the resolutions are provided in **Appendix K**.

## 10.4 Plan Submittal

EMWD plans to implement the adopted UWMP in accordance with the schedule described in the plan. Any amendments made to this UWMP will require completion of the same series of notification, public hearing, adoption, and submittals as required in submittal of this UWMP.

### 10.4.1 Submittal of the UWMP and Water Shortage Contingency Plan to DWR

The UWMP and WSCP will be submitted to DWR electronically on or prior to the CWC's deadline of July 1, 2021.

### 10.4.2 Electronic Data Submittal

The standardized UWMP data tables will be uploaded to the WUData portal electronically on or prior to the CWC's deadline of July 1, 2021.

### 10.4.3 Submittal of the UWMP to the California State Library

No later than 30 days after adoption, EMWD will submit a copy of the UWMP and WSCP to the California State Library.

### 10.4.4 Submittal of the UWMP to Cities and Counties

The UWMP will be made available to Riverside County and the cities within EMWD's service area. Email notifications were sent to these entities to make them aware that the plan was available.

## 10.5 Public Availability

A hard copy of the UWMP and WSCP will be made publicly available at the EMWD office, and an electronic copy of the UWMP and WSCP will be available for public viewing on the EMWD website.



## 10.6 Notification to Public Utilities Commission

EMWD is not regulated by the California Public Utilities Commission (CPUC) and is therefore not required to notify the CPUC that this report has been updated.

## 10.7 Amending an Adopted UWMP or Water Shortage Contingency Plan

If EMWD elects to make changes to the UWMP or WSCP, the required processes will be followed for notification and adoption.

### 10.7.1 Amending a UWMP

Amending this UWMP will require the same steps for notification, public hearing, adoption, and submittal as the original 2020 plan.

### 10.7.2 Amending a Water Shortage Contingency Plan

Amending the WSCP included in this UWMP will require the same steps for notification, public hearing, adoption, and submittal as the original 2020 plan.



# A

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## Appendix A: DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and Overview	Section 1.1
x	x	Chapter 1	10630.5	Each plan shall include a simple description of the supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a supplier may also choose to include a simple description at the beginning of each chapter.	Summary	Lay Description
x	x	Section 2.2	10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1
x	x	Section 2.6	10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.3
x	x	Section 2.6.2	10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.	Plan Preparation	Section 2.3
x		Section 2.6, Section 6.1	10631(h)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) - if any - with water use projections from that source.	System Supplies	Section 2.3.1
	x	Section 2.6	10631(h)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.3.1
x	x	Section 3.1	10631(a)	Describe the water supplier service area.	System Description	Section 3.1
x	x	Section 3.3	10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3
x	x	Section 3.4	10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	System Description	Section 3.4.1
x	x	Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the supplier's water management planning.	System Description	Section 3.4.2
x	x	Sections 3.4 and 5.4	10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Section 3.4.1
x	x	Section 3.5	10631(a)	Describe the land uses within the service area.	System Description	Section 3.5
x	x	Section 4.2	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.1
x	x	Section 4.2.4	10631(d)(3)(C)	Retail suppliers shall provide data to show the distribution loss standards were met.	System Water Use	Section 4.2
x	x	Section 4.2.6	10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans and other policies or laws.	System Water Use	Section 4.1.1
x	x	Section 4.2.6	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System Water Use	Section 4.1.1
x	optional	Section 4.3.2.4	10631(d)(3)(A)	Report the distribution system water loss for each of the 5 years preceding the plan update.	System Water Use	Section 4.2
x	optional	Section 4.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.3
x	x	Section 4.5	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System Water Use	Section 4.4
x		Chapter 5	10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Section 5.1
x		Chapter 5	10608.24(a)	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	Section 5.3
	x	Section 5.1	10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5
x		Section 5.2	10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.3.1
x		Section 5.5	10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.1
x		Section 5.5 and Appendix E	10608.4	Retail suppliers shall report on their compliance in meeting their water use targets. The data shall be reported using a standardized form in the SBX7-7 2020 Compliance Form.	Baselines and Targets	Section 5.1
x	x	Sections 6.1 and 6.2	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought.	System Supplies	Section 7.1
x	x	Sections 6.1	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, <i>including changes in supply due to climate change.</i>	System Supplies	Section 7.1
x	x	Section 6.1	10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System Supplies	Section 6.1

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 6.1.1	10631(b)(3)	Describe measures taken to acquire and develop planned sources of water.	System Supplies	Section 6.2.8
x	x	Section 6.2.8	10631(b)	Identify and quantify the existing and planned sources of water available for 2020, 2025, 2030, 2035, 2040 and optionally 2045.	System Supplies	Section 6.2.9
x	x	Section 6.2	10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2.2
x	x	Section 6.2.2	10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2
x	x	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System Supplies	Section 6.2.2
x	x	Section 6.2.2	10631(b)(4)(B)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2
x	x	Section 6.2.2.1	10631(b)(4)(B)	For unadjudicated basins, indicate whether or not the department has identified the basin as a high or medium priority. Describe efforts by the supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	System Supplies	Section 6.2.2
x	x	Section 6.2.2.4	10631(b)(4)(C)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 6.2.2
x	x	Section 6.2.2	10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Section 6.2.9
x	x	Section 6.2.7	10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.2.7
x	x	Section 6.2.5	10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.2.5
x	x	Section 6.2.5	10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.2.5
x	x	Section 6.2.5	10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.2.5
x	x	Section 6.2.5	10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.2.5
x	x	Section 6.2.5	10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.2.5
x	x	Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.2.5
x	x	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.2.6
x	x	Section 6.2.5	10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area with quantified amount of collection and treatment and the disposal methods.	System Supplies (Recycled Water)	Section 6.2.5
x	x	Section 6.2.8, Section 6.3.7	10631(f)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and for a period of drought lasting 5 consecutive water years.	System Supplies	Section 6.2.8
x	x	Section 6.4 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a supplier can readily obtain.	System Supplies, Energy Intensity	Section 6.3
x	x	Section 7.2	10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1.4
x	x	Section 7.2.4	10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.1
x	x	Section 7.3	10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.1
x	x	Section 7.3	10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Water Supply Reliability Assessment	Section 7.2
x	x	Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts 5 consecutive years.	Water Supply Reliability Assessment	Section 7.2
x	x	Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water Supply Reliability Assessment	Section 7.1
x	x	Section 7.3	10635(b)(3)	Include a comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.	Water Supply Reliability Assessment	Section 7.2

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water Supply Reliability Assessment	Section 7.2
x	x	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	WSCP
x	x	Chapter 8	10632(a)(1)	Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP	Water Shortage Contingency Planning	WSCP, Section 1
x	x	Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the water shortage contingency plan to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water Shortage Contingency Planning	WSCP, Section 2
x	x	Section 8.2	10632(a)(2)(A)	Provide the written decision-making process and other methods that the supplier will use each year to determine its water reliability.	Water Shortage Contingency Planning	WSCP, Section 2
x	x	Section 8.2	10632(a)(2)(B)	Provide data and methodology to evaluate the supplier's water reliability for the current year and one dry year pursuant to factors in the code.	Water Shortage Contingency Planning	WSCP, Section 2
x	x	Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10, 20, 30, 40, 50 percent shortage and greater than 50 percent shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water Shortage Contingency Planning	WSCP, Section 3
x	x	Section 8.3	10632(a)(3)(B)	Suppliers with an existing water shortage contingency plan that uses different water shortage levels must cross reference their categories with the six standard categories.	Water Shortage Contingency Planning	WSCP, Section 3
x	x	Section 8.4	10632(a)(4)(A)	Suppliers with water shortage contingency plans that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water Shortage Contingency Planning	WSCP, Section 4
x	x	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	WSCP, Section 4
x	x	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	WSCP, Section 4
x	x	Section 8.4	10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions are appropriate to local conditions.	Water Shortage Contingency Planning	WSCP, Section 4
x	x	Section 8.4	10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water Shortage Contingency Planning	WSCP, Section 4
x	x	Section 8.4.6	10632.5	The plan shall include a seismic risk assessment and mitigation plan.	Water Shortage Contingency Plan	WSCP, Section 4.6
x	x	Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water Shortage Contingency Planning	WSCP, Section 5
x	x	Section 8.5 and 8.6	10632(a)(5)(B) 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water Shortage Contingency Planning	WSCP, Section 5
x		Section 8.6	10632(a)(6)	Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water Shortage Contingency Planning	WSCP, Section 6
x		Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the supplier to enforce shortage response actions.	Water Shortage Contingency Planning	WSCP, Section 7
x	x	Section 8.7	10632(a)(7)(B)	Provide a statement that the supplier will declare a water shortage emergency Water Code Chapter 3.	Water Shortage Contingency Planning	WSCP, Section 7
x	x	Section 8.7	10632(a)(7)(C)	Provide a statement that the supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.	Water Shortage Contingency Planning	WSCP, Section 7
x	x	Section 8.8	10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	WSCP, Section 8
x	x	Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	WSCP, Section 8
x		Section 8.8	10632(a)(8)(C)	Retail suppliers must describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought	Water Shortage Contingency Planning	WSCP, Section 8
x		Section 8.9	10632(a)(9)	Retail suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water Shortage Contingency Planning	WSCP, Section 8
x		Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Water Shortage Contingency Planning	WSCP, Section 11
x	x	Sections 8.12 and 10.4	10635(c)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 30 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	WSCP, Section 12
x	x	Section 8.12	10632(c)	Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 after adopted the plan.	Water Shortage Contingency Planning	WSCP, Section 12

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
	x	Sections 9.1 and 9.3	10631(e)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Section 9.1
x		Sections 9.2 and 9.3	10631(e)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Section 9.2 and 9.3
x		Chapter 10	10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Plan Adoption, Submittal, and Implementation	Section 10.3
x	x	Section 10.2.1	10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Reported in Table 10-1.	Plan Adoption, Submittal, and Implementation	Section 10.2
x	x	Section 10.4	10621(f)	Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.	Plan Adoption, Submittal, and Implementation	Section 10.3
x	x	Sections 10.2.2, 10.3, and 10.5	10642	Provide supporting documentation that the urban water supplier made the plan and contingency plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan and contingency plan.	Plan Adoption, Submittal, and Implementation	Section 10.2
x	x	Section 10.2.2	10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Section 10.2
x	x	Section 10.3.2	10642	Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3
x	x	Section 10.4	10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4
x	x	Section 10.4	10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4
x	x	Sections 10.4.1 and 10.4.2	10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Section 10.4
x	x	Section 10.5	10645(a)	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5
x	x	Section 10.5	10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its water shortage contingency plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5
x	x	Section 10.6	10621(c)	If supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan Adoption, Submittal, and Implementation	Section 10.6
x	x	Section 10.7.2	10644(b)	If revised, submit a copy of the water shortage contingency plan to DWR within 30 days of adoption.	Plan Adoption, Submittal, and Implementation	Section 10.7



# B

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## Appendix B: DWR Standard UWMP Tables

**Submittal Table 2-1 Retail Only: Public Water Systems**

Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020 *
<i>Add additional rows as needed</i>			
CA3310009	Eastern Municipal Water District	155,561	84,673
<b>TOTAL</b>		155,561	84,673

*\* Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES:

**Submittal Table 2-2: Plan Identification**

Select Only One	Type of Plan		Name of RUWMP or Regional Alliance <i>if applicable</i> (select from drop down list)
<input checked="" type="checkbox"/>	<b>Individual UWMP</b>		
	<input type="checkbox"/>	Water Supplier is also a member of a RUWMP	
	<input type="checkbox"/>	Water Supplier is also a member of a Regional Alliance	
<input type="checkbox"/>	<b>Regional Urban Water Management Plan (RUWMP)</b>		

NOTES:

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
<input checked="" type="checkbox"/>	Supplier is a wholesaler
<input checked="" type="checkbox"/>	Supplier is a retailer
Fiscal or Calendar Year (select one)	
<input checked="" type="checkbox"/>	UWMP Tables are in calendar years
<input type="checkbox"/>	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
Units of measure used in UWMP * (select from drop down)	
Unit	AF
* <i>Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</i>	
NOTES:	

**Submittal Table 2-4 Retail: Water Supplier Information Exchange**

The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.

Wholesale Water Supplier Name

*Add additional rows as needed*

Metropolitan Water District of Southern California

NOTES:

**Submittal Table 2-4 Wholesale: Water Supplier Information Exchange (select one)**

Supplier has informed more than 10 other water suppliers of water supplies available in accordance with Water Code Section 10631. Completion of the table below is optional. If not completed, include a list of the water suppliers that were informed.

**Provide page number for location of the list.**

Supplier has informed 10 or fewer other water suppliers of water supplies available in accordance with Water Code Section 10631.  
**Complete the table below.**

Water Supplier Name

*Add additional rows as needed*

City of Hemet

City of Perris

City of San Jacinto

Lake Hemet Municipal Water District

Nuevo Water Company

Rancho California Water District

Western Municipal Water District

NOTES:

**Submittal Table 3-1 Retail: Population - Current and Projected**

Population Served	2020	2025	2030	2035	2040	2045(opt)
	603,950	649,700	695,500	741,300	774,300	807,200

NOTES:



**Submittal Table 3-1 Wholesale: Population - Current and Projected**

Population Served	2020	2025	2030	2035	2040	2045(opt)
	255,210	271,500	287,800	304,000	314,000	324,100

NOTES:

**Submittal Table 4-1 Retail: Demands for Potable and Non-Potable<sup>1</sup> Water - Actual**

Use Type	2020 Actual		
<p><b>Drop down list</b>                      May select each use multiple times                      These are the only Use Types that will be recognized by the WUEdata online submittal tool</p>	<p>Additional Description                      (as needed)</p>	<p>Level of Treatment                      When Delivered                      Drop down list</p>	<p>Volume<sup>2</sup></p>
Add additional rows as needed			
Single Family		Drinking Water	52,162
Multi-Family		Drinking Water	6,535
Commercial		Drinking Water	4,267
Industrial		Drinking Water	571
Institutional/Governmental		Drinking Water	1,629
Landscape		Drinking Water	8,155
Agricultural irrigation		Drinking Water	1,114
Agricultural irrigation		Raw Water	446
Other		Drinking Water	1,287
Other	Systems losses & unbilled, authorized consumption	Drinking Water	8,507
<b>TOTAL</b>			84,673
<p><sup>1</sup> Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4. <span style="float: right;"><sup>2</sup></span>                      Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</p>			
<p>NOTES:</p>			

**Submittal Table 4-1 Wholesale: Demands for Potable and Non-Potable<sup>1</sup> Water - Actual**

Use Type	2020 Actual		
<p><b>Drop down list</b>                      May select each use multiple times                      These are the only use types that will be recognized by the WUE data online submittal tool</p>	Additional Description (as needed)	Level of Treatment When Delivered Drop down list	Volume <sup>2</sup>
Add additional rows as needed			
Groundwater recharge	Imported water recharge to the Hemet/San Jacinto Basin	Raw Water	6,467
Sales to other agencies	City of Perris Water System	Drinking Water	1,685
Sales to other agencies	Western Municipal Water District Murrieta Division	Drinking Water	1,809
Sales to other agencies	Nuevo Water Company	Drinking Water	409
Sales to other agencies	Rancho California Water District	Drinking Water	11,105
Sales to other agencies	Rancho California Water District	Raw Water	13,923
Sales to other agencies	City of Hemet	Drinking Water	0
Sales to other agencies	City of San Jacinto	Drinking Water	0
Sales to other agencies	Lake Hemet Municipal Water District	Raw Water	986
<b>TOTAL</b>			<b>36,384</b>

<sup>1</sup> Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4. <sup>2</sup>  
 Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

NOTES:

**Submittal Table 4-2 Retail: Use for Potable and Non-Potable<sup>1</sup> Water - Projected**

Use Type	Additional Description (as needed)	Projected Water Use <sup>2</sup> <i>Report To the Extent that Records are Available</i>				
		2025	2030	2035	2040	2045 (opt)
<b>Drop down list</b> May select each use multiple times These are the only Use Types that will be recognized by the WUedata online submittal tool						
Add additional rows as needed						
Single Family		66,900	71,700	76,700	80,500	84,000
Multi-Family		8,500	9,100	9,700	10,200	10,600
Commercial		6,100	6,500	7,000	7,300	7,600
Industrial		600	600	700	700	700
Institutional/Governmental		2,700	2,900	3,100	3,200	3,400
Landscape		8,400	7,600	6,800	6,200	5,500
Agricultural irrigation	Potable Water	1,500	1,500	1,500	1,500	1,500
Agricultural irrigation	Raw Water	500	500	500	500	500
Other		0	0	0	0	0
Other	System losses & unbilled, authorized consumption	7,400	7,900	8,400	8,800	9,200
<b>TOTAL</b>		<b>102,600</b>	<b>108,300</b>	<b>114,400</b>	<b>118,900</b>	<b>123,000</b>

<sup>1</sup> Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4. <sup>2</sup> Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

NOTES:

Submittal Table 4-2 Wholesale: Use for Potable and Raw Water <sup>1</sup> - Projected						
Use Type	Additional Description (as needed)	Projected Water Use <sup>2</sup>				
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool.		Report To the Extent that Records are Available				
		2025	2030	2035	2040	2045 (opt)
Add additional rows as needed						
Groundwater recharge	Imported water recharge to the Hemet/San Jacinto Basin	7,500	7,500	7,500	7,500	7,500
Sales to other agencies	City of Perris Water System	1,800	1,900	2,100	2,200	2,300
Sales to other agencies	Western Municipal Water District Murrieta Division	1,000	1,300	1,600	2,000	2,300
Sales to other agencies	Nuevo Water Company	500	1,000	1,100	1,200	1,200
Sales to other agencies	Rancho California Water District (Potable)	27,100	20,000	21,000	15,200	16,500
Sales to other agencies	Rancho California Water District (Raw)	15,200	15,200	15,200	22,300	22,300
Sales to other agencies	City of Hemet	0	0	0	0	0
Sales to other agencies	City of San Jacinto	0	0	0	0	0
Sales to other agencies	Lake Hemet Municipal Water District	5,100	5,500	5,900	6,300	6,700
	<b>TOTAL</b>	<b>58,200</b>	<b>52,400</b>	<b>54,400</b>	<b>56,700</b>	<b>58,800</b>
<sup>1</sup> Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4. Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.						
NOTES:						

**Submittal Table 4-3 Retail: Total Water Use (Potable and Non-Potable)**

	2020	2025	2030	2035	2040	2045 (opt)
Potable Water, Raw, Other Non-potable <i>From Tables 4-1R and 4-2 R</i>	84,673	102,600	108,300	114,400	118,900	123,000
Recycled Water Demand <sup>1</sup> <i>From Table 6-4</i>	31,243	43,330	49,020	54,500	59,800	64,100
Optional Deduction of Recycled Water Put Into Long- Term Storage <sup>2</sup>						
<b>TOTAL WATER USE</b>	115,916	145,930	157,320	168,900	178,700	187,100

<sup>1</sup> Recycled water demand fields will be blank until Table 6-4 is complete <sup>2</sup>  
 Long term storage means water placed into groundwater or surface storage that is not removed from storage in the same year. Supplier **may** deduct recycled water placed in long-term storage from their reported demand. This value is manually entered into Table 4-3.

NOTES:

### Submittal Table 4-3 Wholesale: Total Water Use (Potable and Non-Potable)

	2020	2025	2030	2035	2040	2045 (opt)
Potable and Raw Water From Tables 4-1W and 4-2W	36,384	58,200	52,400	54,400	56,700	58,800
Recycled Water Demand* From Table 6-4W	1,285	4,770	5,180	5,600	5,600	5,600
<b>TOTAL WATER DEMAND</b>	<b>37,669</b>	<b>62,970</b>	<b>57,580</b>	<b>60,000</b>	<b>62,300</b>	<b>64,400</b>

*\*Recycled water demand fields will be blank until Table 6-4 is complete.*

NOTES:

**Submittal Table 4-4 Retail: Last Five Years of Water Loss Audit Reporting**

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss <sup>1,2</sup>
07/2015	8,865
07/2016	6,221
07/2017	4,321
07/2018	7,360
07/2019	5,096

<sup>1</sup> Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet. <sup>2</sup>  
**Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.**

NOTES:



**Submittal Table 4-5 Retail Only: Inclusion in Water Use Projections**

<p><b>Are Future Water Savings Included in Projections?</b> (Refer to Appendix K of UWMP Guidebook) <i>Drop down list (y/n)</i></p>	<p>Yes</p>
<p>If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.</p>	<p>Section 4.1.1</p>
<p><b>Are Lower Income Residential Demands Included In Projections?</b> <i>Drop down list (y/n)</i></p>	<p>Yes</p>
<p>NOTES:</p>	

**Submittal Table 5-1 Baselines and Targets Summary**  
**From SB X7-7 Verification Form**  
*Retail Supplier or Regional Alliance Only*

Baseline Period	Start Year *	End Year *	Average Baseline GPCD*	Confirmed 2020 Target*
10-15 year	1999	2008	197	176
5 Year	2003	2007	195	

*\*All cells in this table should be populated manually from the supplier's SBX7-7 Verification Form and reported in Gallons per Capita per Day (GPCD)*

NOTES:

**Submittal Table 5-2: 2020 Compliance** **From**  
**SB X7-7 2020 Compliance Form**  
*Retail Supplier or Regional Alliance Only*

2020 GPCD			2020 Confirmed Target GPCD*	Did Supplier Achieve Targeted Reduction for 2020? Y/N
Actual 2020 GPCD*	2020 TOTAL Adjustments*	Adjusted 2020 GPCD* <i>(Adjusted if applicable)</i>		
125	0	0	176	Y

*\*All cells in this table should be populated manually from the supplier's SBX7-7 2020 Compliance Form and reported in Gallons per Capita per Day (GPCD)*

NOTES:

**Submittal Table 6-1 Retail: Groundwater Volume Pumped**

Supplier does not pump groundwater.  
The supplier will not complete the table below.

All or part of the groundwater described below is desalinated.

Groundwater Type <b>Drop Down List</b> <i>May use each category multiple times</i>	Location or Basin Name	2016*	2017*	2018*	2019*	2020*
--	------------------------	-------	-------	-------	-------	-------

*Add additional rows as needed*

Alluvial Basin	Hemet/San Jacinto Basin portion of the San Jacinto Groundwater Basin (DWR 8-05)	6,171	6,498	6,367	5,213	9,383
Alluvial Basin	Pumping of EMWD share of unused Soboba Settlement Water recharged in the Hemet/San Jacinto Basin portion of the San Jacinto Groundwater Basin (DWR 8-05)	3,585	3,864	3,850	1,508	2,625
Alluvial Basin	West San Jacinto Basin portion of the San Jacinto Groundwater Basin (DWR 8-05)	4,429	2,908	3,307	1,323	2,402
Alluvial Basin	Brackish Groundwater from the West San Jacinto Basin portion of the San Jacinto Groundwater Basin (DWR 8-05)	10,254	8,585	8,547	9,801	9,565
<b>TOTAL</b>		24,439	21,855	22,071	17,845	23,975

**\* Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.**

NOTES:

**Submittal Table 6-2 Retail: Wastewater Collected Within Service Area in 2020**

There is no wastewater collection system. The supplier will not complete the table below.

Percentage of 2020 service area covered by wastewater collection system *(optional)*

Percentage of 2020 service area population covered by wastewater collection system *(optional)*

Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? <i>Drop Down List</i>	Volume of Wastewater Collected from UWMP Service Area 2020 *	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? <i>Drop Down List</i>	Is WWTP Operation Contracted to a Third Party? <i>(optional)</i> <i>Drop Down List</i>
Eastern Municipal Water District	Metered	8,194	Eastern Municipal Water District	San Jacinto Valley RWRf	Yes	No
Eastern Municipal Water District	Metered	11,507	Eastern Municipal Water District	Moreno Valley RWRf	Yes	No
Eastern Municipal Water District	Metered	16,090	Eastern Municipal Water District	Temecula Valley RWRf	Yes	No
Eastern Municipal Water District	Metered	17,282	Eastern Municipal Water District	Perris Valley RWRf	Yes	No
<b>Total Wastewater Collected from Service Area in 2020:</b>		53,073				

**\* Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3 .**

NOTES:

**Submittal Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2020**

No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number (optional) <sup>2</sup>	Method of Disposal <i>Drop down list</i>	Does This Plant Treat Wastewater Generated Outside the Service Area? <i>Drop down list</i>	Treatment Level <i>Drop down list</i>	2020 volumes <sup>1</sup>				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
San Jacinto Valley RWRP	Reach 4 Dissipater	Temescal Creek		River or creek outfall	No	Tertiary	7,441	436	6,319		
Moreno Valley RWRP	Reach 4 Dissipater	Temescal Creek		River or creek outfall	No	Tertiary	10,451	1,600	8,874		
Temecula Valley RWRP	Reach 4 Dissipater	Temescal Creek		River or creek outfall	No	Tertiary	14,612	1,600	12,407		
Perris Valley RWRP	Reach 4 Dissipater	Temescal Creek		River or creek outfall	No	Tertiary	15,696	3,637	13,327		
<b>Total</b>							<b>48,200</b>	<b>7,273</b>	<b>40,927</b>	<b>0</b>	<b>0</b>

<sup>1</sup> Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

<sup>2</sup> If the Wastewater Discharge ID Number is not available to the UWMP preparer, access the SWRCB CIWQS regulated facility website at <https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/CiwqsReportServlet?inCommand=reset&reportName=RegulatedFacility>

NOTES:

**Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area**

<input type="checkbox"/> Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.										
Name of Supplier Producing (Treating) the Recycled Water:		Eastern Municipal Water District								
Name of Supplier Operating the Recycled Water Distribution System:		Eastern Municipal Water District								
Supplemental Water Added in 2020 (volume) <i>Include units</i>		0								
Source of 2020 Supplemental Water		N/A								
Beneficial Use Type <i>additional rows if needed.</i>	<i>Insert</i> Potential Beneficial Uses of Recycled Water (Describe)	Amount of Potential Uses of Recycled Water (Quantity) <i>Include volume units<sup>1</sup></i>	General Description of 2020 Uses	Level of Treatment <i>Drop down list</i>	2020 <sup>1</sup>	2025 <sup>1</sup>	2030 <sup>1</sup>	2035 <sup>1</sup>	2040 <sup>1</sup>	2045 <sup>1</sup> (opt)
Agricultural irrigation				Tertiary	21,178	22,240	24,640	20,000	20,000	20,000
Landscape irrigation <i>(exc golf courses)</i>				Tertiary	4,275	7,600	10,080	10,600	11,100	11,100
Golf course irrigation				Tertiary	1,457	2,750	3,130	3,500	3,500	3,500
Commercial use										
Industrial use				Tertiary	0	440	870	1,310	1,310	1,310
Geothermal and other energy production										
Seawater intrusion barrier										
Recreational impoundment				Tertiary	1,029	1,400	1,400	1,400	1,400	1,400
Wetlands or wildlife habitat				Tertiary	3,231	4,500	4,500	4,500	4,500	4,500
Groundwater recharge (IPR)				Advanced		4,100	4,100	12,300	12,300	12,300
Reservoir water augmentation (IPR)										
Direct potable reuse										
Other (Description Required)	Construction			Tertiary	73	300	300	300	300	300
Other (Description Required)	Split between agricultural and landscape usage, proportion to be determined in future			Tertiary				590	5,390	9,690
<b>Total:</b>					<b>31,243</b>	<b>43,330</b>	<b>49,020</b>	<b>54,500</b>	<b>59,800</b>	<b>64,100</b>
<b>2020 Internal Reuse</b>										

<sup>1</sup> Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

NOTES:

**Submittal Table 6-4 Wholesale: Current and Projected Retailers Provided Recycled Water Within Service Area**

<input type="checkbox"/>	Recycled water is not directly treated or distributed by the Supplier. The Supplier will not complete the table below.						
Name of Receiving Supplier or Direct Use by Wholesaler	Level of Treatment <i>Drop down list</i>	2020*	2025*	2030*	2035*	2040*	2045* (opt)
<i>Add additional rows as needed</i>							
Elsinore Valley Municipal Water District	Tertiary	533	1,120	1,120	1,120	1,120	1,120
Rancho California Water District	Tertiary	752	3,650	4,060	4,480	4,480	4,480
<b>Total</b>		1,285	4,770	5,180	5,600	5,600	5,600
<b>* Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</b>							
NOTES:							



**Submittal Table 6-5 Retail: 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual**



Recycled water was not used in 2015 nor projected for use in 2020.  
 The supplier will not complete the table below. If recycled water was not used in 2020, and was not predicted to be in 2015, then check the box and do not complete the table.

Beneficial Use Type	2015 Projection for 2020 <sup>1</sup>	2020 Actual Use <sup>1</sup>
<i>Insert additional rows as needed.</i>		
Agricultural irrigation	18,784	21,178
Landscape irrigation (exc golf courses)	5,124	4,275
Golf course irrigation	2,375	1,457
Commercial use	300	0
Industrial use	2,912	0
Geothermal and other energy production		
Seawater intrusion barrier		
Recreational impoundment	1,250	1,029
Wetlands or wildlife habitat	4,500	3,231
Groundwater recharge (IPR)		
Reservoir water augmentation (IPR)		
Direct potable reuse		
Other (Description Required) (Construction)		73
<b>Total</b>	35,245	31,243

<sup>1</sup> Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

NOTE:

**Submittal Table 6-5 Wholesale: 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual**

<input type="checkbox"/>	Recycled water was not used or distributed by the supplier in 2015, nor projected for use or distribution in 2020. The wholesale supplier will not complete the table below.
--------------------------	---

Name of Receiving Supplier or Direct Use by Wholesaler	2015 Projection for 2020*	2020 Actual Use*
<i>Add additional rows as needed</i>		
Elsinore Valley Municipal Water District	289	533
Rancho California Water District	1,367	752
<b>Total</b>	1,656	1,285

**\*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.**

NOTES:

Submittal Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
<input type="checkbox"/>	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use *
<i>Add additional rows as needed</i>			
Mandatory Recycled Water Use Ordinance	The ordinance requiring new and existing customers to use recycled water for appropriate permitted uses when it is available	Ongoing	
Rate Incentives	EMWD prices recycled water below the cost of potable water for both municipal and agricultural use	Ongoing	
Water Supply Assessments	Assessments condition all major new developments to use recycled water as a condition of service where it is available and permitted	Ongoing	
Public Education	EMWD has a recycled water public education campaign to promote the benefits of recycled water	Ongoing	
Facilities Financing	EMWD helps arrange or provide financing for the construction of facilities needed to convert potable demands to recycled water	Ongoing	
<b>Total</b>			<b>0</b>
<i>*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</i>			
NOTES: EMWD does not have data to support a projection of how much increased recycled water sales will result from each of the listed methods of encouraging recycled water use. Historically, the low cost of recycled water was the primary inducement for agricultural customers to use recycled water in-lieu of groundwater. However, as municipal customers continue to replace agriculture, it is reasonable to assume that the mandatory provisions of EMWD's Recycled Water Use Ordinance will play a major role in program expansion.			

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
<input type="checkbox"/>	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
<input type="checkbox"/>	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
Provide page location of narrative in the UWMP						
Name of Future Projects or Programs	Joint Project with other suppliers?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type <i>Drop Down List</i>	Expected Increase in Water Supply to Supplier* <i>This may be a range</i>
	<i>Drop Down List (y/n)</i>	<i>If Yes, Supplier Name</i>				
<i>Add additional rows as needed</i>						
SARCCUP / San Jacinto Enhanced Recharge and Recovery Program (ERRP) Phase I	Yes	Inland Empire Utilities Agencies, Orange County Water District, San Bernardino Valley Municipal Water District, Western Municipal Water District, DWR	Project to be completed in phases and includes conjunctive use of groundwater recharge	2025	Multi-Dry Year	7,000
Perris North Basin Groundwater Contamination Prevention and Remediation Program	Yes	SWRCB (funding partner), WMWD	Combined MV and North Perris GW Development, and wells near MARB	2023	Average Year	6,450
Perris II Desalter	Yes	Army Corps of Engineers	Expected to be online mid-2021	2021	Average Year	5,400
Purified Water Replenishment, Phase I (IPR)	Yes	N/A	Advanced treated recycled water used to recharge the Hemet/San Jacinto Basin	2024	Average Year	4,000
Purified Water Replenishment, Phase II (IPR)	Yes	N/A	Advanced treated recycled water used to recharge the Hemet/San Jacinto Basin - could be increased to 11,000 AFY if brine issues are resolved	2035	Average Year	8,000
San Jacinto Enhanced Recharge and Recovery Program (ERRP) Phase II	Yes		Project to be completed in phases and includes conjunctive use of groundwater recharge	2030 - 2035	Multi-Dry Year	7,500
San Jacinto Enhanced Recharge and Recovery Program (ERRP) Phase III	No		Project to be completed in phases and includes conjunctive use of groundwater recharge	2040 - 2050	Multi-Dry Year	TBD
<b>*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</b>						
NOTES:						

**Submittal Table 6-8 Retail: Water Supplies — Actual**

Water Supply		2020		
<b>Drop down list</b> May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Detail on Water Supply	Actual Volume*	Water Quality Drop Down List	Total Right or Safe Yield* (optional)
Add additional rows as needed				
Purchased or Imported Water	Treated water purchased from Metropolitan	44,726	Drinking Water	
Purchased or Imported Water	Untreated water purchased from Metropolitan, treated at EMWD Filtration Plants	17,584	Drinking Water	
Purchased or Imported Water	EMWD share of unused Soboba Settlement Water	2,625	Drinking Water	
Purchased or Imported Water	Raw Water for Agriculture	642	Other Non-Potable Water	
Groundwater (not desalinated)	Potable water pumped from the Hemet/San Jacinto Basin portion of the San Jacinto Groundwater Basin (DWR 8-05)	9,383	Drinking Water	
Groundwater (not desalinated)	Potable water pumped from the West San Jacinto Basin portion of the San Jacinto Groundwater Basin (DWR 8-05)	2,402	Drinking Water	
Groundwater (not desalinated)	Brackish water pumped from the West San Jacinto Basin portion of the San Jacinto Groundwater Basin (DWR 8-05) used to supplement the recycled water system	0	Other Non-Potable Water	
Desalinated Water - Groundwater	Desalinated water pumped from the West San Jacinto Basin portion of the San Jacinto Groundwater Basin (DWR 8-05)	7,310	Drinking Water	
Recycled Water	Includes Storage Pond Incidental Recharge / Evaporation	39,642	Other Non-Potable Water	
<b>Total</b>		<b>124,314</b>		<b>0</b>

*\*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES:

**Submittal Table 6-8 Wholesale: Water Supplies — Actual**

Water Supply		2020		
<b>Drop down list</b> May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Detail on Water Supply	Actual Volume*	Water Quality Drop Down List	Total Right or Safe Yield* (optional)
		Add additional rows as needed		
Purchased or Imported Water	Treated Water purchased from Metropolitan	15,008	Drinking Water	
Purchased or Imported Water	Raw Water purchased from Metropolitan	14,909	Other Non-Potable Water	
Purchased or Imported Water	Soboba Settlement Water	6,467	Other Non-Potable Water	
Recycled Water		1,285	Recycled Water	
<b>Total</b>		<b>37,669</b>		<b>0</b>

*\*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES:

**Submittal Table 6-9 Retail: Water Supplies — Projected**

Water Supply		Projected Water Supply * Report To the Extent Practicable									
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Detail on Water Supply	2025		2030		2035		2040		2045 (opt)	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
		Add additional rows as needed									
Purchased or Imported Water	Metropolitan Treated/Untreated	66,447		72,147		70,247		74,747		78,847	
Groundwater (not desalinated)	Pumped from the Hemet/San Jacinto Basin	7,303		7,303		7,303		7,303		7,303	
Groundwater (not desalinated)	Pumped from the West San Jacinto Basin	11,450		11,450		11,450		11,450		11,450	
Desalinated Water - Groundwater	Desalinated water from the West San Jacinto Basin	13,400		13,400		13,400		13,400		13,400	
Recycled Water	Excludes Storage Pond Incidental Recharge / Evaporation	43,330		49,020		54,500		59,800		64,100	
Other	Purified Water Replenishment (IPR)	4,000		4,000		12,000		12,000		12,000	
<b>Total</b>		<b>145,930</b>	<b>0</b>	<b>157,320</b>	<b>0</b>	<b>168,900</b>	<b>0</b>	<b>178,700</b>	<b>0</b>	<b>187,100</b>	<b>0</b>
*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.											
NOTES											

**Submittal Table 6-9 Wholesale: Water Supplies — Projected**

Water Supply		Projected Water Supply* Report To the Extent Practicable									
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Detail on Water Supply	2025		2030		2035		2040		2045 (opt)	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
Add additional rows as needed											
Purchased or Imported Water	Metropolitan Treated / Untreated	50,700		44,900		46,900		49,200		51,300	
Purchased or Imported Water	Soboba Settlement Water	7,500		7,500		7,500		7,500		7,500	
Recycled Water		4,770		5,180		5,600		5,600		5,600	
	<b>Total</b>	62,970	0	57,580	0	60,000	0	62,300	0	64,400	0

*\*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES:



**Submittal Table 7-1 Retail: Basis of Water Year Data (Reliability Assessment)**

Year Type	Base Year If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2019-2020, use 2020	Available Supplies if Year Type Repeats	
		<input type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. <span style="float: right;">Location _____</span>
		<input checked="" type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available *	% of Average Supply
Average Year	1922-2017		100%
Single-Dry Year	1977		100%
Consecutive Dry Years 1st Year	1988		100%
Consecutive Dry Years 2nd Year	1989		100%
Consecutive Dry Years 3rd Year	1990		100%
Consecutive Dry Years 4th Year	1991		100%
Consecutive Dry Years 5th Year	1992		100%

*Supplier may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.*

**\*Units of measure (AF, CCF, MG ) must remain consistent throughout the UWMP as reported in Table 2-3.**

NOTES:

**Submittal Table 7-1 Wholesale: Basis of Water Year Data (Reliability Assessment)**

Year Type	Base Year If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000	Available Supplies if Year Type Repeats	
		<input type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. _____ Location
		<input checked="" type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available *	% of Average Supply
Average Year	1922-2017		100%
Single-Dry Year	1977		100%
Consecutive Dry Years 1st Year	1988		100%
Consecutive Dry Years 2nd Year	1989		100%
Consecutive Dry Years 3rd Year	1990		100%
Consecutive Dry Years 4th Year	1991		100%
Consecutive Dry Years 5th Year	1992		100%

*Supplier may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a supplier uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table. Suppliers may create an additional worksheet for the additional tables.*

**\*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.**

NOTES:

**Submittal Table 7-2 Retail: Normal Year Supply and Demand Comparison**

	2025	2030	2035	2040	2045 (Opt)
Supply totals (autofill from Table 6-9)	145,930	157,320	168,900	178,700	187,100
Demand totals (autofill from Table 4-3)	145,930	157,320	168,900	178,700	187,100
Difference	0	0	0	0	0

NOTES:

**Submittal Table 7-2 Wholesale: Normal Year Supply and Demand Comparison**

	2025	2030	2035	2040	2045 (Opt)
Supply totals <i>(autofill from Table 6-9)</i>	62,970	57,580	60,000	62,300	64,400
Demand totals <i>(autofill fm Table 4-3)</i>	62,970	57,580	60,000	62,300	64,400
Difference	0	0	0	0	0

NOTES:

Submittal Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals*	151,130	162,820	174,700	184,700	193,300
Demand totals*	151,130	162,820	174,700	184,700	193,300
Difference	0	0	0	0	0
<b>*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</b>					
NOTES:					

Submittal Table 7-3 Wholesale: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals*	64,770	59,080	61,600	63,600	65,900
Demand totals*	64,770	59,080	61,600	63,600	65,900
Difference	0	0	0	0	0
<b>*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</b>					
NOTES:					

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

		2025*	2030*	2035*	2040*	2045* (Opt)
First year	Supply totals	151,130	162,820	174,700	184,700	193,300
	Demand totals	151,130	162,820	174,700	184,700	193,300
	Difference	0	0	0	0	0
Second year	Supply totals	132,700	143,300	153,700	162,500	170,300
	Demand totals	132,700	143,300	153,700	162,500	170,300
	Difference	0	0	0	0	0
Third year	Supply totals	134,900	145,500	155,500	164,100	171,900
	Demand totals	134,900	145,500	155,500	164,100	171,900
	Difference	0	0	0	0	0
Fourth year	Supply totals	137,100	147,600	157,400	165,700	173,500
	Demand totals	137,100	147,600	157,400	165,700	173,500
	Difference	0	0	0	0	0
Fifth year	Supply totals	140,200	150,800	160,000	168,000	175,800
	Demand totals	140,200	150,800	160,000	168,000	175,800
	Difference	0	0	0	0	0
Sixth year (optional)	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0

**\*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.**

NOTES:

**Submittal Table 7-4 Wholesale: Multiple Dry Years Supply and Demand Comparison**

		2025*	2030*	2035*	2040*	2045* (Opt)
First year	Supply totals	64,770	59,080	61,600	63,600	65,900
	Demand totals	64,770	59,080	61,600	63,600	65,900
	Difference	0	0	0	0	0
Second year	Supply totals	63,200	59,100	61,400	63,400	65,600
	Demand totals	63,200	59,100	61,400	63,400	65,600
	Difference	0	0	0	0	0
Third year	Supply totals	62,100	59,600	61,800	63,900	66,000
	Demand totals	62,100	59,600	61,800	63,900	66,000
	Difference	0	0	0	0	0
Fourth year	Supply totals	61,000	60,100	62,200	64,300	66,400
	Demand totals	61,000	60,100	62,200	64,300	66,400
	Difference	0	0	0	0	0
Fifth year	Supply totals	59,800	60,600	62,600	64,700	66,900
	Demand totals	59,800	60,600	62,600	64,700	66,900
	Difference	0	0	0	0	0
Sixth year <i>(optional)</i>	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0

**\*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.**

NOTES:



**Submission Table 7-5: Five-Year Drought Risk Assessment Tables to address Water Code Section 10635(b)**

<b>2021</b>	<b>Total</b>
Total Water Use	177,900
Total Supplies	177,900
Surplus/Shortfall w/o WSCP Action	0
<b>Planned WSCP Actions</b> (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%

<b>2022</b>	<b>Total</b>
Total Water Use	185,400
Total Supplies	185,400
Surplus/Shortfall w/o WSCP Action	0
<b>Planned WSCP Actions</b> (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	14,900
Revised Surplus/(shortfall)	14,900
Resulting % Use Reduction from WSCP action	8%

<b>2023</b>	<b>Total</b>
Total Water Use	194,400
Total Supplies	194,400
Surplus/Shortfall w/o WSCP Action	0
<b>Planned WSCP Actions</b> (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	15,400
Revised Surplus/(shortfall)	15,400
Resulting % Use Reduction from WSCP action	8%

<b>2024</b>	<b>Total</b>
Total Water Use	209,400
Total Supplies	209,400
Surplus/Shortfall w/o WSCP Action	0
<b>Planned WSCP Actions</b> (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	16,000
Revised Surplus/(shortfall)	16,000
Resulting % Use Reduction from WSCP action	8%

<b>2025</b>	<b>Total</b>
Total Water Use	217,500
Total Supplies	217,500
Surplus/Shortfall w/o WSCP Action	0
<b>Planned WSCP Actions</b> (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	16,500
Revised Surplus/(shortfall)	16,500
Resulting % Use Reduction from WSCP action	8%

**Submittal Table 8-1**  
**Water Shortage Contingency Plan Levels**

Shortage Level	Percent Shortage Range	Shortage Response Actions <i>(Narrative description)</i>
1	Up to 10%	Supply watch. Customers will be asked to reduce up to 10% of demand voluntarily.
2	Up to 25%	Supply alert. Customers will be asked to reduce 25% of demand voluntarily.
3	Up to 25%	Mandatory Waste Reduction. At this stage efforts will be focused on a mandatory reduction of excessive water use.
4	Up to 50%	Mandatory Outdoor Reduction. At this stage efforts will be focused on mandatory reduction of outdoor water use.
5	>50%	Severe shortage or catastrophic incident  Mandatory Indoor Reduction. At this stage efforts will be focused on mandatory reduction of indoor water use. This stage would only be implemented in response to a catastrophic loss of supplies requiring a 50 percent or more reduction in demand.

NOTES:

**Submittal Table 8-2: Demand Reduction Actions**

Shortage Level	Demand Reduction Actions <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>For Retail Suppliers Only Drop Down List</i>
<i>Add additional rows as needed</i>				
1 - 5	Expand Public Information Campaign	N/A		No
1	Other - Prohibit use of potable water for washing hard surfaces	N/A		Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	N/A		Yes
1	Landscape - Limit landscape irrigation to specific times	N/A		Yes
1	Landscape - Prohibit certain types of landscape irrigation	N/A		Yes
1	Landscape - Restrict or prohibit runoff from landscape irrigation	N/A		Yes
1	Other water feature or swimming pool restriction	N/A		Yes
1	Other	N/A		Yes
1	Other	N/A		Yes
1	Landscape - Other landscape restriction or prohibition	N/A		Yes
2	Landscape - Other landscape restriction or prohibition	Medium		Yes
2	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Medium		Yes
2	Other water feature or swimming pool restriction	Low		Yes
2	Other	Medium		Yes
3	Implement or Modify Drought Rate Structure or Surcharge	High		Yes
3a	Other	Medium		Yes
3b	Implement or Modify Drought Rate Structure or Surcharge	High		Yes
3c	Implement or Modify Drought Rate Structure or Surcharge	High		Yes
4	Implement or Modify Drought Rate Structure or Surcharge	High		Yes
4	Landscape - Other landscape restriction or prohibition	Medium		Yes
4a	Implement or Modify Drought Rate Structure or Surcharge	High		Yes
4b	Implement or Modify Drought Rate Structure or Surcharge	High		Yes
4c	Implement or Modify Drought Rate Structure or Surcharge	High		Yes
5	Implement or Modify Drought Rate Structure or Surcharge	High		Yes
5a	Implement or Modify Drought Rate Structure or Surcharge	High		Yes
5b	Implement or Modify Drought Rate Structure or Surcharge	High		Yes
5c	Implement or Modify Drought Rate Structure or Surcharge	High		Yes
5	Implement or Modify Drought Rate Structure or Surcharge	High		Yes
NOTES:				

**Submittal Table 8-3: Supply Augmentation and Other Actions**

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>
<i>Add additional rows as needed</i>			

NOTES:

**Submittal Table 10-1 Retail: Notification to Cities and Counties**

City Name	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
City of Beaumont	Yes	Yes
City of Canyon Lake	Yes	Yes
City of Menifee	Yes	Yes
City of Moreno Valley	Yes	Yes
City of Murrieta	Yes	Yes
City of Riverside	Yes	Yes
City of Temecula	Yes	Yes
Pechanga Band of Luiseño Indians	Yes	Yes
Soboba Band of Luiseño Indians	Yes	Yes
County Name <i>Drop Down List</i>	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
Riverside County	Yes	Yes
NOTES:		

**Submittal Table 10-1 Wholesale: Notification to Cities and Counties (select one)**

<input checked="" type="checkbox"/>	Supplier has notified more than 10 cities or counties in accordance with Water Code Sections 10621 (b) and 10642. <b>Completion of the table below is not required. Provide a separate list of the cities and counties that were notified.</b>
-------------------------------------	---

	Provide the page or location of this list in the UWMP.
--	--

<input type="checkbox"/>	Supplier has notified 10 or fewer cities or counties. <b>Complete the table below.</b>
--------------------------	---

City Name	60 Day Notice	Notice of Public Hearing
-----------	---------------	--------------------------

*Add additional rows as needed*

City of Perris	Yes	Yes
City of Hemet	Yes	Yes
City of San Jacinto	Yes	Yes

County Name <small>Drop Down List</small>	60 Day Notice	Notice of Public Hearing
--	---------------	--------------------------

*Add additional rows as needed*

Riverside County	Yes	Yes

NOTES:

# C

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## Appendix C: DWR Standard SB X7-7 Tables

**SB X7-7 Table 0: Units of Measure Used in 2020 UWMP\***

*(select one from the drop down list)*

Acre Feet

*\*The unit of measure must be consistent throughout the UWMP, as reported in Submittal Table 2-3.*

NOTES:



**SB X7-7 Table 2: Method for 2020 Population Estimate**

**Method Used to Determine 2020 Population**  
(may check more than one)

<input type="checkbox"/>	<b>1. Department of Finance (DOF) or American Community Survey (ACS)</b>
<input checked="" type="checkbox"/>	<b>2. Persons-per-Connection Method</b>
<input checked="" type="checkbox"/>	<b>3. DWR Population Tool</b>
<input type="checkbox"/>	<b>4. Other</b> DWR recommends pre-review
NOTES:	

**SB X7-7 Table 3: 2020 Service Area Population**

**2020 Compliance Year Population**

<b>2020</b>	603,950
-------------	---------

NOTES:

**SB X7-7 Table 4: 2020 Gross Water Use**

Compliance Year 2020	2020 Volume Into Distribution System <i>This column will remain blank until SB X7-7 Table 4-A is completed.</i>	2020 Deductions					2020 Gross Water Use
		Exported Water *	Change in Dist. System Storage* (+/-)	Indirect Recycled Water <i>This column will remain blank until SB X7-7 Table 4-B is completed.</i>	Water Delivered for Agricultural Use*	Process Water <i>This column will remain blank until SB X7-7 Table 4-D is completed.</i>	
	84,672	-	-	-	-	-	<b>84,672</b>

\* Units of measure (AF, MG , or CCF) must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.

NOTES:

**SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment**

Complete one table for each source.

<b>Name of Source</b>		Treated water from Metropolitan	
<b>This water source is (check one) :</b>			
<input type="checkbox"/>		The supplier's own water source	
<input checked="" type="checkbox"/>		A purchased or imported source	
Compliance Year 2020	Volume Entering Distribution System <sup>1</sup>	Meter Error Adjustment <sup>2</sup> Optional (+/-)	Corrected Volume Entering Distribution System
	44,726	-	44,726
<sup>1</sup> Units of measure (AF, MG, or CCF) must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3. <sup>2</sup> Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document			
NOTES			

**SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s) Meter Error Adjustment**

Complete one table for each source.

<b>Name of Source</b>		Untreated water from Metropolitan	
<b>This water source is (check one) :</b>			
<input type="checkbox"/>		The supplier's own water source	
<input checked="" type="checkbox"/>		A purchased or imported source	
Compliance Year 2020	Volume Entering Distribution System <sup>1</sup>	Meter Error Adjustment <sup>2</sup> Optional (+/-)	Corrected Volume Entering Distribution System
	17,584		17,584
<sup>1</sup> Units of measure (AF, MG, or CCF) must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3. <sup>2</sup> Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document			
NOTES:			

**SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment**

Complete one table for each source.

<b>Name of Source</b>		EMWD share of unused Soboba Settlement Water	
<b>This water source is (check one) :</b>			
<input type="checkbox"/>		The supplier's own water source	
<input checked="" type="checkbox"/>		A purchased or imported source	
Compliance Year 2020	Volume Entering Distribution System <sup>1</sup>	Meter Error Adjustment <sup>2</sup> Optional (+/-)	Corrected Volume Entering Distribution System
	2,625		2,625
<sup>1</sup> Units of measure (AF, MG, or CCF) must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3. <sup>2</sup> Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document			
NOTES:			

**SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment**

Complete one table for each source.

**Name of Source** Groundwater

**This water source is (check one) :**

- The supplier's own water source  
 A purchased or imported source

Compliance Year 2020	Volume Entering Distribution System <sup>1</sup>	Meter Error Adjustment <sup>2</sup> Optional (+/-)	Corrected Volume Entering Distribution System
	11,785		11,785

<sup>1</sup> Units of measure (AF, MG, or CCF) must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3. <sup>2</sup> Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document

NOTES:

**SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment**

Complete one table for each source.

**Name of Source** Desalinated groundwater

**This water source is (check one) :**

- The supplier's own water source  
 A purchased or imported source

Compliance Year 2020	Volume Entering Distribution System <sup>1</sup>	Meter Error Adjustment <sup>2</sup> Optional (+/-)	Corrected Volume Entering Distribution System
	7,310		7,310

<sup>1</sup> Units of measure (AF, MG, or CCF) must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3. <sup>2</sup> Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document

NOTES:

**SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment**

Complete one table for each source.

**Name of Source** Agriculture

**This water source is (check one) :**

- The supplier's own water source  
 A purchased or imported source

Compliance Year 2020	Volume Entering Distribution System <sup>1</sup>	Meter Error Adjustment <sup>2</sup> Optional (+/-)	Corrected Volume Entering Distribution System
	642		642

<sup>1</sup> Units of measure (AF, MG, or CCF) must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3. <sup>2</sup> Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document

NOTES:

**SB X7-7 Table 5: 2020 Gallons Per Capita Per Day (GPCD)**

<b>2020 Gross Water <i>Fm SB X7-7 Table 4</i></b>	<b>2020 Population <i>Fm</i> <i>SB X7-7 Table 3</i></b>	<b>2020 GPCD</b>
84,672	603,950	125

NOTES:

**SB X7-7 Table 9: 2020 Compliance**

Actual 2020 GPCD <sup>1</sup>	Optional Adjustments to 2020 GPCD					2020 Confirmed Target GPCD <sup>1,2</sup>	Did Supplier Achieve Targeted Reduction for 2020?
	Enter "0" if Adjustment Not Used			TOTAL Adjustments <sup>1</sup>	Adjusted 2020 GPCD <sup>1</sup> <i>(Adjusted if applicable)</i>		
	Extraordinary Events <sup>1</sup>	Weather Normalization <sup>1</sup>	Economic Adjustment <sup>1</sup>				
125	-	-	-	-	125	176	YES

<sup>1</sup> All values are reported in GPCD

<sup>2</sup> **2020 Confirmed Target GPCD** is taken from the Supplier's SB X7-7 Verification Form Table SB X7-7, 7-F.

NOTES:

# D

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## Appendix D: AWWA Water Audits





# AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0

American Water Works Association

? Click to access definition  
+ Click to add a comment

**Water Audit Report for: Eastern Municipal Water District (3310009 SRO)**  
**Reporting Year: 2015-2016**      **7/2015 - 6/2016**

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

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

To select the correct data grading for each input, determine the highest grade where the

**WATER SUPPLIED**

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

Volume from own sources:	+ ?	5	39,038.703	acre-ft/yr
Water imported:	+ ?	5	47,433.023	acre-ft/yr
Water exported:	+ ?	5	12,382.642	acre-ft/yr

**Master Meter and Supply Error Adjustments**

Pcnt:	5	<input checked="" type="radio"/>	<input type="radio"/>	Value:		acre-ft/yr
	2	<input checked="" type="radio"/>	<input type="radio"/>			acre-ft/yr
	3	<input checked="" type="radio"/>	<input type="radio"/>			acre-ft/yr

**WATER SUPPLIED: 74,089.084** acre-ft/yr

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

**AUTHORIZED CONSUMPTION**

Billed metered:	+ ?	8	65,197.120	acre-ft/yr
Billed unmetered:	+ ?	n/a	0.000	acre-ft/yr
Unbilled metered:	+ ?	n/a	0.000	acre-ft/yr
Unbilled unmetered:	+ ?	6	27.360	acre-ft/yr

**AUTHORIZED CONSUMPTION: 65,224.480** acre-ft/yr

Click here: ?  
for help using option buttons below

Pcnt:    Value: 27.360 acre-ft/yr

Use buttons to select percentage of water supplied OR value

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

**8,864.604** acre-ft/yr

**Apparent Losses**

Unauthorized consumption:	+ ?		185.223	acre-ft/yr
<b>Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed</b>				
Customer metering inaccuracies:	+ ?	8	658.557	acre-ft/yr
Systematic data handling errors:	+ ?		162.993	acre-ft/yr
<b>Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed</b>				
<b>Apparent Losses:</b>	?		<b>1,006.772</b>	acre-ft/yr

Pcnt: 0.25%   Value:  acre-ft/yr

1.00%   Value:  acre-ft/yr

0.25%   Value:  acre-ft/yr

**Real Losses (Current Annual Real Losses or CARL)**

**Real Losses = Water Losses - Apparent Losses: 7,857.832** acre-ft/yr

**WATER LOSSES: 8,864.604** acre-ft/yr

**NON-REVENUE WATER**

**NON-REVENUE WATER: 8,891.964** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

**SYSTEM DATA**

Length of mains:	+ ?	9	2,576.0	miles
Number of active AND inactive service connections:	+ ?	8	154,989	
Service connection density:	?		60	conn./mile main

Are customer meters typically located at the curbside or property line?  Yes

**Average length of customer service line has been set to zero and a data grading score of 10 has been applied**

Average operating pressure: + ? 5 74.0 psi

**COST DATA**

Total annual cost of operating water system:	+ ?	10	\$111,535,107	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+ ?	4	\$3.75	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+ ?	4	\$872.75	\$/acre-ft

Use Customer Retail Unit Cost to value real losses

**WATER AUDIT DATA VALIDITY SCORE:**

\*\*\* YOUR SCORE IS: 61 out of 100 \*\*\*

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

**PRIORITY AREAS FOR ATTENTION:**

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Water imported
- 2: Volume from own sources
- 3: Customer retail unit cost (applied to Apparent Losses)



# AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0

American Water Works Association

? Click to access definition  
+ Click to add a comment

**Water Audit Report for:** Eastern Municipal Water District (3310009 SRO)  
**Reporting Year:** 2017    7/2016 - 6/2017

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

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

To select the correct data grading for each input, determine the highest grade where the

**WATER SUPPLIED**

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

Volume from own sources:	+ ?	6	36,847.860	acre-ft/yr
Water imported:	+ ?	6	54,030.710	acre-ft/yr
Water exported:	+ ?	6	14,032.420	acre-ft/yr

**Master Meter and Supply Error Adjustments**

Pcnt:	3	<input checked="" type="radio"/>	<input type="radio"/>	Value:		acre-ft/yr
	2	<input checked="" type="radio"/>	<input type="radio"/>			acre-ft/yr
	3	<input checked="" type="radio"/>	<input type="radio"/>			acre-ft/yr

**WATER SUPPLIED:** 76,846.150 acre-ft/yr

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

**AUTHORIZED CONSUMPTION**

Billed metered:	+ ?	7	70,593.100	acre-ft/yr
Billed unmetered:	+ ?	n/a	0.000	acre-ft/yr
Unbilled metered:	+ ?	n/a	0.000	acre-ft/yr
Unbilled unmetered:	+ ?	5	32.040	acre-ft/yr

**AUTHORIZED CONSUMPTION:** 70,625.140 acre-ft/yr

Click here: ?  
for help using option buttons below

Pcnt:    Value: 32.040 acre-ft/yr

Use buttons to select percentage of water supplied OR value

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

6,221.010 acre-ft/yr

**Apparent Losses**

Unauthorized consumption:	+ ?		192.115	acre-ft/yr
<b>Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed</b>				
Customer metering inaccuracies:	+ ?	7	354.739	acre-ft/yr
Systematic data handling errors:	+ ?		176.483	acre-ft/yr
<b>Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed</b>				
<b>Apparent Losses:</b>	?		<span style="background-color: yellow;">723.337</span>	acre-ft/yr

Pcnt:  0.25%   Value:  acre-ft/yr

0.50%   Value:  acre-ft/yr

0.25%   Value:  acre-ft/yr

**Real Losses (Current Annual Real Losses or CARL)**

**Real Losses = Water Losses - Apparent Losses:** 5,497.673 acre-ft/yr

**WATER LOSSES:** 6,221.010 acre-ft/yr

**NON-REVENUE WATER**

**NON-REVENUE WATER:** 6,253.050 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

**SYSTEM DATA**

Length of mains:	+ ?	9	2,576.0	miles
Number of <u>active AND inactive</u> service connections:	+ ?	8	157,519	
Service connection density:	?		61	conn./mile main

Are customer meters typically located at the curbside or property line?  Yes (length of service line, beyond the property boundary, that is the responsibility of the utility)

**Average length of customer service line has been set to zero and a data grading score of 10 has been applied**

Average operating pressure:  74.0 psi

**COST DATA**

Total annual cost of operating water system:	+ ?	10	\$121,089,214	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+ ?	4	\$3.71	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+ ?	6	\$885.55	\$/acre-ft <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

**WATER AUDIT DATA VALIDITY SCORE:**

\*\*\* YOUR SCORE IS: 63 out of 100 \*\*\*

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

**PRIORITY AREAS FOR ATTENTION:**

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Water imported
- 2: Customer retail unit cost (applied to Apparent Losses)
- 3: Volume from own sources



# AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0

American Water Works Association

? Click to access definition  
+ Click to add a comment

Water Audit Report for: **Eastern Municipal Water District (3310009 SRO)**  
Reporting Year: **2018**      7/2017 - 6/2018

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

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

To select the correct data grading for each input, determine the highest grade where

### WATER SUPPLIED

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

Volume from own sources:	+ ?	7	34,988.040	acre-ft/yr
Water imported:	+ ?	7	65,369.400	acre-ft/yr
Water exported:	+ ?	7	17,592.890	acre-ft/yr

### Master Meter and Supply Error Adjustments

Pcnt:	Value:	acre-ft/yr
+ ? 4	<input type="radio"/> <input checked="" type="radio"/>	29.920
+ ? 4	-0.28% <input checked="" type="radio"/> <input type="radio"/>	
+ ? 3	-0.60% <input checked="" type="radio"/> <input type="radio"/>	

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

**WATER SUPPLIED:** **82,811.984** acre-ft/yr

### AUTHORIZED CONSUMPTION

Billed metered:	+ ?	7	78,470.600	acre-ft/yr
Billed unmetered:	+ ?	n/a	0.000	acre-ft/yr
Unbilled metered:	+ ?	n/a	0.000	acre-ft/yr
Unbilled unmetered:	+ ?	4	20.050	acre-ft/yr

Click here: ?  
for help using option buttons below

Pcnt:	Value:	acre-ft/yr
<input type="radio"/> <input checked="" type="radio"/>	20.050	

Use buttons to select percentage of water supplied  
OR  
value

**AUTHORIZED CONSUMPTION:** **78,490.650** acre-ft/yr

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

**4,321.334** acre-ft/yr

#### Apparent Losses

Unauthorized consumption: + ? **207.030** acre-ft/yr

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

Customer metering inaccuracies:	+ ?	7	473.666	acre-ft/yr
Systematic data handling errors:	+ ?		196.177	acre-ft/yr

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

**Apparent Losses:** **876.872** acre-ft/yr

Pcnt:	Value:	acre-ft/yr
0.25% <input checked="" type="radio"/> <input type="radio"/>		

0.60% <input checked="" type="radio"/> <input type="radio"/>		
0.25% <input checked="" type="radio"/> <input type="radio"/>		

### Real Losses (Current Annual Real Losses or CARL)

**Real Losses = Water Losses - Apparent Losses:** **3,444.462** acre-ft/yr

**WATER LOSSES:** **4,321.334** acre-ft/yr

### NON-REVENUE WATER

**NON-REVENUE WATER:** **4,341.384** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

### SYSTEM DATA

Length of mains:	+ ?	9	2,281.1	miles
Number of <u>active AND inactive</u> service connections:	+ ?	8	160,017	
Service connection density:	?		70	conn./mile main

Are customer meters typically located at the curbstop or property line?  Yes

(length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: + ? 4 **74.0** psi

### COST DATA

Total annual cost of operating water system:	+ ?	10	\$129,977,810	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+ ?	5	\$3.73	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+ ?	6	\$886.17	\$/acre-ft

Use Customer Retail Unit Cost to value real losses

### WATER AUDIT DATA VALIDITY SCORE:

\*\*\* YOUR SCORE IS: 68 out of 100 \*\*\*

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

### PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Water imported
- 2: Customer retail unit cost (applied to Apparent Losses)
- 3: Billed metered



# AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0  
American Water Works Association

Water Audit Report for: **Eastern Municipal Water District (3310009 SRO)**  
Reporting Year: **2019**      **7/2018 - 6/2019**

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

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

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

**WATER SUPPLIED**

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

Volume from own sources:	<input type="button" value="+"/> <input type="button" value="7"/>	40,545.710	acre-ft/yr	<input type="button" value="+"/> <input type="button" value="7"/>
Water imported:	<input type="button" value="+"/> <input type="button" value="7"/>	53,578.970	acre-ft/yr	<input type="button" value="+"/> <input type="button" value="7"/>
Water exported:	<input type="button" value="+"/> <input type="button" value="7"/>	18,362.290	acre-ft/yr	<input type="button" value="+"/> <input type="button" value="7"/>

Master Meter and Supply Error Adjustments

Pcnt:	Value:
5	-24.000
4	-0.18%
3	-1.20%

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

**WATER SUPPLIED:** **75,659.982** acre-ft/yr

**AUTHORIZED CONSUMPTION**

Billed metered:	<input type="button" value="+"/> <input type="button" value="9"/>	68,282.700	acre-ft/yr
Billed unmetered:	<input type="button" value="+"/> <input type="button" value="n/a"/>	0.000	acre-ft/yr
Unbilled metered:	<input type="button" value="+"/> <input type="button" value="n/a"/>	0.000	acre-ft/yr
Unbilled unmetered:	<input type="button" value="+"/> <input type="button" value="4"/>	17.740	acre-ft/yr

Click here:  for help using option

Pcnt:	Value:
	17.740

Use buttons to select percentage of water supplied **OR** value

**AUTHORIZED CONSUMPTION:** **68,300.440** acre-ft/yr

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

**7,359.542** acre-ft/yr

**Apparent Losses**

Unauthorized consumption:   **189.150** acre-ft/yr

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

Customer metering inaccuracies:	<input type="button" value="+"/> <input type="button" value="7"/>	829.345	acre-ft/yr
Systematic data handling errors:	<input type="button" value="+"/> <input type="button" value="5"/>	170.707	acre-ft/yr

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

**Apparent Losses:** **1,189.201** acre-ft/yr

Pcnt:	Value:
0.25%	

1.20%	
0.25%	

**Real Losses (Current Annual Real Losses or CARL)**

Real Losses = Water Losses - Apparent Losses:  **6,170.341** acre-ft/yr

**WATER LOSSES:** **7,359.542** acre-ft/yr

**NON-REVENUE WATER**

**NON-REVENUE WATER:**  **7,377.282** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

**SYSTEM DATA**

Length of mains:	<input type="button" value="+"/> <input type="button" value="9"/>	2,314.0	miles
Number of <u>active AND inactive</u> service connections:	<input type="button" value="+"/> <input type="button" value="8"/>	162,904	
Service connection density:	<input type="button" value="7"/>	70	conn./mile main

Are customer meters typically located at the curbside or property line?  (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure:    psi

**COST DATA**

Total annual cost of operating water system:	<input type="button" value="+"/> <input type="button" value="10"/>	\$129,435,936	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="+"/> <input type="button" value="7"/>	\$4.21	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	<input type="button" value="+"/> <input type="button" value="7"/>	\$841.65	\$/acre-ft <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

**WATER AUDIT DATA VALIDITY SCORE:**

\*\*\* YOUR SCORE IS: 73 out of 100 \*\*\*

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

**PRIORITY AREAS FOR ATTENTION:**

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Water imported
- 2: Volume from own sources
- 3: Unauthorized consumption



# AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0  
American Water Works Association

? Click to access definition  
+ Click to add a comment

**Water Audit Report for: Eastern Municipal Water District (3310009 SRO)**  
Reporting Year: **2020**      7/2019 - 6/2020

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

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

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

### WATER SUPPLIED

----- Enter grading in column 'E' and 'J' -----			
Volume from own sources:	+ ?	7	36,583.280 acre-ft/yr
Water imported:	+ ?	7	58,985.230 acre-ft/yr
Water exported:	+ ?	7	15,786.150 acre-ft/yr

### Master Meter and Supply Error Adjustments

	Pcmt:	Value:	
5		5.130	acre-ft/yr
4	-0.22%		acre-ft/yr
3	-3.00%		acre-ft/yr

**WATER SUPPLIED: 79,419.052** acre-ft/yr

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

### AUTHORIZED CONSUMPTION

Billed metered:	+ ?	9	74,299.500 acre-ft/yr
Billed unmetered:	+ ?	n/a	0.000 acre-ft/yr
Unbilled metered:	+ ?	n/a	0.000 acre-ft/yr
Unbilled unmetered:	+ ?	4	24.050 acre-ft/yr

Click here: ?  
for help using option

Pcmt:	Value:	
	24.050	acre-ft/yr

Use buttons to select percentage of water supplied  
**OR**  
value

**AUTHORIZED CONSUMPTION: 74,323.550** acre-ft/yr

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

**5,095.502** acre-ft/yr

#### Apparent Losses

Unauthorized consumption: + ?      198.548 acre-ft/yr

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

Customer metering inaccuracies:	+ ?	7	2,297.923 acre-ft/yr
Systematic data handling errors:	+ ?	5	185.749 acre-ft/yr

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

**Apparent Losses: 2,682.219** acre-ft/yr

Pcmt:	Value:	
0.25%		acre-ft/yr

3.00%		acre-ft/yr
0.25%		acre-ft/yr

### Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ?      **2,413.283** acre-ft/yr

**WATER LOSSES: 5,095.502** acre-ft/yr

### NON-REVENUE WATER

**NON-REVENUE WATER: 5,119.552** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

### SYSTEM DATA

Length of mains:	+ ?	9	2,338.6 miles
Number of <u>active AND inactive</u> service connections:	+ ?	8	165,627
Service connection density:	?		71 conn./mile main

Are customer meters typically located at the curbside or property line?      Yes

Average length of customer service line: + ?

(length of service line, beyond the property boundary, that is the responsibility of the utility)

**Average length of customer service line has been set to zero and a data grading score of 10 has been applied**

Average operating pressure: + ?      4      74.1 psi

### COST DATA

Total annual cost of operating water system:	+ ?	10	\$140,926,497	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+ ?	7	\$4.26	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+ ?	7	\$1,014.17	\$/acre-ft <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

### WATER AUDIT DATA VALIDITY SCORE:

**\*\*\* YOUR SCORE IS: 73 out of 100 \*\*\***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

### PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Water imported

2: Volume from own sources

3: Unauthorized consumption

# E

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## Appendix E: West San Jacinto Groundwater Basin Management Plan



**GROUNDWATER MANAGEMENT PLAN  
WEST SAN JACINTO GROUNDWATER BASIN**

**EASTERN MUNICIPAL WATER DISTRICT**

**JUNE 8, 1995**



**ADDENDUM**

**GROUNDWATER MANAGEMENT PLAN  
WEST SAN JACINTO GROUNDWATER BASIN  
Draft September 1994**

**MAY 1995**

**Eastern Municipal Water District**



**GROUNDWATER MANAGEMENT PLAN  
WEST SAN JACINTO GROUNDWATER BASIN  
September 1994 Draft**

**ADDENDUM - May 1995**

(Strikeout indicates deletion and  
underline indicates insertion.)

**Table of Contents**

Page iii      Last item under Section 7: ~~TRANSFER~~ EXCHANGE OF AGRICULTURAL AND OTHER NON-POTABLE USERS USES FROM GROUNDWATER TO RECLAIMED WATER.

**Section 1 - Executive Summary**

Page 1-1      1st ¶, 3rd bullet item: • ~~structural adequacy~~ capacity of the delivery system is limited;

Last ¶, last sentence: One such action that could adversely affect EMWD's local water resources is a claim recently filed by a neighboring water district ~~Orange County Water District~~, which underscored the urgent need for action by EMWD to protect the water resources within its service area for use by EMWD consumers.

Page 1-3      2nd ¶, last line: ... ~~Edgemont-Gardens~~ Moreno Valley Mutual Water Company ...

Page 1-4      2nd ¶, 2nd and 3rd sentences: Water requirements by these subagencies ~~varies~~ vary depending on development and the availability of local supplies. These entities and public agencies include the Brownlands Mutual Water Company, ~~city~~ City of Perris, ~~Edgemont-Gardens~~ Moreno Valley Mutual Water Company and Nuevo Water Company.

Page 1-5      2nd ¶: **Local Planning and Regulatory Agencies.** Other local agencies that may have a significant influence on groundwater management include:

Riverside County Flood Control and Water Conservation Agency.  
This agency plans, constructs and operates flood control and water



conservation facilities in Riverside County. The construction of ... significant impact. This agency issues the following permits:

- a. Separate Application for Flood Plain Management (County Ordinance No. 458)
- b. Encroachment Permits

~~Same ¶, last section: Riverside County Health Department. County of Riverside Department of Environmental Health. The County of Riverside Department of Environmental Health will review NPDES and solid waste facility permits and compatibility of well construction policies and well abandonment and destruction programs with County Ordinance No. 682. EMWD fully intends to coordinate with the County when development of well construction policies and development of a well abandonment and destruction program are developed as part of Plan implementation. The Riverside County Health Department will review water supply and wastewater plans that could be embodied in the groundwater management plan.~~

- Page 1-6 4th ¶: Groundwater production estimates for 1993 were estimated from annual reports of groundwater production on file at the State Water Resources Control Board and from Southern California Association of Governments (SCAG) SCAG land use.
- Page 1-7 1st ¶, add to end of ¶: Non-irrigated, vacant land will accommodate most of the urbanization growth in the area.
- Page 1-8 2nd ¶, 12th line: ... such as SWP water- and demineralization.  
3rd ¶, 1st line: ... water distribution ~~plan~~ system ...
- Page 1-9 1st ¶, 5th line: 3,360 acre-ft/yr of potable water.
- Page 1-14 3rd ¶, **Ultimate Plan Description.** The groundwater management plan consists of a series of elements that, when implemented, will achieve the management plan goal stated above within the constraints of this plan. Involuntary groundwater production assessments and groundwater pumping restrictions are not authorized as part of this management plan except as necessary to prevent unauthorized production of water stored by EMWD.
- Page 1-15 2nd ¶, **Monitoring of Groundwater Level and Quality,** 3rd sentence: EMWD will measure groundwater levels and quality from select private wells. EMWD's measurements will not interfere with the well owners' use of the wells. EMWD's measurements will be provided to participating well owners free of charge upon request.



3rd ¶, **Development of Well Construction Policies**, last sentence: These policies will be related to water quality and health protection only and will not limit, or suspend, or unreasonably increase the cost of current or future groundwater production by existing groundwater producers private landowners for use within the plan boundary.

Page 1-16 2nd ¶, **Exchange of Agricultural and Other Non-potable Groundwater Production to Municipal Use**, 1st sentence: The intent of this element is to increase the groundwater yield available for municipal use by either retiring voluntary retirement of agricultural and non-potable demands or by voluntarily substituting reclaimed water for groundwater used for agricultural and other non-potable uses.

Page 1-17 Top of page, 4th bullet item: • Administration and Monitoring of Well Construction, Abandonment and Destruction

Page 1-20 2nd ¶, **Financing the Groundwater Management Plan**: The cost of implementing and operating the West San Jacinto Groundwater Basin management plan ~~should~~ shall be borne by municipal water users in the management area... There could be some cost to local groundwater producers if groundwater replenishment is necessary due to groundwater overdraft and groundwater producers choose to participate in the groundwater replenishment program in order to access supplemental water supplies instead of curtailing their own groundwater production or enjoining the groundwater production of others in the affected subbasin. In the event of continued overdraft, an equitable cost sharing plan should be developed to allocate costs among EMWD, other benefitted municipal water suppliers, and participating groundwater producers to correct the overdraft.

Page 1-21 1st ¶, last line: The following tasks will be completed in Phase 1 1.

2nd ¶, last 2 sentences under **Phase 2 Refine the Ultimate Groundwater Management Plan**: ... management plan. The complexity and ...

Page 1-22 Last ¶, **Schedule and Cost**. The cost to complete Phases 1 and 2 is estimated to range between 3 to 5 million dollars. The cost to complete Phase 3 cannot be estimated until the ultimate plan is described at the conclusion of Phase 2. The cost to implement and operate the Groundwater Management Plan is estimated to be between \$50 million and \$70 Million. Estimates at this time are very rough and they will be refined when the specific projects are identified and designed.



## Section 2 - Introduction

Page 2-1 1st ¶, 3rd bullet item: • ~~structural adequacy~~ capacity of the delivery system is limited;

Last ¶, last sentence: One such action that could adversely affect EMWD's local water resources is a claim recently filed by a neighboring water district Orange County Water District, which underscored the urgent need for action by EMWD to protect the water resources within its service area for use by EMWD consumers.

Page 2-4 2nd ¶ under **Approach to Development of Groundwater Management Plan**, second sentence: These goals can be modified during the plan development process within the constraints of this plan. These goals will determine the magnitude of the plan, beneficiaries of the plan, and will guide the technical work that shapes the plan. Involuntary groundwater production assessments and groundwater pumping restrictions are not authorized as part of this management plan except as necessary to prevent unauthorized production of water stored by EMWD.

Page 2-5 Mid-page, 3rd bullet item: ... plan goals; ~~and~~

Page 2-6 Last ¶, last line: ~~Dr.~~ Mr. P. Ravishanker.

## Section 3 - Existing Water Resources Framework

Page 3-2 2nd ¶, 5th line: ... ~~Edgement Gardens~~ Moreno Valley Mutual Water Company, ...

5th ¶, 1st line: ~~Edgement Gardens~~ Moreno Valley Mutual Water Company.

Page 3-3 Substitute section titled "**Colorado River Water**" with the following:  
MWD has water delivery contracts for Colorado River water with the U.S. Department of the Interior for 1.212 million acre-feet per year (MAF/Y) and an additional 180,000 acre-feet per year (AF/Y) of surplus water. The capacity of MWD's Colorado River Aqueduct is 1,800 cubic feet per second or 1.3 MAF/Y. However, as a result of the 1964 U.S. Supreme Court decree in Arizona v. California, MWD's dependable supply of Colorado River water was reduced to less than 550,000 AF/Y. This reduction in dependable supply occurred with the commencement of Colorado River deliveries by the Central Arizona Project.  
MWD has a priority to divert 550,000 AF/Y of California's 4.4 MAF/Y basic apportionment under its water delivery contract with the Secretary of the



Interior. In addition, MWD has entered into agreements with other agencies serving Colorado River Water for agricultural purposes in the California desert to increase its dependable supplies. Water use by holders of present perfected rights (Indian reservations, towns, and other individuals along the Colorado River that predate MWD's rights) is estimated to reduce dependable diversions by about 30,000 AF/Y. Conveyance losses along the Colorado River Aqueduct of 10,000 AF/Y further reduce the amount of Colorado River water received in the coastal plain. MWD's dependable Colorado River supplies are projected to total 626,000 acre-feet upon completion of a cooperative water conservation program with Imperial Irrigation District.

Based on an annual determination, the Secretary of the Interior has allowed MWD in recent years to divert Colorado River water apportioned to, but unused, by Arizona and Nevada. Arizona and Nevada are not expected to use their full apportionments until the years 2036 and 2005, respectively. MWD is pursuing several projects to increase the reliability of its Colorado River supplies.

Page 3-4

Substitute the section titled "**State Project Water**" with the following:  
SWP water comes from Northern California, is transported through the Sacramento-San Joaquin Delta, and is delivered to MWD through the California Aqueduct. MWD, one of 29 agencies that have contracted with the State for SWP supplies, holds a contract for entitlement to 2.01 MAF/Y, or nearly half of the total contracted entitlement of 4.23 MAF/Y. Initial SWP facilities completed in the early 1970s have produced yields adequate to meet just over half of the total contracted entitlement on a dependable basis. While it was intended that addition SWP facilities would be constructed to meet contractor demands as they increased, this has not occurred. In addition, constraints placed on SWP operations in the Delta under State and federal Endangered Species acts have reduced available SWP supplies. However, the December 1994 consensus agreement on interim standards for Delta flows and water quality brings more certainty to SWP supply availability during the next three years, and is the foundation for immediate initiation of a process for identifying a long-term solution to water supply and fishery problems in the Delta. In the future, if additional facilities are not completed, availability of water from the SWP is expected to decrease due to increased use of water in Northern California, and increasing allocations of water for environmental needs in the Bay-Delta.

Page 3-9

1st ¶, 3rd line: The proposed regulations are included in Appendix A-2 A-4.

Page 3-10

4th ¶, 1st line: A summary of existing and proposed water quality standards is presented in Appendix A-3 A-2.



Last ¶, 1st section: **Riverside County Flood Control and Water Conservation Agency**. This agency ... Riverside County. The construction of ... significant impact. This agency issues the following permits:

- a. Separate Application for Flood Plain Management (County Ordinance No. 458)
- b. Encroachment Permits

Last ¶, last section: ~~Riverside County Health Department~~. County of Riverside Department of Environmental Health. The County of Riverside Department of Environmental Health will review NPDES and solid waste facility permits and compatibility of well construction policies and well abandonment and destruction programs with County Ordinance No. 682. EMWD fully intends to coordinate with the Department when development of well construction policies and development of a well abandonment and destruction program are developed as part of Plan implementation. The Riverside County Health Department will review water supply and wastewater plans that could be embodied in the groundwater management plan.

#### **Section 4 - Groundwater Resources in the West San Jacinto Basin**

Page 4-5 1st ¶, insert after 1st sentence: ... on the north. The San Jacinto River flows through this subbasin include tributary flows from Potrero Creek and Laborde Canyon.

2nd ¶, 3rd line: San Jacinto ~~Creek~~ River

Table 4-2 10th line of data is a duplicate: ~~0 0 0 0 800 1,200 2,000~~

Page 4-9 5th ¶: The total outflow in the basin, from all sources, ranges from a low of zero ~~1,300~~ acre-ft/yr from the Menifee ~~San Jacinto Lower Pressure~~ subbasin, to a high of 4,000 ~~4,600~~ acre-ft/yr for the Lakeview ~~Menifee~~ subbasin. The total outflow for the management area is about 10,200 ~~14,800~~ acre-ft/yr.

Page 4-10 3rd ¶, 5th line: San Jacinto ~~Creek~~ River

Page 4-14 2nd ¶, 1st sentence: The principle sources of groundwater in this basin are underflow from the San Jacinto Lower Pressure, Perris South I, Perris South II subbasins, storm flow percolation in the San Jacinto River Creek which includes flow from Potrero Creek and Laborde Canyon tributaries, and runoff from the Lakeview Mountains and Bernasconi Hills.



2nd ¶, insert: Most of the groundwater in the basin is sodium chloride in character. Potentially contaminated surface water flows from Potrero Creek and Laborde Canyon may impact groundwater quality in the basin. The Casa Loma fault ...

Page 4-16 1st ¶, last sentence under **Future Groundwater Quality**: ... These estimates, however, are based on a model that:

- has not been calibrated for TDS or nitrate;
- has each subbasin is represented by only one node and thus the resolution of the analysis is crude; and
- has future water supply and wastewater plans ~~that were used in these studies that~~ are not representative of the future plans.

Last ¶, last sentence: The planning tool would consist of groundwater flow and simulation models similar to those models ~~that were developed and that are in current use in other basins.~~ to develop the Chino Basin Water Resources Management Plan (Montgomery Watson & Wildermuth, Mark J., 1992; Montgomery Watson & Wildermuth, Mark J., 1993).

## Section 5 - Future Water Supply and Wastewater Flows

Page 5-1 1st ¶, Reclamation Plant List: ~~Temeseal~~ Temecula Valley

1st ¶, add following last sentence: Non-irrigated, vacant land will accommodate most of the urbanization growth in the area.

Last ¶, 1st line: seasonal discount are: to; achieve ...

Page 5-5 2nd ¶, 2nd sentence: ~~All agricultural demands would be satisfied with reclaimed water by the year 2010.~~

## Section 6 - Groundwater Management Goals

Page 6-1 3rd ¶, 2nd sentence: Much of the rRemaining agricultural water demand will be converted to reclaimed water.

Page 6-2 2nd sentence: The negative impacts, if any, of a groundwater management plan on these users must be minimized; and the ability of these groundwater producers to continue producing groundwater for beneficial use must be preserved ~~or equitably replaced~~.



## Section 7 - Elements of Groundwater Management Plan

- Page 7-2 2nd ¶, 2nd sentence: The monitoring of groundwater quality includes the collection and review of groundwater quality data that can be used to assess current and future trends in groundwater quality, and to evaluate groundwater quality response to groundwater management activities and climate. EMWD's monitoring activities will not interfere with the well owners' use of the wells. EMWD's monitoring data will be provided to participating well owners free of charge upon request.
- Page 7-3 Insert new ¶ following 3rd bullet item: EMWD will coordinate with the County of Riverside Department of Environmental Health when development of well construction policies and development of a well abandonment and destruction program are developed as part of the Groundwater Management Plan implementation.
- Page 7-8 3rd ¶, last sentence: ... Reclaimed water can be recharged in the San Jacinto Lower Pressure, Menifee and Winchester subbasins by injection. Recharge of reclaimed water will be implemented in a manner that avoids adverse impacts to construction, operation and use of wells by private landowners. Where reclaimed water recharge interferes with such construction, operation, or use of a well, suitable arrangements will be made for EMWD to provide alternative water supplies to meet both the short-term and long-term needs of the impacted landowner, or for EMWD to provide monetary compensation for the interference caused by EMWD's reclaimed water recharge activities.
- Page 7-9 Last bullet item: Water harvesting in the Lakeview subbasin. Storm water captured in EMWD's Mystic Lake project could be captured and conveyed to test recharge basins in the Lakeview subbasin.
- 1st ¶ under **Recovery of Contaminated Groundwater**: ... Other treatment technologies may be required if water quality conditions change or new types of contamination are discovered. Recovery of contaminated groundwater will be implemented in a manner that avoids adverse impacts to construction, operation and use of wells by private landowners. Where groundwater recovery activities interfere with such construction, operation or use of a well, suitable arrangements will be made for EMWD to provide alternative water supplies to meet both the short-term and long-term needs of the impacted landowner, or for EMWD to provide monetary compensation for the interference caused by EMWD's groundwater recovery activities.



Page 7-14 3rd ¶: ... Limited conjunctive use in these subbasins could be done in conjunction with groundwater treatment. Conjunctive use activities will be implemented in a manner that avoids adverse impacts to construction, operation and use of wells by private landowners. Where conjunctive use activities interfere with such construction, operation, or use of a well, suitable arrangements will be made for EMWD to provide alternative water supplies to meet both the short-term and long-term needs of the impacted landowner, or for EMWD to provide monetary compensation for the interference caused by EMWD's conjunctive use activities.

Page 7-15 2nd ¶, **EXCHANGE OF AGRICULTURAL AND OTHER NON-POTABLE USERS USES FROM GROUNDWATER TO RECLAIMED WATER.** The exchange of agricultural and other non-potable groundwater production to municipal uses can occur through

- Voluntary retirement of agricultural lands, that is, the conversion of agricultural lands to non-agricultural uses; and
- by voluntarily substituting other supplies such as reclaimed water.

## Section 8 - Groundwater Management Plan

Page 8-3 4th ¶, 3rd line: ... eity City of Perris ...

4th ¶, 4th line: ... ~~Edgemont Gardens~~ Moreno Valley Mutual Water Company, ...

2nd ¶, **ULTIMATE PLAN DESCRIPTION**, 1st sentence: The groundwater management plan consists of a series of elements that, when implemented, will achieve the management plan goal stated above within the constraints of this plan: Involuntary groundwater production assessments and groundwater pumping restrictions are not authorized as part of this management plan except as necessary to prevent unauthorized production of water stored by EMWD.

Page 8-4 2nd ¶, **Monitoring of Groundwater Level and Quality**, beginning with 3rd sentence: EMWD will measure groundwater levels and quality from select private wells. EMWD's measurements will not interfere with the well owners' use of the wells. EMWD's measurements will be provided to participating well owners free of charge upon request.

3rd ¶, 2nd line: ... Riverside County ~~Health Department~~ Department of Environmental Health ...



Last ¶, 2nd line: ... Riverside County ~~Health Department~~ Department of Environmental Health ...

Last ¶, last sentence: These policies will be related to water quality and health protection only and will not limit, or suspend, or unreasonably increase the cost of current or future groundwater production by existing groundwater producers private landowners for use within the plan boundary.

Page 8-5 1st ¶, 5th line: ... Riverside County ~~Health Department~~ Department of Environmental Health ... (Riverside Co. Dept. Environmental Health)

3rd ¶, **Exchange of Agricultural and Other Non-Potable Groundwater Production to Municipal Use**, 1st sentence: The intent of this element is to increase the groundwater yield available for municipal use by either retiring voluntary retirement of agricultural and non-potable demands or by voluntarily substituting reclaimed water for groundwater used for agricultural and other non-potable uses.

Page 8-11/12 2nd ¶ of **Financing the Groundwater Management Plan**: The cost of implementing and operating the West San Jacinto Groundwater Basin management plan ~~should~~ shall be borne by municipal water users in the management area... There could be some cost to local groundwater producers if groundwater replenishment is necessary due to groundwater overdraft and groundwater producers choose to participate in the groundwater replenishment program in order to access supplemental water supplies instead of curtailing their own groundwater production or enjoining the groundwater production of others in the affected subbasin. In the event of continued overdraft, an equitable cost sharing plan should be developed to allocate costs among EMWD, other benefitted municipal water suppliers, and participating groundwater producers to correct the overdraft.

Page 8-12 3rd ¶: The benefits and costs associated with the groundwater management plan should be accounted for locally, that is, by subbasin or some other geographic unit, to insure the benefits and costs are equitably distributed among municipal water users and other voluntary participants.

Page 8-15 2nd ¶, 3rd line: Prepare Project Specific Environmental ~~Impact Report~~ Reviews.

3rd ¶: **Task 2-2 Prepare Project Specific Environmental ~~Impact Reports~~ (EIR) Reviews.** EIR's will be prepared CEQA reviews will be performed for the implementation of specific groundwater management elements projects that are developed in Phase 1. This Task consists of the following subtasks.



~~Prepare and Distribute Notice of Preparation (NOP). The NOP will be prepared based on the results of initial environmental study prepared in Task 1-5 and the facility and operational plans developed in Task 2-1. The final scope of work for the EIR studies will be based on the NOP and comments received on the NOP.~~

Initial Study. CEQA reviews will be done on each project proposed under the Groundwater Management Plan. An Initial Study will be done such that the need for either a Negative Declaration or an EIR can be determined, based on project-specific design parameters and project site characteristics.

Estimate Environmental Impacts and Develop Mitigation Plans. This work will could include: biological assessments, archaeological assessments, impact assessments and development of mitigation plans as needed on a project-specific basis.

Page 8-16    3rd line: ~~Prepare and Distribute Draft EIR(s)~~ CEQA Documents and Notices.  
4th line: ~~Conduct Meetings, Public Hearings and Respond to Comments.~~  
5th line: ~~Finalize EIR(s).~~

Page 8-19    Last ¶: The cost to complete Phases 1 and 2 is estimated to range between 2 to 3 million dollars. The cost to complete Phase 3 cannot be estimated until the ultimate plan is described at the conclusion of Phase 2. The cost to implement and operate the Groundwater Management Plan is estimated to be between \$50 million and \$70 million. Estimates at this time are very rough and they will be refined when the specific projects are identified and designed.

## References

~~Montgomery Watson, Wildermuth, Mark J., "Final Task 4 Memorandum, New Planning Model Implementation Plan", prepared for Santa Anna Watershed Project Authority, May 1992~~

~~Montgomery Watson, Wildermuth Mark J., "Draft task 6 Memorandum, Develop Three Dimensional Groundwater Model, prepared for Santa Anna Watershed Project Authority, November 1993~~

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**DRAFT**  
**GROUNDWATER MANAGEMENT PLAN**  
**WEST SAN JACINTO GROUNDWATER BASIN**

Prepared for

**EASTERN MUNICIPAL WATER DISTRICT**

SEPTEMBER 1994

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*SECTION 1*

**SECTION 1**  
**EXECUTIVE SUMMARY**

**THE NEED FOR GROUNDWATER MANAGEMENT**

EMWD, together with the majority of water purveyors in Southern California, have been heavily relying on imported supplies from Metropolitan Water District of Southern California (Metropolitan). Recently, Metropolitan's ability to supply the ever-growing needs of Southern California has become increasingly unreliable due to the following reasons:

- demand for water is continuing to increase;
- environmental constraints at the point of origin may limit the water available for export;
- structural adequacy of the delivery system is limited;
- climatological uncertainties can limit delivery; and
- inadequate local storage facilities.

EMWD could purchase imported water from Metropolitan to meet these projected municipal demands. Metropolitan's sources, however, are not reliable and will be very expensive in the future. Metropolitan, with its current planning and future projects, will experience shortages in four of five years, with shortages reaching as high as 30 percent. The cost of imported water from Metropolitan is currently (July 1994) \$412 per acre-ft for treated water and is projected to reach about \$1,100 per acre-ft by 2010. These rising costs and lack of water to meet all of the demands has encouraged some local agencies in Southern California to claim water rights in the service areas of other agencies. One such action that could adversely affect EMWD's local water resources is a claim recently filed by Orange County Water District, which underscores the urgent need for action by EMWD to protect the water resources within its service area for use by EMWD consumers.



SECTION 1  
EXECUTIVE SUMMARY

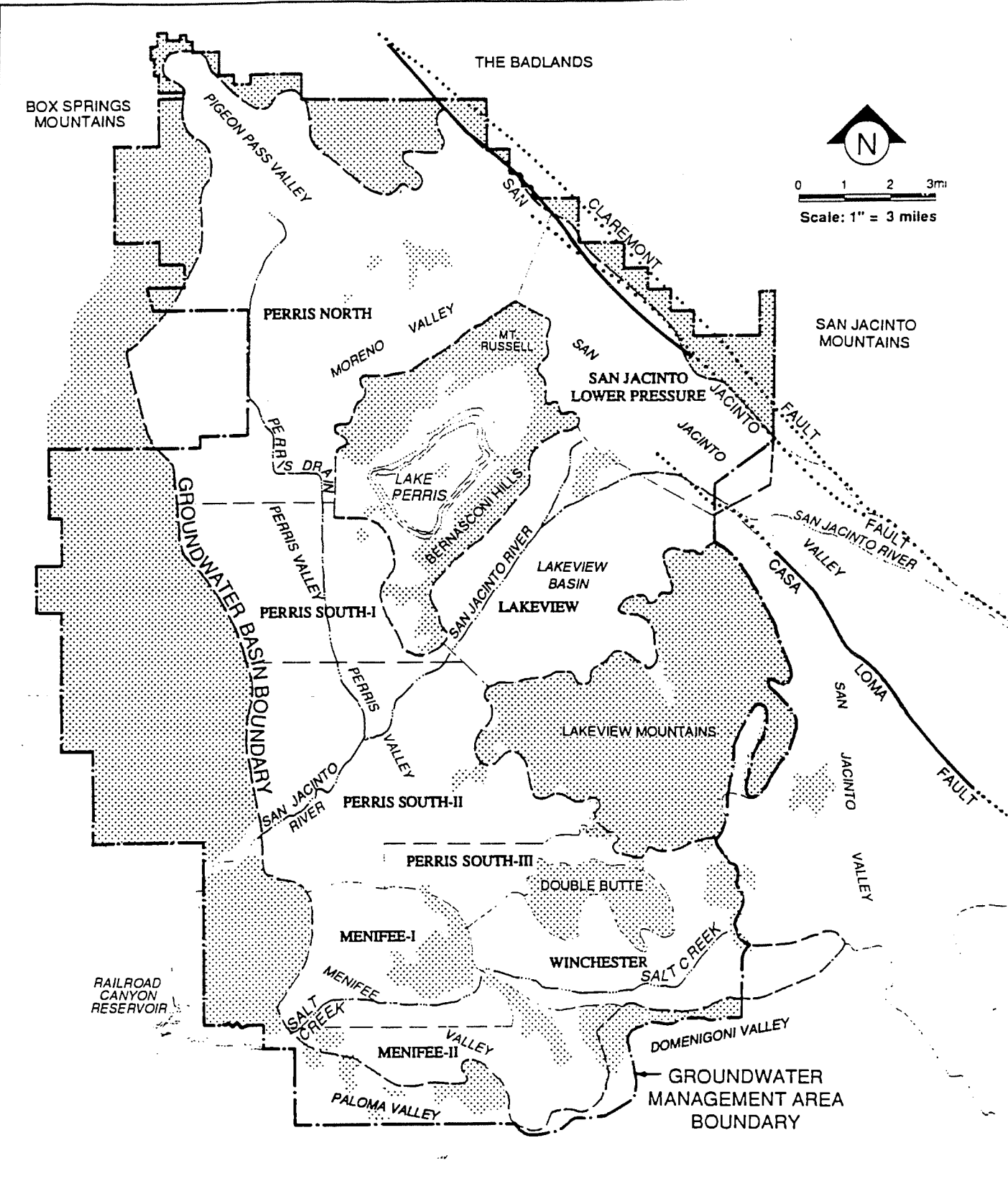
The West San Jacinto Groundwater Basin underlies a large portion of the Eastern Municipal Water District (EMWD). The West San Jacinto Groundwater Basin includes the Perris North, Perris South, Menifee, Winchester, Lakeview and the San Jacinto Lower Pressure subbasins. The location of these subbasins is shown in Figure 1-1. This area is experiencing rapid land use conversion from agriculture to urban uses. Total municipal water demands are expected to increase from 47,000 acre-ft/yr in 1995, to 112,000 acre-ft/yr in 2010.

Three sources of water supply for these demands can be considered: groundwater, imported water and reclaimed water. Groundwater in the West San Jacinto Groundwater Basin, for the most part, is of poor quality due to natural causes and irrigated agriculture. Most of the groundwater resources cannot be used as municipal supply due to poor quality - the groundwater quality either violates drinking water standards or is too high in total dissolved solids (TDS) or other water quality constituents to be discharged after municipal use. To meet increasing demands, EMWD could purchase imported water from Metropolitan. However, availability and costs might limit this alternative. EMWD has reclaimed water resources that could be used to meet agricultural demands and non-potable municipal demands. Reclaimed water cannot be directly used for potable demand unless, after groundwater recharge and dilution, it meets Title 22 requirements (State Department of Health Services Reclaimed Water Regulations). Additionally, groundwater treatment practices can convert non-potable water supplies to potable supplies.

The availability and reliability of the total water supply can be improved through the joint, optimized (conjunctive) management of all the water supply sources. It is the intent of Assembly Bill AB 3030, which was incorporated into the Water Code in 1992 (Part 2.75 commencing with Section 10750 of Division 6) with amendments by AB 1152 of 1993, to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions. Authorization to adopt and implement a plan is contained in the following section of AB 3030:

"§10753 (a) Any local agency, whose service area includes a groundwater basin, or a portion of a groundwater basin, that is not subject to groundwater management pursuant to other provisions of law or a court order, judgment, or decree, may, by ordinance, or by resolution if the local agency is not authorized to act by ordinance, adopt and implement a groundwater management plan pursuant to this part within all or a portion of its service area."

The components of a groundwater management plan may include the following:



**LEGEND:**




-  NONWATER-BEARING PORTION
-  KNOWN FAULTS
-  INFERRED OR CONCEALED FAULTS

Figure 1-1  
**LOCATION MAP**

REFERENCE: DEPARTMENT OF WATER RESOURCES, SOUTHERN DISTRICT, 1977.

**SECTION 1  
EXECUTIVE SUMMARY**

- "§10753.7 (a) The control of saline water intrusion.  
(b) Identification and management of wellhead protection areas and recharge areas.  
(c) Regulation of the migration of contaminated groundwater.  
(d) The administration of a well abandonment and well destruction program.  
(e) Mitigation of conditions of overdraft.  
(f) Replenishment of groundwater extracted by water producers.  
(g) Monitoring of groundwater levels and storage.  
(h) Facilitating conjunctive use operations.  
(i) Identification of well construction policies.  
(j) The construction and operation by the local agency of groundwater contamination cleanup, recharge, storage, conservation, water recycling, and extraction projects.  
(k) The development of relationships with state and federal regulatory agencies.  
(l) The review of land use plans and coordination with land use planning agencies to assess activities which create a reasonable risk of groundwater contamination."

EMWD's Board of Directors adopted resolution No. 3039 to develop a Groundwater Management Plan for the West San Jacinto Groundwater Basin and published a Notice of Intent on August 25, 1993. The groundwater management plan for the West San Jacinto Groundwater Basin is being developed under the authority of Assembly Bill 3030 (AB 3030), which allows a local water agency to take the lead in development of a plan. Up to two years can be taken for development of a plan. Local water purveyors, both public and private, have been involved in development of the plan. There are approximately forty-five (45) pumpers in the area. Public meetings, workshops and hearings were held during the preparation of the draft plan. Cooperative agreements with EMWD have already been signed by Nuevo Water Company, Edgemont Gardens Mutual Water District and the City of Perris.

## **EXISTING WATER RESOURCES FRAMEWORK**

### **Eastern Municipal Water District**

EMWD encompasses over 540 square miles in the western portion of Riverside County as shown on Figure 1-2. It is bounded on the west by Western Municipal Water District, on the north by mountains which approximately parallel the San Bernardino County boundary, on the east by the San Jacinto Mountains, and on the south by mountains which parallel the San Diego County line. Only about half of the area within EMWD's boundary receives water service at this time. EMWD is the only wastewater treatment entity in the West San Jacinto groundwater management area.

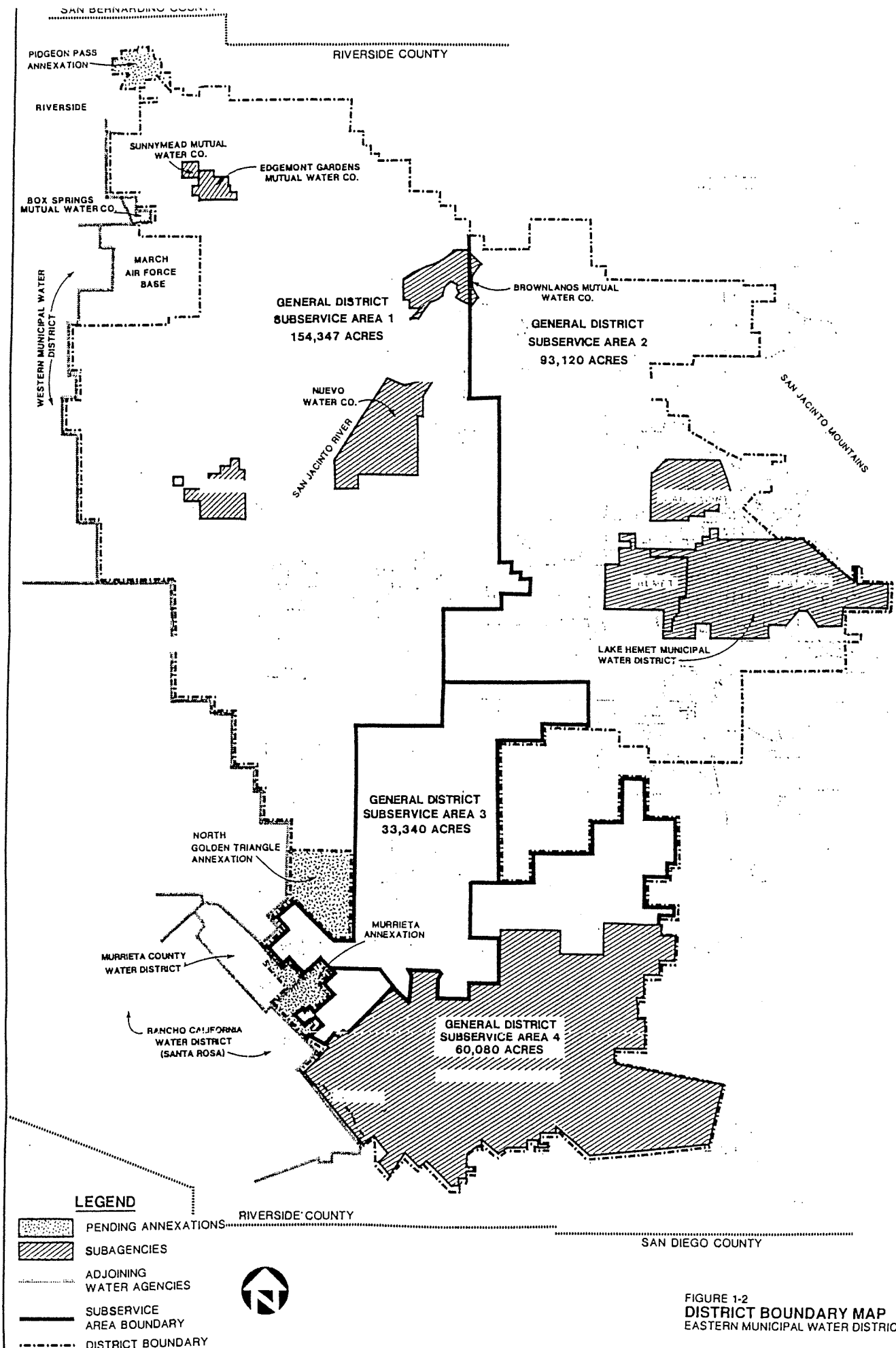


FIGURE 1-2  
DISTRICT BOUNDARY MAP  
EASTERN MUNICIPAL WATER DISTRICT

**SECTION 1  
EXECUTIVE SUMMARY**

EMWD has divided its service area into four subservice areas for the distribution of water as shown on Figure 1-2. The boundary of the groundwater management area is approximately the same as EMWD Service Area 41, which is supplied by Metropolitan's Mills and Skinner treatment plants. The management area includes the cities of Moreno Valley and Perris, and the unincorporated areas in western Riverside County such as the communities of Lakeview, Nuevo, Sun City and Winchester.

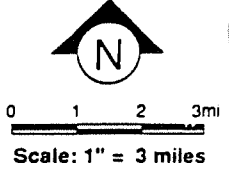
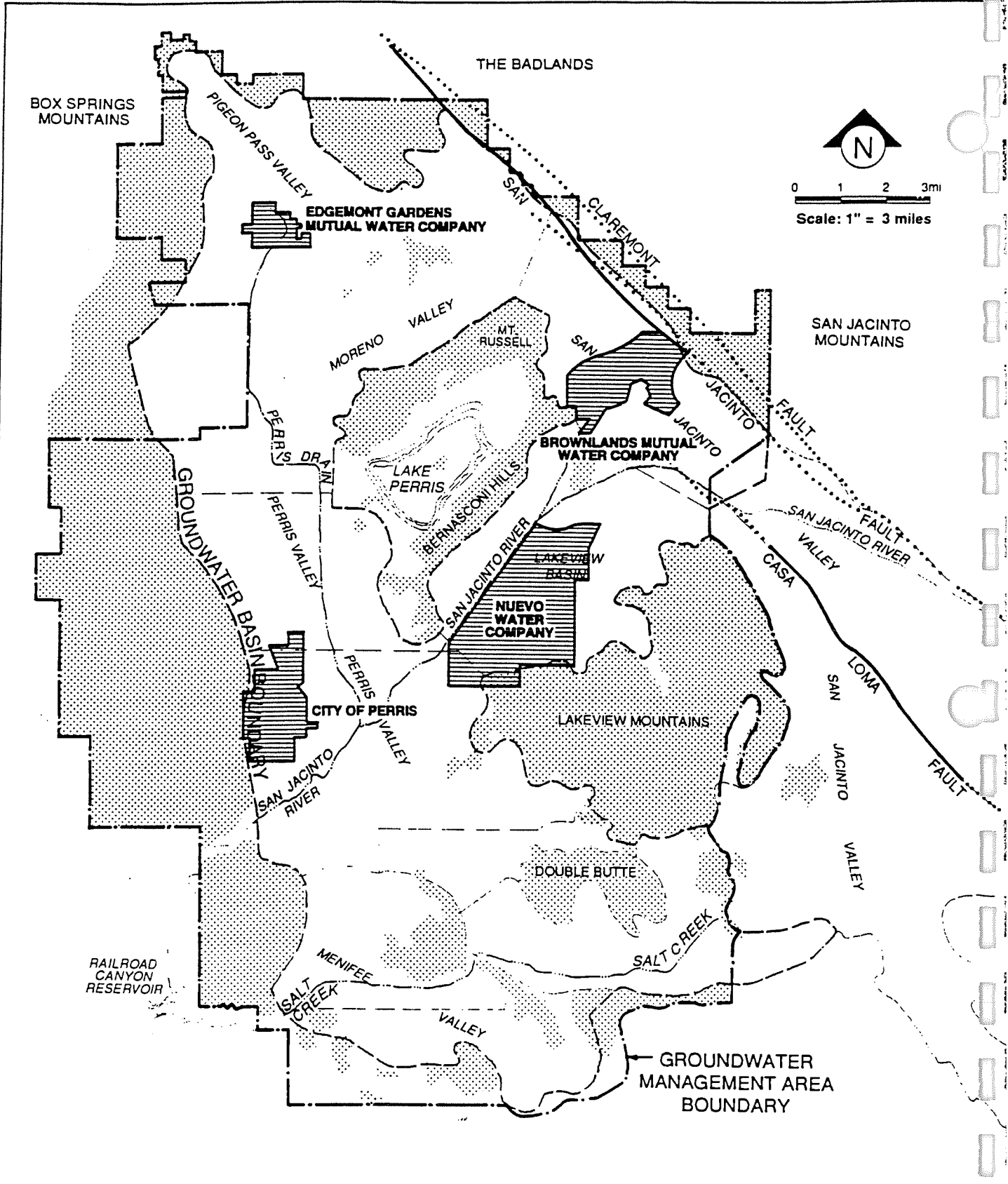
EMWD has agreed to supply water on a wholesale basis to eight public entities and companies, four of which are in the West San Jacinto Groundwater Management area. Water requirements by these subagencies varies depending on development and the availability of local supplies. These entities and public agencies include the Brownlands Mutual Water Company, city of Perris, Edgemont Gardens Mutual Water Company and Nuevo Water Company. The location of these entities within the West San Jacinto Groundwater Management area are shown in Figure 1-3.

**Metropolitan Water District of Southern California**

Metropolitan Water District of Southern California (Metropolitan) is a wholesale water agency serving supplemental imported water to 27 member cities and water agencies in portions of Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura counties. This service area has a current population of about 15 million people. Approximately one-half of the total water used throughout the entire Metropolitan service area is imported water purchased from Metropolitan to supplement the local water supplies of the study area. Metropolitan obtains imported supplies from the Colorado River and the State Water Project (SWP). Figure 1-4 shows the locations of Metropolitan's, state and EMWD imported water facilities.

**Regulation of Wastewater**

The West San Jacinto Groundwater Management plan will be influenced by the plans and policies of the Federal Environmental Protection Agency, State Water Resources Control Board, California Regional Water Quality Control Board, Santa Ana Region as well as the state and local health departments.



- LEGEND:**
- NONWATER-BEARING PORTION
  - KNOWN FAULTS
  - INFERRED OR CONCEALED FAULTS

Figure 1-3  
**SUBAGENCIES**

REFERENCE: VOL. II, EMWD WATER FACILITIES MASTER PLAN; BLACK & VEATCH, JMM; OCT, 1990.

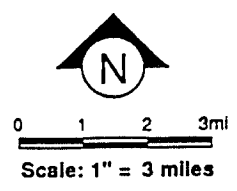
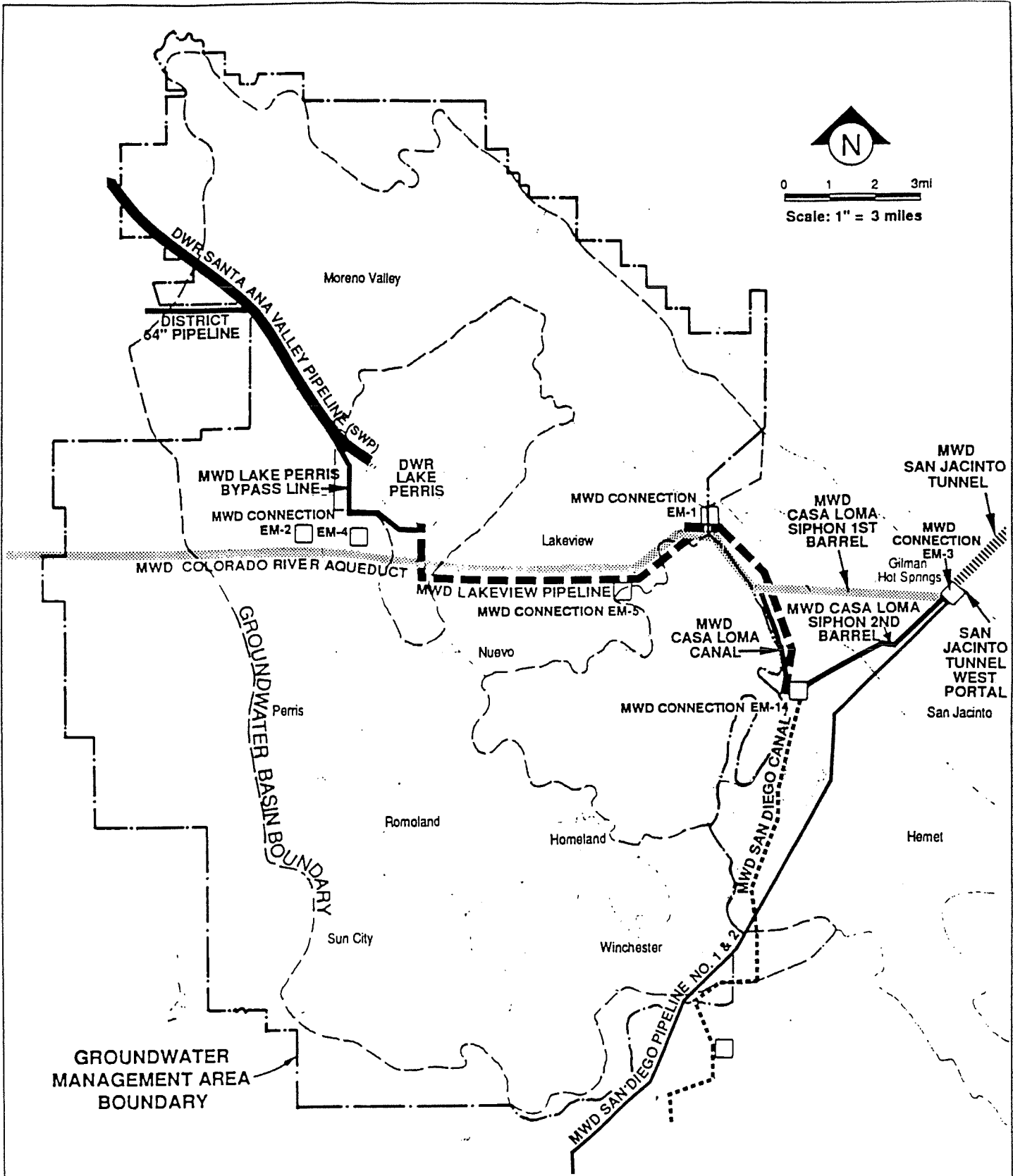


Figure 1-4  
**IMPORTED  
 WATER  
 FACILITIES**

REFERENCE: EMWD WATER FACILITIES MASTER PLAN, FIG. 4-3: SOURCES OF SUPPLY MAP, OCTOBER, 1990.



SECTION 1  
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## Regulation of Drinking Water

Drinking water quality standards are enforced in California by California Department of Health Services (DHS). Groundwater developed in the groundwater management plan for municipal uses must satisfy the standards described in Title 22 of California Code of Regulations.

## Local Planning and Regulatory Agencies

Other local agencies that may have a significant influence on groundwater management include:

Riverside County Flood Control and Water Conservation District. This agency plans, constructs and operates flood control and water conservation facilities in Riverside County. The construction of flood control and water conservation facilities affects the volume of recharge to groundwater and thus, has a potentially significant impact.

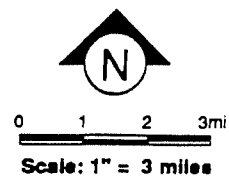
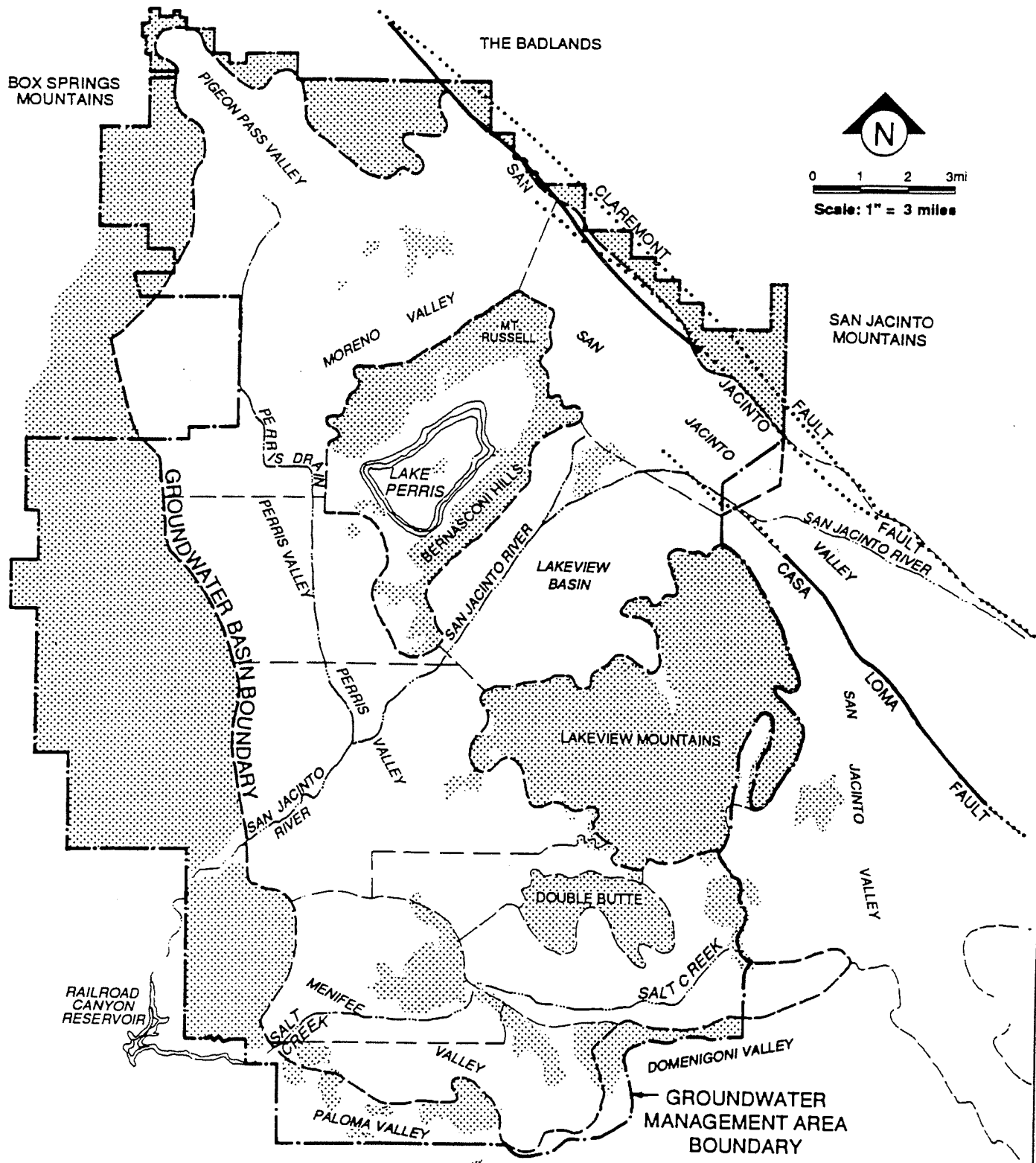
Riverside County Planning Department. Riverside County Planning Department develops and reviews general plans for all unincorporated areas in the county. Thus, this agency will review the groundwater management plan for consistency with general plans under their jurisdiction.

Riverside County Health Department. The Riverside County Health Department will review water supply and wastewater plans that could be embodied in the groundwater management plan.

## GROUNDWATER RESOURCES IN THE WEST SAN JACINTO BASIN

Figure 1-5 shows the major physical features, waterbearing and non-waterbearing areas of the groundwater management area. The major physical features in the study area include the San Jacinto mountains, the Badlands, the San Jacinto River, Salt Creek, Perris Valley Drain, the San Jacinto and Casa Loma faults, the Lakeview mountains, the Bernasconi Hills, and Double Butte. The management area groundwater basins are shown in Figure 1-6 and include Perris South I, II and III, Menifee I and II, Lakeview, the San Jacinto Lower-Pressure and portions of Perris North and Winchester subbasins.

The safe yield, volume of groundwater in storage, storage capacity, and water quality characteristics in the subbasins are summarized in Table 1-1. The safe yield of the individual subbasins ranges from about 1,600 for the Winchester subbasin to about 13,700 acre-ft/yr for the Perris North subbasin. The total safe yield of the West San Jacinto Groundwater Basin is about 36,200 acre-ft/yr. The safe yield increases if the volume of other planned groundwater recharge






- LEGEND:**
-  NONWATER-BEARING PORTION
  -  KNOWN FAULTS
  -  INFERRED OR CONCEALED FAULTS

Figure 1-5  
**MAJOR PHYSICAL FEATURES**

REFERENCE: DEPARTMENT OF WATER RESOURCES, SOUTHERN DISTRICT, 1977.

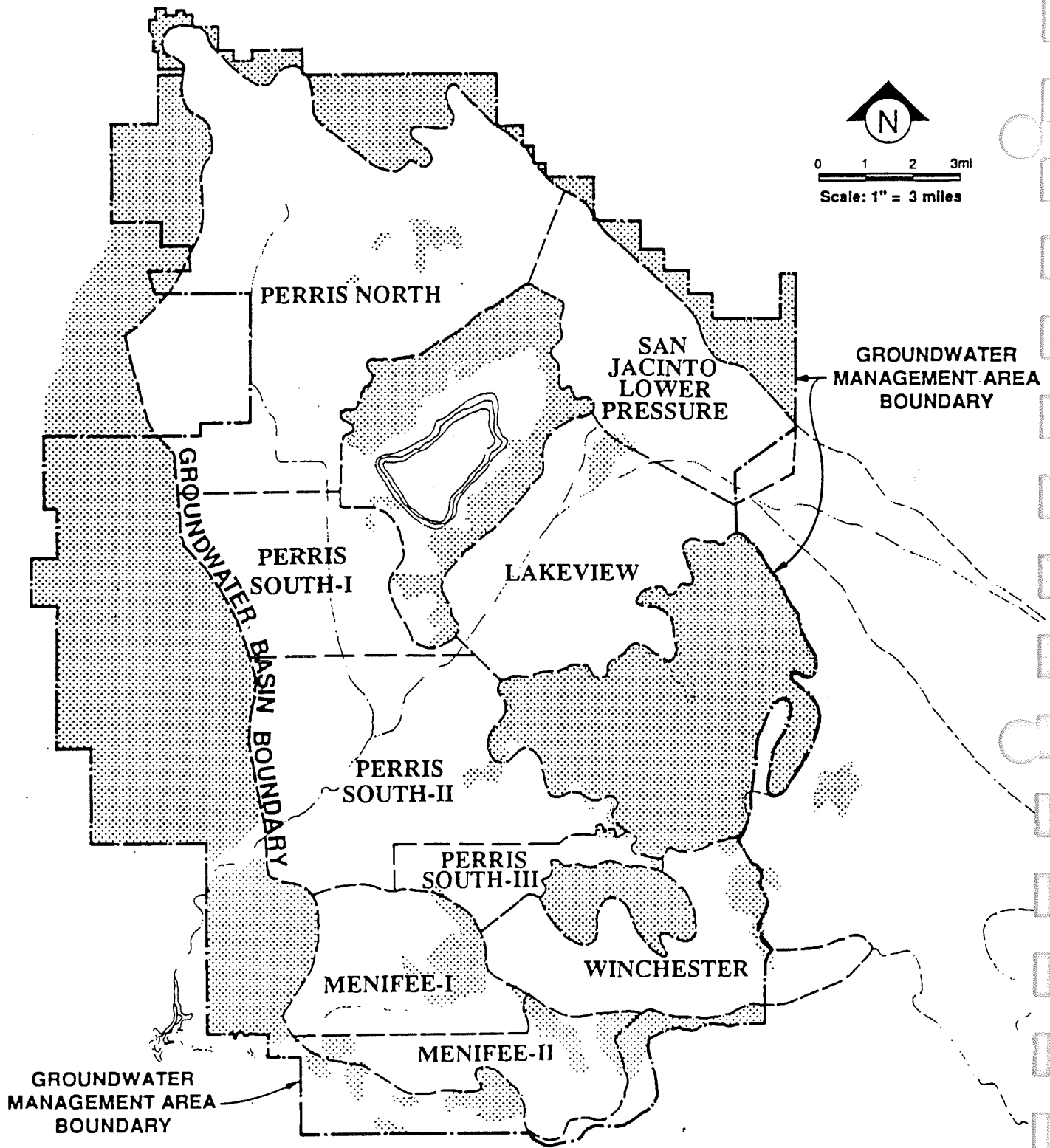


Figure 1-6  
**GROUNDWATER  
 SUBBASINS**

**TABLE 1-1  
AVAILABILITY OF GROUNDWATER IN THE  
WEST SAN JACINTO BASIN**

Subbasin	Volume in Storage	Storage Capacity	Fraction of Groundwater in West San Jacinto Basin	Natural Safe Yield	Safe Yield with Wastewater Recharge	Fraction of Yield in West San Jacinto Basin	Average TDS Concentration	Average Nitrate Concentration (as Nitrogen)
	(acre-ft)	(acre-ft)		(acre-ft/yr)	(acre-ft/yr)		(mg/L)	(mg/L)
Perris North	123,000	347,000	11%	13,700	19,500	41%	450	7
Lakeview	283,000	515,000	25%	6,800	6,800	14%	500	3
Perris South	248,000	402,000	22%	8,300	12,800	27%	920	5
San Jacinto Lower Pressure	382,000	391,000	34%	2,500	2,500	5%	1,000	4
Winchester	36,000	41,000	3%	1,600	1,800	4%	2,000	8
Meniffee	56,000	101,000	5%	3,300	4,700	10%	2,250	6
Totals	1,128,000	1,797,000	100%	36,200	48,100	100%		
Average							891	5

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water is included in the safe yield estimate. The safe yield, including reclaimed water percolation for the West San Jacinto Groundwater Basin, is about 48,100 acre-ft/yr.

The volume of groundwater in storage ranges from about 36,000 acre-ft for the Winchester subbasin to about 382,000 acre-ft for the San Jacinto Lower Pressure subbasin. The total volume of groundwater in storage in West San Jacinto Groundwater Basin is about 1,128,000 acre-ft. The volume of existing groundwater in storage that can economically be extracted is less than half the current volume in storage. On the other hand, all the water that is added to groundwater storage above the existing levels of groundwater storage can be recovered

Groundwater storage capacity ranges from about 41,000 acre-ft for the Winchester subbasin to about 515,000 acre-ft for the Lakeview subbasin. The total storage capacity for West San Jacinto Groundwater Basin is about 1,797,000 acre-ft.

Groundwater production estimates for 1993 were estimated from annual reports of groundwater production on file at the State Water Resources Control Board and from SCAG land use. Using reported groundwater production data, the total groundwater production from the West San Jacinto Groundwater Basin is about 8,200 acre-ft/yr. Combining reported groundwater production from municipal agencies, groundwater production estimates based on agricultural land uses and deducting agricultural use of reclaimed water yields a basin wide production estimate of about 26,100 acre-ft/yr.

Groundwater quality in most areas renders the groundwater marginal to unacceptable for direct use as a municipal supply. Groundwater from the Lakeview, Perris North, and parts of Perris South I can be used directly for municipal supply. Groundwater from parts of the Perris South I, Perris South II and Perris South III, and San Jacinto Lower Pressure subbasins could be blended with state project water and then used directly. Groundwater from Menifee, parts of Perris South II and Perris III, and the Winchester subbasins will need to be demineralized before use as a municipal supply.

## **FUTURE WATER DEMANDS AND WASTEWATER FLOWS**

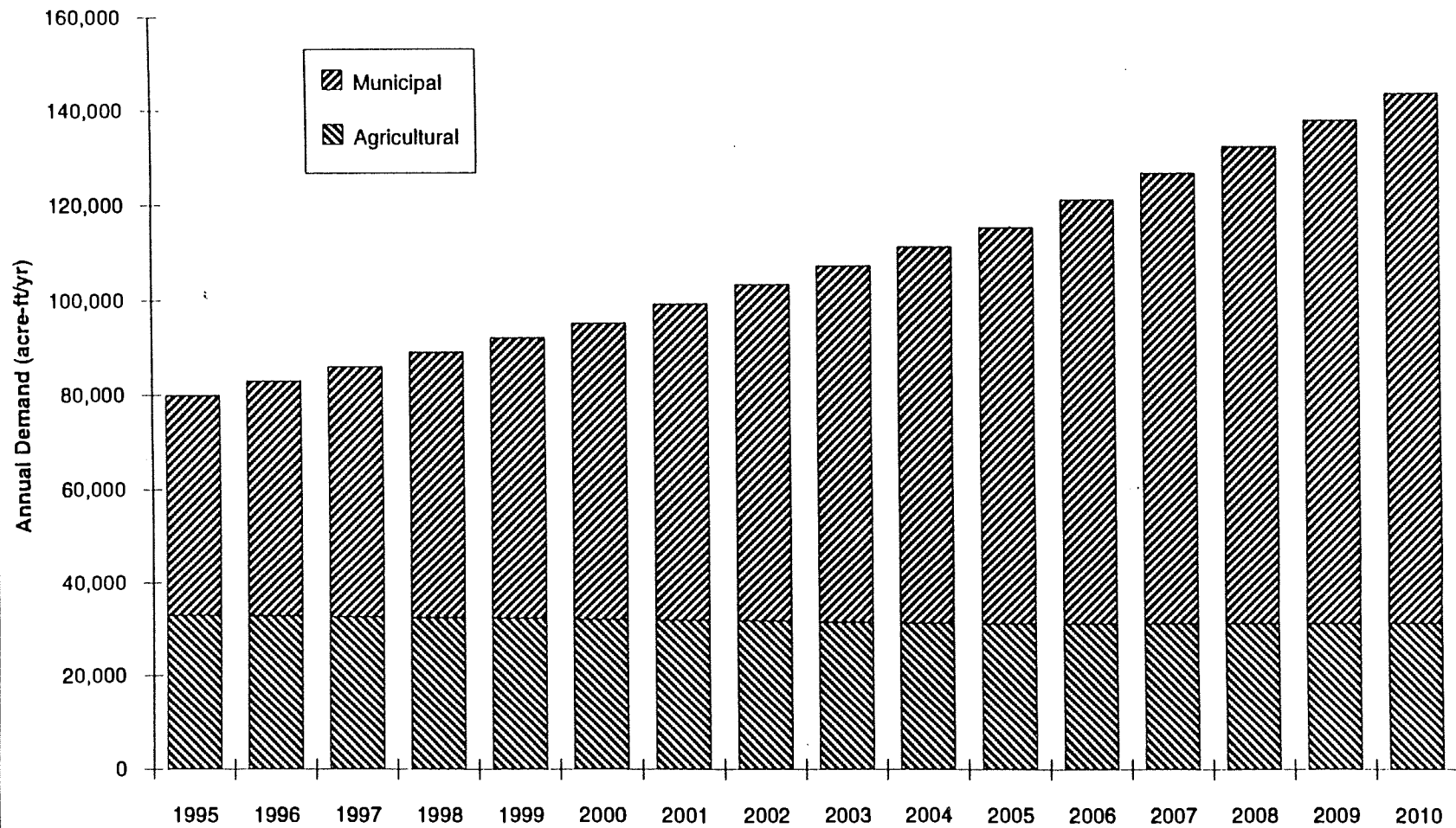
Projected Municipal Water demands for the West San Jacinto Groundwater Management area are listed in Table 1-2 and shown graphically in Figure 1-7. These estimates are based on land use and population projections and projected water use rates. Municipal demands in the West

**TABLE 1-2  
PROJECTIONS OF MUNICIPAL AND  
AGRICULTURAL DEMANDS  
WEST SAN JACINTO GROUNDWATER BASIN**

Year	Municipal Demands(1) (acre-ft/yr)	Agricultural Demands (acre-ft/yr)
1995	47,000	33,000
2000	63,000	32,000
2005	84,000	31,000
2010	112,000	31,000

Sources: (1) EMWD Projections 8/94

**FIGURE 1-7 WATER DEMAND PROJECTIONS FOR THE WEST SAN JACINTO GROUNDWATER MANAGEMENT AREA**





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San Jacinto Groundwater Management Area range from 47,000 acre-ft/yr in 1995, to 112,000 acre-ft/yr in 2010. Agricultural demands are projected to decline from about 33,200 acre-ft/yr in 1995, to 31,000 acre-ft/yr in 2010.

The sources of supply to the West San Jacinto Groundwater Management area include imported water from Metropolitan, groundwater, and reclaimed water.

**Imported Water from Metropolitan.** The quality of treated imported water is generally excellent and meets all drinking water regulations. Metropolitan adopted a schedule of projected water rate increases in 1991. The water rates established included:

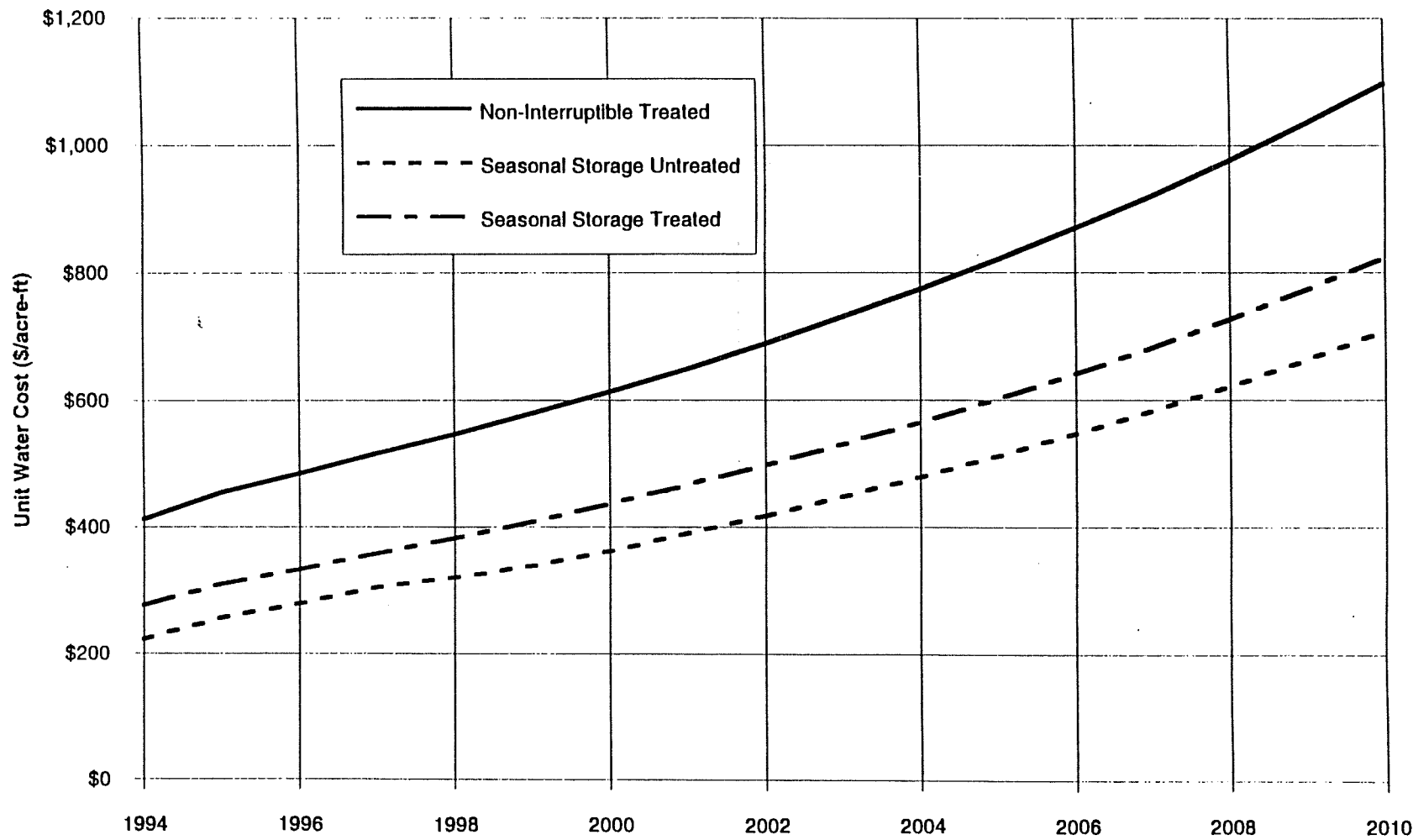
- a base (non-interruptible) rate;
- a treatment surcharge to be added to the base rate for purchases of treated water; and
- a seasonal discount for water produced from October 1 through April 30, to be subtracted from the base rate.

The goals of the seasonal discount are: to achieve greater conjunctive use of imported supplies and local supplies; encourage the construction of additional local production facilities; and reduce member agencies' dependence on Metropolitan deliveries during the summer months. Recently, Metropolitan announced water prices for 1993 and forecasted rates for the following ten years. The projected cost of imported water purchased from Metropolitan is shown graphically in Figure 1-8.

Metropolitan is currently evaluating supply reliability for its service area (Metropolitan Water District of Southern California, 1994). Metropolitan is projecting that with year 2000 demands, shortages in retail supplies will occur at least four out of five years, with shortages up to 30 percent. By the year 2020, shortages will occur on average once in five years, with shortages up to 20 percent. The frequency and magnitude of retail shortages will be comparable to Metropolitan shortages for areas that depend heavily on Metropolitan.

**Groundwater.** Groundwater is available throughout the management area in that most of the management area overlies the West San Jacinto Basin. However, the quality of groundwater precludes the use of some of the management area groundwater for municipal supply. TDS and nitrate are the water quality constituents that limit the use of groundwater. TDS is regulated as a secondary standard. Secondary standards are for those substances that are not hazardous to

FIGURE 1-8 COST OF IMPORTED WATER



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health, but may cause taste, odor, color, staining or other conditions that adversely affect the aesthetics of drinking water. The maximum contaminant level (MCL) for TDS is expressed as follows:

*Recommended MCL* - 500 mg/L. TDS concentrations less than or equal to the *Recommended MCL* are desirable for a higher level of consumer acceptance.

*Upper MCL* - 1,000 mg/L. TDS concentrations ranging up to the *Upper MCL* are acceptable if it is neither reasonable nor feasible to provide more suitable waters.

*Short Term MCL* - 1,500 mg/L. TDS concentrations ranging up to the *Short Term MCL* are acceptable only for existing systems on a temporary basis, pending the construction of treatment facilities or the development of acceptable new water sources.

Nitrate is regulated under primary standards. The MCL for nitrate is 10 mg/L (as nitrogen). Table 1-1 lists the average TDS and nitrate concentrations for each groundwater subbasin in the management area. The subbasins are ranked in Table 1-1 from lowest to highest in TDS. From a drinking water perspective, approximately 36 percent of the yield of the West San Jacinto Basin could be developed from the Lakeview and Perris North subbasins for direct use, without additional treatment for TDS and nitrate. Some groundwater in the Perris South-I subbasin could also be used without treatment and San Jacinto Lower Pressure, Perris South-II and Perris South-III groundwater could be used if blended with SWP water. Groundwater from the Menifee-I, Menifee-II, Winchester and parts of the Perris South-II and Perris South-III subbasins will require treatment if groundwater from these subbasins is to be used as a municipal drinking water supply. The treatment processes that would make these basins useful as a water supply source are blending with low TDS supplies such as SWP water, and demineralization. The cost to produce groundwater, exclusive of treatment, is estimated at about \$68 per acre-ft.

**Reclaimed Water.** EMWD is constructing a reclaimed water distribution plan that will make reclaimed water available throughout the management area. The reclaimed water system consists of five reclamation plants and about 79 miles of backbone distribution pipelines. The use of reclaimed water replaces non-potable demand on groundwater and imported supplies.

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**Water Supply Plan without a Groundwater Management Plan**

The water supply plan for the management area, in the absence of a groundwater management plan, consists of the use of imported water for all new municipal uses and a combination of groundwater and reclaimed water for agricultural uses. All agricultural demands would be satisfied with groundwater and reclaimed water. The Menifee desalter would be operational in 1997, producing about 3,360 acre-ft/yr. The water supply plan for the management area is listed in Table 1-3.

The cost of this water supply plan is described in Table 5-6 in Section 5 of this report. Table 5-6 shows the annual demand, supplies by source and cost of each source in terms of annual cost, total annual cost and present value of all cost over the 1995 to 2010 planning period. The fractions of total supply and total supply cost by source are listed below.

Source	Fraction of Total Supply	Fraction of Total Supply Cost
Imported Water	64%	91%
Reclaimed Water	10%	2%
Menifee Desalter	3%	4%
Groundwater	23%	3%

The present value cost of future water supplies in the management area for the period 1995 to 2010 is about \$557,000,000.

**GROUNDWATER MANAGEMENT GOALS**

The mission statement of EMWD is:

*The mission of the Eastern Municipal Water District is to deliver a dependable supply of safe, quality water and provide sewage collection services to its customers in an economical, efficient and publicly responsible manner.*

The water supply part of EMWD's mission statement is a goal shared by all purveyors of water in the West San Jacinto Groundwater Basin management area. The safe yield of the West San

**TABLE 1-3**  
**WATER SUPPLY PLAN IN THE ABSENCE OF**  
**A GROUNDWATER MANAGEMENT PLAN**  
**(acre-ft/yr)**

Year	1995		2000		2005		2010	
	Volume	Fraction	Volume	Fraction	Volume	Fraction	Volume	Fraction
<b><u>Municipal Demand</u></b>	<b><u>47,000</u></b>	<b><u>100%</u></b>	<b><u>63,000</u></b>	<b><u>100%</u></b>	<b><u>84,000</u></b>	<b><u>100%</u></b>	<b><u>112,000</u></b>	<b><u>100%</u></b>
Imported Water	44,500	95%	56,140	89%	76,140	91%	103,140	92%
Menifee Desalter	0	0%	3,360	5%	3,360	4%	3,360	3%
Reclaimed Water	0	0%	1,000	2%	2,000	2%	3,000	3%
Groundwater	2,500	5%	2,500	4%	2,500	3%	2,500	2%
<b><u>Agricultural Demand</u></b>	<b><u>33,000</u></b>	<b><u>100%</u></b>	<b><u>32,000</u></b>	<b><u>100%</u></b>	<b><u>31,000</u></b>	<b><u>100%</u></b>	<b><u>31,000</u></b>	<b><u>100%</u></b>
Reclaimed Water	8,900	27%	8,900	28%	8,900	29%	8,900	29%
Groundwater	24,100	73%	23,100	72%	22,100	71%	22,100	71%
<b><u>Total Demand</u></b>	<b><u>80,000</u></b>	<b><u>100%</u></b>	<b><u>95,000</u></b>	<b><u>100%</u></b>	<b><u>115,000</u></b>	<b><u>100%</u></b>	<b><u>143,000</u></b>	<b><u>100%</u></b>
Imported Water	44,500	56%	56,140	59%	76,140	66%	103,140	72%
Menifee Desalter (1)	0	0%	3,360	4%	3,360	3%	3,360	2%
Reclaimed Water	8,900	11%	9,900	10%	10,900	9%	11,900	8%
Groundwater (2)	26,600	33%	25,600	27%	24,600	21%	24,600	17%

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Jacinto Basin is about 36,200 acre-ft/yr. Projections of groundwater usage in the management area range from about 26,600 acre-ft/yr in 1995, to 24,600 acre-ft/yr in 2010.

Agricultural groundwater use will decrease slightly in the future, from about 24,100 acre-ft/yr to 22,100 acre-ft/yr, as agricultural lands are converted to urban uses. The majority of this agricultural water demand will be satisfied by reclaimed water. The need for potable water will increase dramatically in the future. Potable water demands in the management area will range from 47,000 acre-ft/yr in 1995, to 112,000 acre-ft/yr by 2010.

In the absence of a groundwater management plan, most of the new potable demand will be met from treated imported water purchased from Metropolitan. Metropolitan's supplies are projected to increase in cost about 142 percent over the 1995 to 2010 planning period, from \$454 per acre-ft in 1995, to about \$1,100 per acre-ft in 2010. Metropolitan's supply is also not entirely reliable. For year 2000 demands, Metropolitan has projected shortages in four years out of five years, ranging from 10 to 30 percent.

There are many private groundwater producers in the management area that do not rely on EMWD for water supply. The negative impacts, if any, of a groundwater management plan on these users must be minimized; and the ability of these groundwater producers to continue producing groundwater for beneficial use must be preserved.

The goal of the groundwater management plan is to

*maximize the use of groundwater for potable demands in such a way as to lower the cost of water supply and to improve the reliability of the total water supply for all water users in the West San Jacinto Groundwater Basin Management area.*

## ELEMENTS OF A GROUNDWATER MANAGEMENT PLAN

The groundwater management plan consists of four elements that include adoption of groundwater management policies, development of groundwater yield enhancement programs, conjunctive use with imported supplies and the exchange of groundwater from agricultural and other non-potable uses with reclaimed water.

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**Groundwater Management Policies**

Management policy elements consist of developing and implementing policies, regulations and coordinated activities among the groundwater producers. Currently, there is no routine monitoring of groundwater production, groundwater level and groundwater quality in the management area. There are no programs or institutions that routinely collect and review these data. There are no management tools available to forecast the impact of existing and future groundwater management practices. There is no coordination or oversight of well construction in the management area. There is no systematic plan to manage unused and obsolete wells. The management plan needs to include policies to manage well construction and to ensure their destruction when wells become obsolete. The following management policy elements should be included in the groundwater management plan.

- Establishment of Groundwater Basin Manager
- Groundwater Production Monitoring
- Groundwater Level and Quality Monitoring
- Development of Well Construction Policies.
- Development of Well Abandonment and Destruction Policies
- Monitoring of Well Construction, Abandonment and Destruction
- Groundwater Quality Protection

**Yield Enhancement Elements**

Yield enhancement refers to increasing the useful yield of the groundwater resource. In the West San Jacinto Groundwater Management area there are two yield enhancement elements that could be incorporated in the groundwater management plan -- artificial recharge and recovery of contaminated groundwater.

Artificial recharge can be done in spreading basins, injection wells and exchange. Groundwater storage capacity and favorable hydrogeologic conditions favor artificial recharge in the Lakeview, Perris North and parts of Perris South I and Perris South II subbasins. The other subbasins are full and have poor hydrogeologic characteristics for recharge. The source water



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for artificial recharge would consist of small quantities of local runoff and significantly larger quantities of state project water from Metropolitan and reclaimed water from EMWD.

Recovery of contaminated groundwater consists of the pumping and treatment of contaminated groundwater. The types of treatment that are included in this element include demineralization and blending; although other types of treatment may be required depending on water quality conditions. Demineralization will be necessary to remove salt accumulating in groundwater and to develop municipal supplies from parts of the Perris South II and Perris South III, and the Winchester subbasins. Blending could be used to recover degraded groundwater from parts of the Perris South I, Perris South II and Perris South III, and San Jacinto Lower Pressure subbasins. This assessment is based on limited water quality data and therefore the type of treatment necessary to recover contaminated groundwater may change when better data becomes available.

**Conjunctive Use**

Conjunctive use is an operational strategy that combines the operations of multiple sources of water and storage resources in such a way that the combined yield is greater than the yield that would occur from the sum of independent, uncoordinated operations of the sources. The same definition would apply if other objectives could be achieved by coordinated operation and the yield remained at an acceptable level. Other objectives might include reduced cost, more reliable supply, and the attainment of environmental objectives. In most cases, conjunctive use results in increased yield and lower cost. Conjunctive use is commonly associated with storing of imported water in groundwater basins for use during periods of shortage. The more general definition could involve EMWD reclamation and municipal distribution facilities, Metropolitan facilities and resources, state project facilities and resources, groundwater basins within EMWD, and, potentially, groundwater basins outside of EMWD. Conjunctive use can operate seasonally, over-year, or both. Seasonal conjunctive use would bank water during seasonal period(s) of over-supply or abundance for use during dry times of the year. Over-year conjunctive use would bank water during years of over-supply or abundance for use during drought periods and imported water shortages.

Based on current knowledge of groundwater conditions, EMWD could bank local runoff, imported water purchased from Metropolitan and reclaimed water in the Lakeview, Perris North and Perris South subbasins during the period of October 1 through April 30, for use either during

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the summer, during periods of imported water shortages, or both. The unused storage capacity of the Lakeview, Perris North and Perris South subbasins is about 600,000 acre-ft. EMWD could use up to half (and possibly more) of this unused storage capacity for seasonal and over-year storage, thereby reducing the cost of imported water purchases and providing an additional source of water during periods of imported supply shortage. Recharge would be accomplished with a combination of new spreading basins and injection wells. Recovery of recharge will be through existing and new production wells. Reclaimed water could be a source of recharge in a conjunctive use program for augmentation of potable supplies. EMWD should be able to shift about 30,000 to 50,000 acre-ft year of non-interruptible rate purchases to off-peak with conjunctive use projects in the Lakeview, Perris North and Perris South subbasins. The reduction in cost would be much more substantial if a blend of reclaimed water and imported water were recharged during the winter.

Based on current knowledge of groundwater conditions, conjunctive use with imported supplies and local runoff in the San Jacinto Lower Pressure, Menifee and Winchester subbasins appears to be more difficult to implement and of less benefit. Limited conjunctive use in these subbasins could be done in conjunction with groundwater treatment.

## **GROUNDWATER MANAGEMENT PLAN**

### **Contents of the Management Plan**

The management plan described herein is a program to achieve the management plan goals and includes conceptual descriptions of elements of the plan, and a description of the process to define and implement these elements consistent with the management plan goal. The groundwater management program includes: the development and implementation of policies, engineering investigations, facilities construction and operation, and other management activities. There are significant deficiencies in the knowledge of the groundwater resources of the West San Jacinto Groundwater Basin management area. These deficiencies preclude the definitive descriptions for some of the physical and institutional elements of the groundwater management plan. The groundwater management program includes studies to obtain additional information that is necessary to develop all the institutional and physical elements described in the plan.

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The goal of the management plan is:

*maximize the use of groundwater for potable demands in such a way as to lower the cost of water supply and to improve the reliability of the total water supply for all water users in the West San Jacinto Groundwater Basin management area*

This goal extends to all groundwater users. Groundwater users that are not dependent on EMWD should benefit from the groundwater management plan. Adverse impacts, if any, from the groundwater plan will be minimized or mitigated. The rights of private groundwater producers will be protected. Groundwater producers who extract 10 acre-ft/yr or less would be exempt from the operation and implementation of the groundwater management plan.

### Ultimate Plan Description

The groundwater management plan consists of a series of elements that, when implemented, will achieve the management plan goal stated above within the constraints. The management plan includes implementation of new policies, institutional arrangements, and physical projects. EMWD will be the agency responsible for implementation of the groundwater management plan. Based on the information developed in this study and presented in the previous sections, the ultimate groundwater management plan should include the following elements.

**Establishment of a Groundwater Basin Manager.** EMWD will implement the groundwater management plan. EMWD Board of Directors will be the decision-making body responsible for directing the implementation of the groundwater management plan. EMWD staff will serve as the staff to assist the EMWD Board of Directors in implementing the plan.

Upon adoption of the groundwater management plan, EMWD Board of Directors will appoint an Advisory Committee. The Advisory Committee will be composed of seven members, with one member each from city of Moreno Valley, city of Perris, Nuevo Mutual Water Company, Edgemont Gardens Mutual Water Company, and EMWD; and two members representing agricultural producers. The Advisory Committee will study, review and provide comments on all groundwater management plan activities directly to the EMWD Board of Directors.

EMWD staff, will prepare an annual engineering report describing the operation of the management plan for review by the EMWD board of directors, Advisory Committee and groundwater producers. EMWD, in consultation with the Advisory Committee and participating groundwater producers, will develop a coordinated operating strategy on an annual basis, based on the management plan and the findings of the annual report.

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**Monitoring of Groundwater Production.** EMWD, in cooperation with the Advisory Committee, will implement a groundwater production monitoring program. Detailed estimates of the safe yield will be developed during the first year of the program. Groundwater production estimates will be developed by EMWD based on totalizing meters, energy usage and land use. EMWD will produce a groundwater production report and estimates of overdraft (if any). These data will be included in the annual report provided to the management committee. The production monitoring program will not limit or suspend groundwater production by existing groundwater producers.

**Monitoring of Groundwater Level and Quality.** EMWD, in cooperation with the Advisory Committee, will implement a groundwater level and quality monitoring program. Groundwater level and quality data will be collected from well owners. EMWD will measure groundwater levels and quality from select private wells. Groundwater levels and quality data from agencies' wells will be provided to EMWD by the agencies. EMWD will compile these data and develop estimates of the groundwater in storage, change in storage, overdraft and groundwater quality conditions. These data will be included in the annual report provided to the management committee.

**Development of Well Construction Policies.** EMWD, in cooperation with the Advisory Committee, the Department of Health Services and the Riverside County Health Department, will develop well construction policies that are specific to the West San Jacinto Groundwater Basin management area. These policies will be updated continuously based on new regulatory requirements and data. These policies will not limit or suspend groundwater production by existing groundwater producers.

**Monitoring of Well Construction.** EMWD has compiled and digitized most, if not all the well construction information that is available for existing wells. EMWD, in cooperation with other groundwater producers, will collect well construction data for new wells. EMWD will provide comments and suggestions to supplement design criteria that will be required by other agencies, including the Department of Health Services and the Riverside County Health Department.

**Development of a Well Abandonment and Destruction Program.** EMWD, in cooperation with the Advisory Committee, the Department of Health Services and the Riverside County Health Department, should develop well abandonment and destruction policies that are specific to the West San Jacinto Groundwater Basin management area. These policies should be updated continuously based upon new regulatory requirements and data.

**Groundwater Quality Protection.** EMWD, in cooperation with the Advisory Committee and parties responsible for groundwater quality degradation, should develop cooperative plans to prevent further degradation of groundwater and to integrate the solution of existing water quality problems to maximize the beneficial use of groundwater. The known areas of concern are the high TDS groundwater in the Perris South II (Ski Land area) and Winchester subbasins, and the groundwater contamination associated with March Air Force Base. The existing efforts undertaken by EMWD to rehabilitate the Menifee subbasins (the Menifee desalter project) will be completed independent of the groundwater

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management plan. Additional degraded groundwater areas could be discovered through groundwater monitoring.

**Exchange of Agricultural and Other Non-potable Groundwater Production to Municipal Use.** The intent of this element is to increase the groundwater yield available for municipal use by either retiring agricultural and non potable demands or by substituting reclaimed water for groundwater used for agricultural and other non-potable uses. Incentives should be developed to encourage the exchange of agricultural groundwater production to municipal use.

**Maximize Yield Augmentation with Local Resources - Local Runoff and Reclaimed Water.** Yield augmentation through the recharge of runoff (water harvesting) and through the recharge of reclaimed water should be implemented where consistent with water quality objectives and other elements of the groundwater management plan. The Lakeview, Perris North and Perris South subbasins appear to be the most feasible areas for this element.

**Maximize Conjunctive Use.** Conjunctive use should be implemented in the West San Jacinto Groundwater Basin management area. The unused storage capacity in the West San Jacinto Groundwater Basin management area is about 670,000 acre-ft, with about 600,000 acre-ft or 90 percent in the Lakeview, Perris North and Perris South subbasins. The yield from conjunctive use, exclusive of safe yield, could range from 30,000 to 50,000 acre-ft, or perhaps larger. Conjunctive use will improve overall water supply reliability, groundwater quality, and will lower water supply cost. These benefits will be realized by all groundwater users.

The specifics of recharge, extraction, conveyance and treatment facilities will be developed after a thorough groundwater resources evaluation is performed and planning studies are done to develop and evaluate conjunctive use alternatives.

**Groundwater Treatment.** Groundwater treatment in the form of blending and demineralization should be done in the West San Jacinto Groundwater Basin management area to recover contaminated groundwater for municipal use. The specifics of treatment facilities will be developed after a thorough groundwater resources evaluation is performed and planning studies are done to evaluate groundwater treatment feasibility.

### Groundwater Management Plan Alternatives

Four groundwater management alternatives were developed to evaluate the economic benefits to all water users in the groundwater management area from increasingly complex and capital-intensive groundwater management plans. All four of these alternatives include the following management elements:

- Establishment of a Groundwater Basin Manager
- Monitoring of Groundwater Production

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- Monitoring of Groundwater Level and Quality
- Development of Well Construction Policies
- Development of Well Abandonment and Destruction Policies
- Monitoring of Well Construction, Abandonment and Destruction.
- Groundwater Quality Protection

**Alternative 1 - Agricultural Exchange and Blending.** Alternative 1 consists of the above-mentioned common elements plus the exchange of agricultural groundwater production, of which 2,000 acre-ft/yr are permanent transfers from land use conversions and about 17,500 acre-ft/yr of exchange of groundwater production for reclaimed water. Seven thousand one hundred acre-ft/yr of poor quality groundwater will be pumped from the San Jacinto Lower Pressure and Perris South subbasins and blended with imported water for municipal use.

**Alternative 2 - Agricultural Exchange, Blending and Demineralization.** Alternative 2 consists of the above-mentioned common elements plus the exchange of agricultural groundwater production, of which 2,000 acre-ft/yr are permanent transfers from land use conversions and about 21,700 acre-ft/yr of exchange of groundwater production for reclaimed water. Seven thousand one hundred acre-ft/yr of poor quality groundwater will be pumped from the San Jacinto Lower Pressure and Perris South subbasins and blended with imported water for municipal use. Five thousand three hundred acre-ft/yr of highly mineralized groundwater from the Perris South and Winchester subbasins will be pumped and demineralized to produce about 4,200 acre-ft of drinking water.

**Alternative 3 - Agricultural Exchange, Blending, Demineralization and 30,000 acre-ft/yr Conjunctive Use.** Alternative 3 includes all the elements of Alternative 2, plus conjunctive use. Conjunctive use will be implemented in the Perris North, Perris South I, Perris South II and Lakeview subbasins. Recharge would occur in spreading basins. Source water is state project water and reclaimed water. Average annual increase in recharge and extraction from conjunctive use will be about 30,000 acre-ft/yr.

**Alternative 4 - Agricultural Exchange, Blending, Demineralization and 50,000 acre-ft/yr Conjunctive Use..** Alternative 4 is identical to Alternative 3 except that the conjunctive use element has been expanded to 50,000 acre-ft/yr.

### **Economic Evaluation of the Groundwater Management Plan Alternatives**

Tables 8-1 through 8-4 in Section 8 illustrate the economic benefits that water users in the West San Jacinto Groundwater Basin management area would realize if a groundwater management plan were implemented. Each table lists the projected total demand for water and shows how that demand would be satisfied with each groundwater management plan alternative. For economic evaluation purposes, the plan elements are assumed on line in 1999, that is, all elements would be implemented in five years. Actual implementation could take place over a

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longer period of time ranging from five to fifteen years. The groundwater management plan alternatives are compared to the *no groundwater management plan case* in Table 1-4. The difference in costs between the *with management plan cases* and *without management plan case* occurs in years 1999 through 2010.

*Alternative 1 - Agricultural Exchange and Blending* groundwater management plan case has a present value savings of about \$108,000,000 over the *no groundwater management plan case*. The saving comes from the exchange of up to 17,500 acre-ft/yr of agricultural groundwater production to municipal uses and the reduction in the use of a like amount of imported water.

*Alternative 2 - Agricultural Exchange, Blending and Demineralization* groundwater management plan is identical to Alternative 1 except that the agricultural exchange of groundwater production to municipal uses has been expanded to about 21,700 acre-ft/yr and municipal groundwater production has been expanded by about 4,200 acre-ft/yr through construction of a demineralization facility. Alternative 2 has a present value savings of about \$104,000,000 over the *no groundwater management plan case* and is comparable to the cost of Alternative 1. The cost savings over the *no groundwater management plan case* come from the exchange of up to 21,600 acre-ft/yr of agricultural groundwater production to municipal uses and the reduction in the use of a like amount of imported water. The cost of Alternative 2 is slightly higher than Alternative 1 because the demineralization costs are higher than the cost of imported water prior to 2010. After 2010 demineralization costs will be less than imported water. Alternative 2 would have costs savings greater than Alternative 1 if the economic analysis were extended beyond 2010.

*Alternative 3 - Agricultural Exchange, Blending, Demineralization and 30,000 acre-ft/yr Conjunctive Use* management plan has all the elements contained in Alternative 2 plus the incorporation of 30,000 acre-ft/yr of conjunctive use. The source water for conjunctive use is 20,000 acre-ft of state project water and 10,000 acre-ft/yr of reclaimed water. The demand for treated non-interruptible water from Metropolitan has dropped from 64 percent for the *no management plan case* to 26 percent. The demand for untreated seasonal water has risen to 14 percent. Treated non-interruptible and seasonal untreated imported water make up 40 percent of municipal supplies. Alternative 3 has a present value savings of about \$172,000,000 over the *no groundwater management plan case* illustrated in Table 5-6 and about \$66,000,000 over Alternatives 1 and 2. About 62 percent of the cost savings comes from the agricultural exchange,



**TABLE 1-4 (revised 9/7/94)**  
**COMPARISON OF GROUNDWATER MANAGEMENT PLAN ALTERNATIVES**

Alternative	Percentage of Total Supply			Size of Groundwater Management Plan Elements				Present Value Cost of Supply	Reduction in Present Value Cost of Supply from Groundwater Management Plan
	Non Interruptible Treated Imported Water	Seasonal Treated Imported Water	Untreated Imported Water	Agricultural Exchange  (acre-ft/yr)	Blending  (acre-ft/yr)	Demineralization  (acre-ft/yr)	Conjunctive Use  (acre-ft/yr)		
No Groundwater Management Plan	64%	0%	0%	0	0	0	0	\$557,000,000	na
1 Agricultural Exchange and Blending	49%	0%	0%	17,510	7,100	0	0	\$449,000,000	\$108,000,000
2 Agricultural Exchange, Blending and Demineralization	46%	0%	0%	21,690	7,100	4,180	0	\$453,000,000	\$104,000,000
3 Agricultural Exchange, Blending, Demineralization and 30,000 acre-ft/yr Conjunctive Use (all recharge through spreading)	26%	0%	14%	21,690	7,100	4,180	30,000	\$385,000,000	\$172,000,000
4 Agricultural Exchange, Blending, Demineralization and 50,000 acre-ft/yr Conjunctive Use (80 recharge through spreading, 20 % through injection)	18%	4%	18%	21,690	7,100	4,180	50,000	\$371,000,000	\$186,000,000

SECTION 1  
EXECUTIVE SUMMARY

blending and demineralization elements included in Alternatives 1 and 2; the remaining cost savings are due to conjunctive use.

*Alternative 4 - Agricultural Exchange, Blending, Demineralization and 50,000 acre-ft/yr Conjunctive Use* management plan has all the elements contained in Alternative 3 except that conjunctive use has been expanded from 30,000 to 50,000 acre-ft. The source water for conjunctive use is 40,000 acre-ft of state project water and 10,000 acre-ft/yr of reclaimed water. The demand for treated non-interruptible water from Metropolitan has dropped from 64 percent for the no management plan case to 18 percent. Untreated seasonal water has risen to 18 percent and treated seasonal water to 4 percent. Treated non-interruptible, treated seasonal and seasonal untreated imported water make up 40 percent of municipal supplies. Treated seasonal water would be used for recharge by injection. Alternative 4 has a present value savings of about \$186,000,000 over the *no groundwater management plan case* illustrated in Table 5-6 and about \$80,000,000 over Alternatives 1 and 2. About 57 percent of the cost savings comes from the agricultural exchange, blending and demineralization elements included in Alternatives 1 and 2; the remaining cost savings are due conjunctive use.

The groundwater management plan development costs and the costs of recharge of basins and blending facilities have not been included in these analyses. These costs could have a present value ranging from \$50,000,000 to \$70,000,000. The cost savings from implementation of any of these alternatives far exceed the cost of implementation. The projected cost savings from the groundwater management plan illustrated in Tables 8-1 through 8-4 are for the 15-year period of 1999 to 2010 in which the capital-intensive facilities, such as spreading basins, have been in operation (and amortized) for 11 years. If these analyses were extended to the period of time over which capital-intensive facilities were to be financed, say 20 years, the cost saving would be significantly greater.

There are two additional significant benefits from a groundwater management plan. First, imported water for direct use has been reduced by half, which will improve overall water supply reliability. The volumetric impact of water shortages in the imported water supply could be reduced by half. Second, the recharge of state project water into the Lakeview, Perris North and Perris South subbasins will improve the quality of the groundwater in these subbasins.

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EXECUTIVE SUMMARY

**Financing the Groundwater Management Plan**

The primary beneficiaries of the plan are municipal water users in the West San Jacinto Groundwater Basin management area. Private groundwater producers such as farmers, dairy operators and individuals with small domestic wells will either be beneficially impacted or have no impacts. It is the intent of the plan to mitigate all significant adverse groundwater impacts to private groundwater producers. The types of beneficial impacts that private well owners could experience will be stabilized or increased groundwater levels where overdraft is occurring, such as the Lakeview subbasin, and reduced supply cost for those groundwater producers that can use reclaimed water in lieu of groundwater.

The cost of implementing and operating the West San Jacinto Groundwater Basin management plan should be born by municipal water users in the management area. The cost savings experienced by the local private groundwater users should be their incentive to participate in the groundwater management plan. There could be some cost to local groundwater producers if groundwater replenishment is necessary due to groundwater overdraft. In the event of overdraft, an equitable cost sharing plan should be developed to correct the overdraft.

Some of the elements of the management plan are capital intensive such as recharge facilities, wells, treatment plants, pipelines, etc. EMWD will need to develop a plan to finance these elements of the groundwater management plan with cost recovery based on the sale of water developed by the plan, or some other method as appropriate. Economic analyses show that the management plan should easily pay for itself.

**Implementation of the Groundwater Management Plan**

Upon adoption of the groundwater management plan, EMWD will form the Advisory Committee and begin implementation of the policy and physical elements of the management plan. The implementation of the groundwater management plan will occur in a phased process and consist of the following:

- Phase 1            Short Term Implementation
- Phase 2            Refine the Ultimate Groundwater Management Plan
- Phase 3            Ultimate Groundwater Management Plan Implementation

SECTION 1  
EXECUTIVE SUMMARY

**Phase 1 Short Term Implementation.** The goals of the short term implementation phase are to: implement those elements of the groundwater management plan that are easy to implement; where existing information is adequate for implementation; and to develop and implement demonstration projects that will provide engineering information necessary for design of management elements in the ultimate plan. The following tasks will be completed in Phase I.

- Groundwater Resources Evaluation
- Develop Groundwater Management Policies
- Construct and Operate Demonstration Projects for Blending, Demineralization and Conjunctive Use
- Develop Water Resources Planning Model
- Develop and Evaluate Feasibility Level Plans for physical elements of the Management Plan

**Phase 2 Refine the Ultimate Groundwater Management Plan.** *Phase 1 Short Term Implementation* will develop policies and data necessary for defining the ultimate groundwater management plan. Phase 2 consists of the detailed engineering, environmental and financial work to describe and implement the ultimate management plan. The complexity and cost for the tasks listed below are dependent on the management plan elements included in the management plan.

- Prepare Facility and Operation Plans
- Prepare Financial Plan
- Prepare Project Specific Environmental Impact Reports
- Prepare Engineering Report for a Planned Recharge Project
- Institutional Planning

**Phase 3 Ultimate Groundwater Management Plan Implementation.** The facility plans, environmental documentation and draft agreements developed in Phase 2 will be converted to construction documents, project-specific environmental documentation and final agreements. These projects will then be constructed and operated. The sequencing and sizing of the management elements will depend on actual future water demands and the availability of funds for construction. It is premature to speculate on the magnitude of the effort required by most of these tasks because of uncertainties in what facilities and operating plans will be included in the groundwater management plan and the timing of the tasks.

**SECTION 1  
EXECUTIVE SUMMARY**

**Management and Monitoring**

The management and monitoring of the groundwater management plan will occur while the elements of the ultimate groundwater management plan are being implemented. The management and monitoring activities developed in Phase 1 will be adopted by EMWD board action. Future modifications to management and monitoring programs will be incorporated as warranted by changing conditions.

**Schedule and Cost**

The Phase 1 work should take about two years to complete. Phase 2 will take about two years to complete and will overlap Phase 1 by about one year. The cumulative time required to complete phases 1 and 2 will be about three to four years. Phase 3 could take up to 10 years to complete with some projects (e.g., blending) coming on line within a couple of years and other projects (e.g., large scale surface recharge) taking 5 years to implement.

The cost to complete Phases 1 and 2 is estimated to range between 3 to 5 million dollars. The cost to complete Phase 3 cannot be estimated until the ultimate plan is described at the conclusion of Phase 2.

**SECTION 2**

## SECTION 2 INTRODUCTION

### THE NEED FOR GROUNDWATER MANAGEMENT

EMWD, together with the majority of water purveyors in Southern California, have been heavily relying on imported supplies from Metropolitan Water District of Southern California (Metropolitan). Recently, Metropolitan's ability to supply the ever-growing needs of Southern California has become increasingly unreliable due to the following reasons:

- demand for water is continuing to increase;
- environmental constraints at the point of origin may limit the water available for export;
- structural adequacy of the delivery system is limited;
- climatological uncertainties can limit delivery; and
- inadequate local storage facilities.

EMWD could purchase imported water from Metropolitan to meet these projected municipal demands. Metropolitan's sources, however, are not reliable and will be very expensive in the future. Metropolitan, with its current planning and future projects, will experience shortages in four of five years, with shortages reaching as high as 30 percent. The cost of imported water from Metropolitan is currently (July 1994) \$412 per acre-ft for treated water and is projected to reach about \$1,100 per acre-ft by 2010. These rising costs and lack of water to meet all of the demands has encouraged some local agencies in Southern California to claim water rights in the service areas of other agencies. One such action that could adversely affect EMWD's local water resources is a claim recently filed by Orange County Water District, which underscores the urgent need for action by EMWD to protect the water resources within its service area for use by EMWD consumers.

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INTRODUCTION

The West San Jacinto Groundwater Basin underlies a large portion of the Eastern Municipal Water District (EMWD). The West San Jacinto Groundwater Basin includes the Perris North, Perris South, Menifee, Winchester, Lakeview and the San Jacinto Lower Pressure subbasins. The location of these subbasins is shown in Figure 2-1. This area is experiencing rapid land use conversion from agriculture to urban uses. Total municipal water demands are expected to increase from 47,000 acre-ft/yr in 1995, to 112,000 acre-ft/yr in 2010.

Three sources of water supply for these demands can be considered: groundwater, imported water and reclaimed water. Groundwater in the West San Jacinto Groundwater Basin, for the most part, is of poor quality due to natural causes and irrigated agriculture. Most of the groundwater resources cannot be used as municipal supply due to poor quality - the groundwater quality either violates drinking water standards or is too high in total dissolved solids (TDS) or other water quality constituents to be discharged after municipal use. To meet increasing demands, EMWD could purchase imported water from Metropolitan. However, availability and costs might limit this alternative. EMWD has reclaimed water resources that could be used to meet agricultural demands and non-potable municipal demands. Reclaimed water cannot be directly used for potable demand unless, after groundwater recharge and dilution, it meets Title 22 requirements (State Department of Health Services Reclaimed Water Regulations). Additionally, groundwater treatment practices can convert non-potable water supplies to potable supplies.

The availability and reliability of the total water supply can be improved through the joint, optimized (conjunctive) management of all the water supply sources. It is the intent of Assembly Bill AB 3030, which was incorporated into the Water Code in 1992 (Part 2.75 commencing with Section 10750 of Division 6) with amendments by AB 1152 of 1993, to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions. Authorization to adopt and implement a plan is contained in the following section of AB 3030:

"§10753 (a) Any local agency, whose service area includes a groundwater basin, or a portion of a groundwater basin, that is not subject to groundwater management pursuant to other provisions of law or a court order, judgment, or decree, may, by ordinance, or by resolution if the local agency is not authorized to act by ordinance, adopt and implement a groundwater management plan pursuant to this part within all or a portion of its service area."

SECTION 2  
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The components of a groundwater management plan may include the following:

- "§10753.7 (a) The control of saline water intrusion.
- (b) Identification and management of wellhead protection areas and recharge areas.
- (c) Regulation of the migration of contaminated groundwater.
- (d) The administration of a well abandonment and well destruction program.
- (e) Mitigation of conditions of overdraft.
- (f) Replenishment of groundwater extracted by water producers.
- (g) Monitoring of groundwater levels and storage.
- (h) Facilitating conjunctive use operations.
- (i) Identification of well construction policies.
- (j) The construction and operation by the local agency of groundwater contamination cleanup, recharge, storage, conservation, water recycling, and extraction projects.
- (k) The development of relationships with state and federal regulatory agencies.
- (l) The review of land use plans and coordination with land use planning agencies to assess activities which create a reasonable risk of groundwater contamination."

EMWD's Board of Directors adopted resolution No. 3039 to develop a Groundwater Management Plan for the West San Jacinto Groundwater Basin and published a Notice of Intent on August 25, 1993. The groundwater management plan for the West San Jacinto Groundwater Basin is being developed under the authority of Assembly Bill 3030 (AB 3030), which allows a local water agency to take the lead in development of a plan. Up to two years can be taken for development of a plan. Local water purveyors, both public and private, have been involved in development of the plan. There are approximately forty-five (45) pumpers in the area. Public meetings, workshops and hearings were held during the preparation of the draft plan. Cooperative agreements with EMWD have already been signed by Nuevo Water Company, Edgemont Gardens Mutual Water District and the City of Perris.

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INTRODUCTION

APPROACH TO DEVELOPMENT OF GROUNDWATER MANAGEMENT PLAN

EMWD's approach to developing a groundwater management plan consists of the following elements:

- Establishing a clear set of management goals;
- Resolving major uncertainties in the knowledge of the groundwater resources;
- Integration of the planning activities and goals of all interested entities;
- Evaluation of the benefits, costs and impacts to interested entities; and
- Providing an environment that obtains consensus at key decision points in the plan development.

A set of management goals must be established early in the plan development process. These goals can be modified during the plan development process. These goals will determine the magnitude of the plan, beneficiaries of the plan, and will guide the technical work that shapes the plan.

There are many uncertainties regarding hydrogeology, hydrology and water quality of the West San Jacinto Groundwater Basin (management area). The entities having an interest in the groundwater management plan have different interpretations of the management area groundwater resources and management issues affecting these resources. Therefore, one of the first steps in the planning process is to develop a complete description of groundwater resources that is understood and accepted by the entities having an interest in the plan.

The water development and wastewater management activities of the entities having an interest in the management area must be integrated into the groundwater management plan. This does not mean that these activities will be included in the plan; rather, these activities will be accommodated in the plan. The plan development process must identify and describe all relevant water development and wastewater planning activities in the management area.

The benefits, costs and other impacts must be evaluated for entities having an interest in the management area. Equity among these entities must be incorporated into the plan in order for the plan to be accepted and implemented. Therefore, the plan development process must include steps to identify and evaluate the benefits, costs and other impacts to the interested entities.

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INTRODUCTION

The plan development process will succeed only if there is consensus among the interested entities. Therefore, the process must provide an environment conducive to consensus. The first step to gaining consensus is to invite all the potentially interested entities in the management area to participate in the plan development process. Workshops and meetings were held to inform interested parties during the plan development process. EMWD took the leadership role in the plan development and in disseminating information regarding the plan to all interested parties.

**PURPOSE OF THIS REPORT**

The purpose of this report is to:

- document what is known about the groundwater resources and water supply needs;
- develop management goals;
- describe the elements of a groundwater management plan consistent with plan goals; and
- describe the management plan; and
- describe what additional information will be required to develop and implement the groundwater management plan.

This report describes the types of groundwater management practices that are being used in other groundwater basins and their applicability to the West San Jacinto Groundwater Basin. The types of information necessary to implement these groundwater management elements are also described. This report presents groundwater management practices in the context of the future water demands and the water resources of the management area. Finally, this report describes a groundwater management plan for the West San Jacinto Groundwater Basin and a program to implement the management plan.

Implementation of the groundwater management plan will occur over the next 20 to 40 years. As mentioned above, information describing the groundwater basins is inadequate to definitively describe the groundwater management plan. New information will need to be developed during plan implementation. Over the course of the next 20 to 40 years, new technologies, water quality standards and operating concepts will be developed. Therefore the management plan must have

alternatives to achieve the management plan goals and be flexible to accommodate future changes.

## ORGANIZATION OF THIS REPORT

This report consists of eight sections and two appendices. The remaining seven sections of this report are:

*Section 1 Executive Summary*

*Section 3 Existing Water Resources Management Framework*

*Section 4 Groundwater Resources in the West San Jacinto Basin*

*Section 5 Future Water Demands and Wastewater Flows*

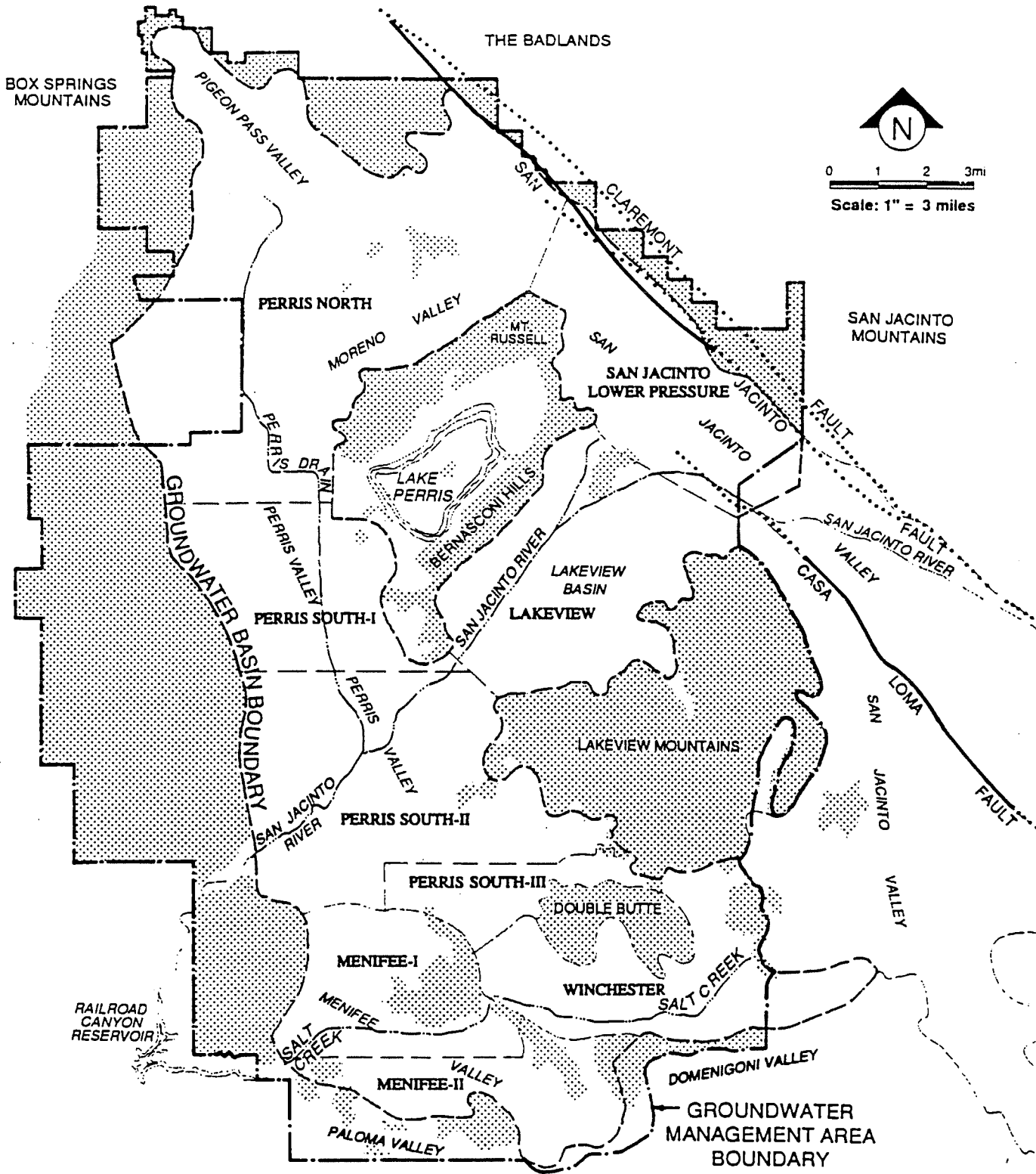
*Section 6 Groundwater Management Goals*

*Section 7 Elements of the Groundwater Management Plan*

*Section 8 Description of the Groundwater Management Plan*

## ACKNOWLEDGMENTS

A great deal of research and data gathering went into the preparation of this study and report. Assistance in research, data gathering and plan formulation was provided by the staff of EMWD, in particular Dr. Behrooz Mortazavi and Dr. P. Ravishanker. Their help was greatly appreciated.



**LEGEND:**




-  NONWATER-BEARING PORTION
-  KNOWN FAULTS
-  INFERRED OR CONCEALED FAULTS

Figure 2-1  
**LOCATION MAP**

REFERENCE: DEPARTMENT OF WATER RESOURCES, SOUTHERN DISTRICT, 1977.

**SECTION 3**



## SECTION 3 EXISTING WATER RESOURCES FRAMEWORK

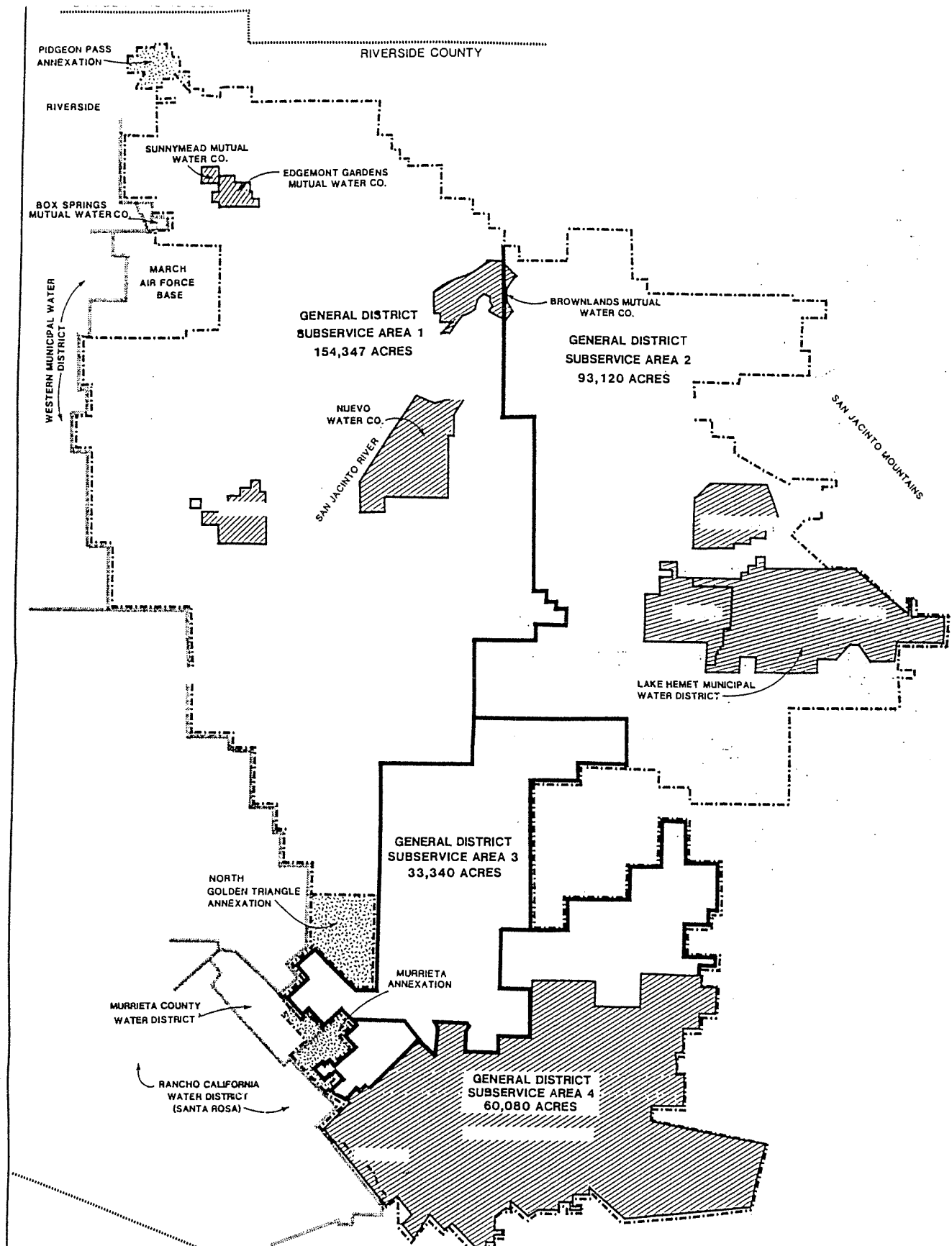
This section describes the existing institutional and regulatory framework for the groundwater management plan. First, the agencies that sell, import and otherwise provide water for the management area are listed and described. The regulatory constraints for the management of wastewater and drinking water are also described.

### WATER SUPPLY AND WASTEWATER AGENCIES






#### Eastern Municipal Water District

EMWD encompasses over 540 square miles in the western portion of Riverside County as shown on Figure 3-1. It is bounded on the west by Western Municipal Water District, on the north by mountains which approximately parallel the San Bernardino County boundary, on the east by the San Jacinto Mountains, and on the south by mountains which parallel the San Diego County line. Only about half of the area within EMWD's boundary receives water service at this time. Other areas will receive service by EMWD as they develop. EMWD is the only wastewater treatment entity in the West San Jacinto groundwater management area. EMWD's sphere of influence extends easterly to the San Jacinto and Santa Margarita watershed boundaries.

EMWD has divided its service area into four subservice areas for the distribution of water as shown on Figure 3-2. The divisions are based on location, local water resources, existing water deliveries, and proximity to sources of imported water. Water can be transferred from one subservice area to another. Each subservice area encompasses a specific section of EMWD. Service Area 41, which is mainly supplied by MWD's Mills Filtration Plant, includes Moreno Valley, Perris and the community of Sun City. The area including the cities of Hemet and San Jacinto and unincorporated Winchester is supplied mainly by well water and is in Subservice Area 42. Subservice Area 43 encompasses the Antelope-French-Domenigoni Valley and the



**LEGEND**

-  PENDING ANNEXATIONS
-  SUBAGENCIES
-  ADJOINING WATER AGENCIES
-  SUBSERVICE AREA BOUNDARY
-  DISTRICT BOUNDARY


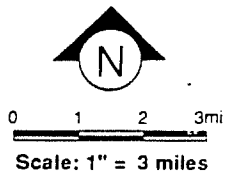
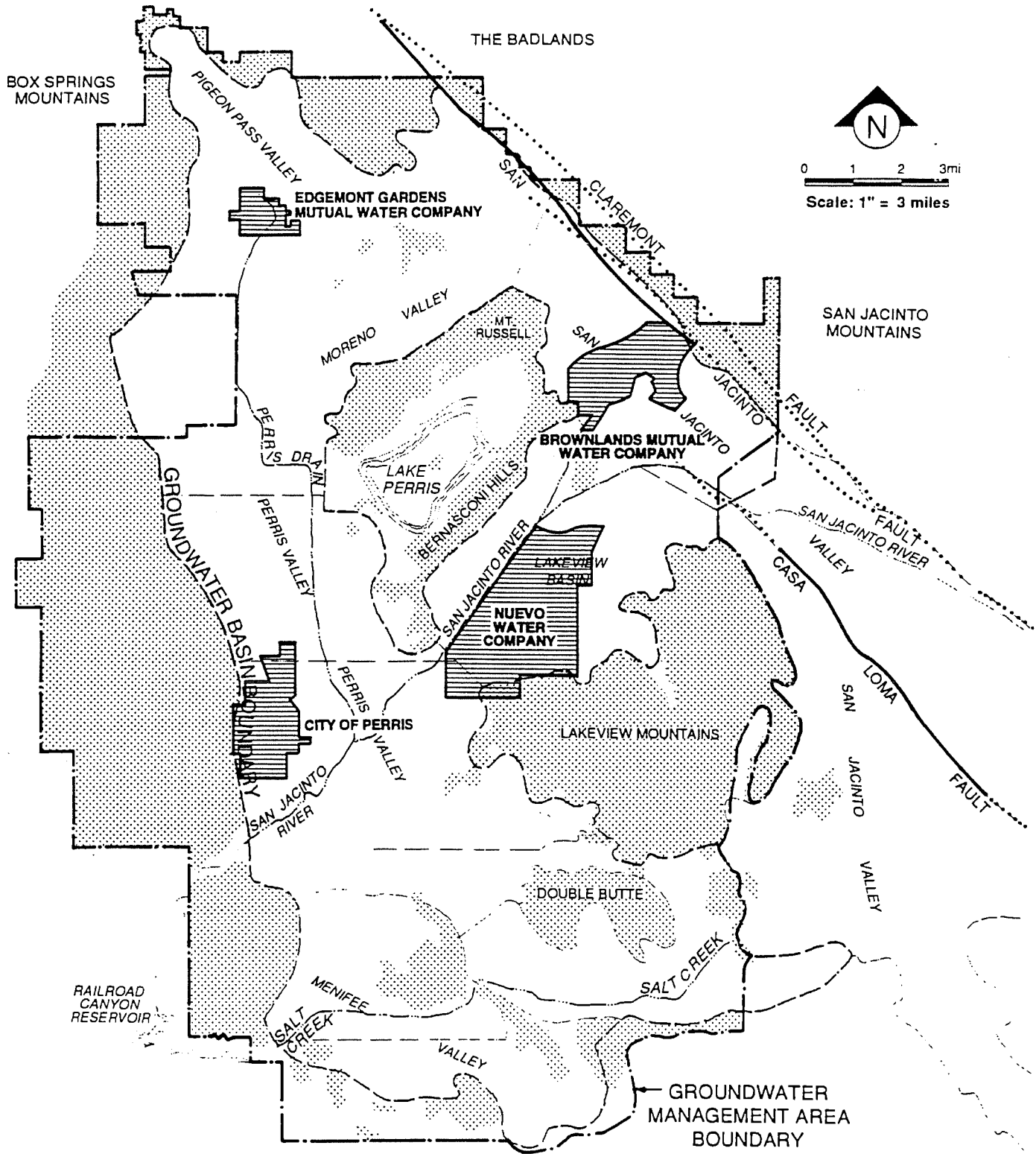


FIGURE 3-1  
DISTRICT BOUNDARY MAP  
EASTERN MUNICIPAL WATER DISTRICT

SOURCE: VOL. II, EMWD WATER FACILITIES MASTER PLAN; BLACK & VEATCH, JMM: OCT, 1990



**LEGEND:**




-  NONWATER-BEARING PORTION
-  KNOWN FAULTS
-  INFERRED OR CONCEALED FAULTS

Figure 3-2  
**SUBAGENCIES**

**SECTION 3  
EXISTING WATER RESOURCES FRAMEWORK**

Murrieta Hot Springs Region of EMWD. The Golden Triangle and Dutch Village developments are also located in this subservice area and will eventually receive almost their entire supply from MWD's Skinner Filtration Plant. At the extreme southern end of EMWD is the historic town of Temecula and surrounding Rancho California which is a rapidly developing, planned 87,500 acre, agricultural, industrial, commercial and residential community which is bisected by Interstate 15. Temecula and the eastern 41,000 acres of Rancho California are located in Subservice Area 44. The water supply to this area is from the Rancho California Water District, which is a subagency of EMWD. The supply for the area is well water supplemented with water from MWD's Skinner Filtration Plant.

EMWD has agreed to supply water on a wholesale basis to eight public entities and companies, four of which are in the West San Jacinto Groundwater Management area. Water requirements by these subagencies varies depending on development and the availability of local supplies. These entities and public agencies include the Brownlands Mutual Water Company, city of Hemet, city of Perris, city of San Jacinto, Edgemont Gardens Mutual Water Company, Lake Hemet Municipal Water District, Nuevo Water Company, and Rancho California Water District. EMWD also supplies water, wholesale, to Elsinore Valley Municipal Water District and March Air Force Base, in accordance with contracts with Western Municipal Water District. The entities and public agencies within the West San Jacinto Groundwater Management area are shown in Figure 3-2 and are described below.

**City of Perris.** The city of Perris relies entirely on EMWD for its supply since local well water is high in TDS and chlorides. Water is supplied directly through three connections to EMWD's 1627 (Perris) pressure zone, and is provided on a demand basis. The city has water storage facilities consisting of a 1.0 MG and a 1.25 MG steel tank which have high water elevations of 1,595 feet.

**Nuevo Water Company.** Nuevo Water Company encompasses approximately 4,064 acres and supplies approximately 1,260 connections. The company has two wells with capacities of 1.01 mgd (700 gpm) and 0.58 mgd (400 gpm) and a 12-inch connection to EMWD's system. District water is used only as a supplemental supply to meet total maximum day summer demands of approximately 2.3 mgd.

**Edgemont Gardens Mutual Water Company.** Edgemont Gardens Mutual Water Company serves 661 acres and approximately 950 connections in the city of Moreno Valley. Their supply is provided by two 350-gpm wells and three connections to EMWD. Water from EMWD is used

SECTION 3  
EXISTING WATER RESOURCES FRAMEWORK

to supplement their normal supply and to provide fire protection since their system does not have water storage facilities.

**Brownlands Mutual Water Company.** Brownlands Mutual Water Company encompasses 2,042 acres east of Lake Perris near the Badlands. The company does not have a water system and consequently, does not provide water service. A connection to EMWD's system has never been constructed for this subagency. In the future these areas will probably be supplied directly by EMWD.

**Metropolitan Water District of Southern California**

Metropolitan Water District of Southern California (Metropolitan) is a wholesale water agency serving supplemental imported water to 27 member cities and water agencies in portions of Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura counties. This service area has a current population of about 15 million people. Approximately one-half of the total water used throughout the entire Metropolitan service area is imported water purchased from Metropolitan to supplement the local water supplies of the study area. Metropolitan obtains imported supplies from the Colorado River and the State Water Project (SWP). Figure 3-3 shows the locations of Metropolitan's, state and EMWD imported water facilities.

Colorado River Water. The Colorado River Aqueduct, owned and operated by Metropolitan, transports water from Lake Havasu on the Colorado River, 242 miles to its terminus at Lake Matthews in Riverside County. Construction of the Colorado River Aqueduct began in 1931 and the first deliveries of water to member agencies took place in 1941.

Metropolitan's total entitlement to Colorado River water is approximately 1.39 million acre-ft/yr. This entitlement consists of a fourth priority right to 550,000 acre-ft/yr, a fifth priority right of 662,000 acre-ft/yr and surplus contract rights of 180,000 acre-ft/yr. Several irrigation districts hold higher priority rights to 3.85 million acre-ft/yr. Certain Indian reservations, towns and individuals also hold present perfected rights that predate Metropolitan's rights. In 1964, the United States Supreme Court limited California's diversions on a dependable basis to 4.4 million acre-ft/yr in the case *Arizona v. California*. As such, Metropolitan's diversions from the Colorado River on a dependable basis were limited to less than 550,000 acre-ft/yr. During declarations of surplus, Metropolitan has the highest priority of any California contractor to divert these surplus waters.

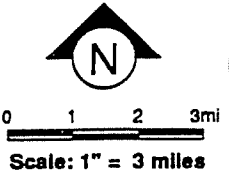
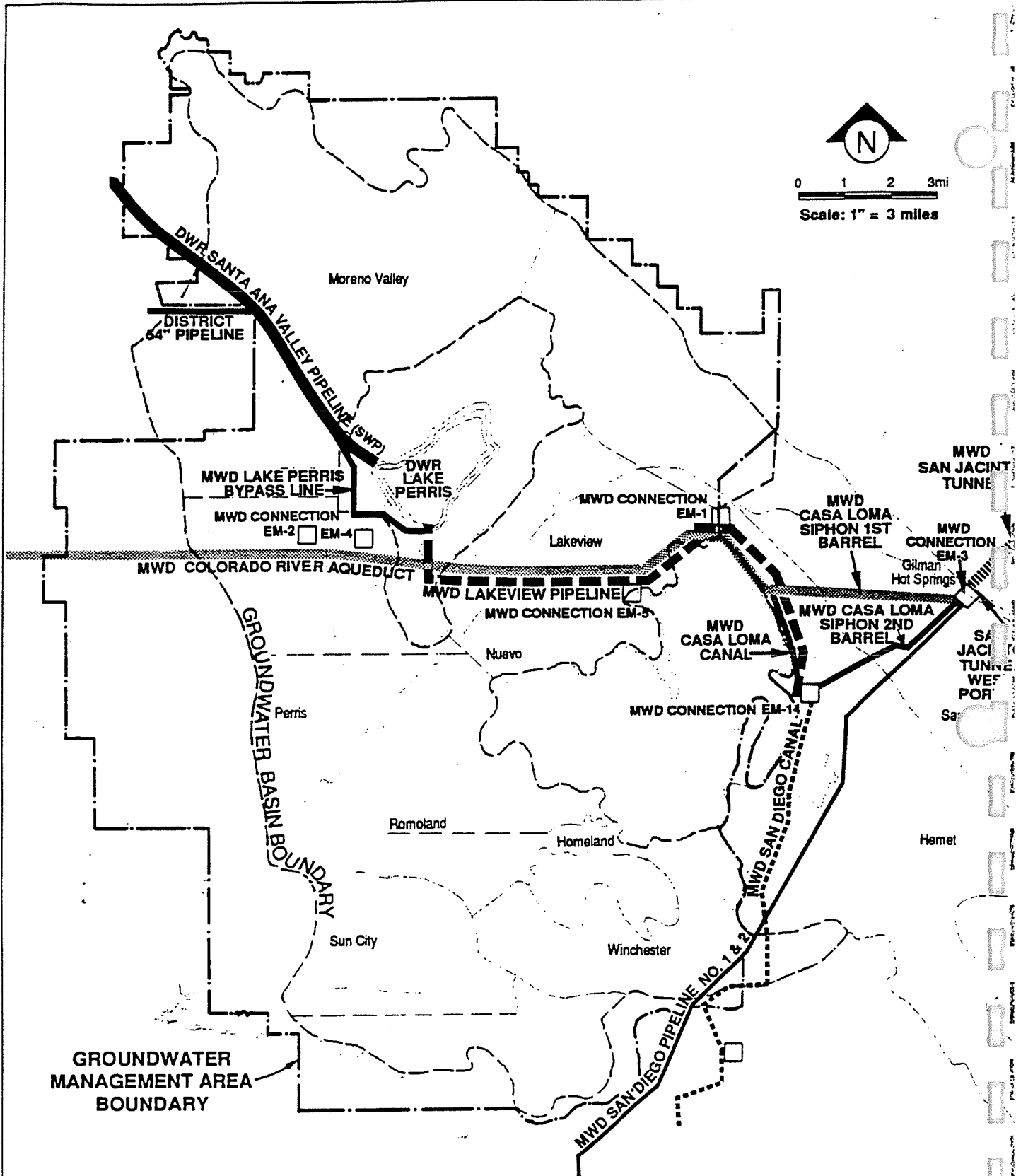


Figure 3-3  
**IMPORTED  
WATER  
FACILITIES**

REFERENCE: EMWD WATER FACILITIES MASTER PLAN, FIG. 4-3: SOURCES OF SUPPLY MAP, OCTOBER, 1990.

SECTION 3  
EXISTING WATER RESOURCES FRAMEWORK

The Secretary of the Interior has the discretion to allow California to use any water that Arizona and Nevada have available from the Colorado River, but do not use. It is difficult to predict the criteria the Secretary will use in determining whether to release unused water to California. If the agricultural agencies in California do not use the entire supply available to them, Metropolitan has the right to divert the unused portion. Although agricultural use was less than 3.85 million acre-ft/yr throughout much of the mid 1980's, there was no unused agricultural priority water available in 1989.

Metropolitan is actively seeking additional water supplies from the Colorado River. Metropolitan recently signed a long-term agreement with the Imperial Irrigation District that will yield 106,110 acre-ft/yr of Colorado River water from implementation of specific water-saving measures. Metropolitan is pursuing several other projects to obtain increased Colorado River supplies including:

- Additional water conservation measures with Imperial Irrigation District
- Lining of the All-American and Coachella Canals to stop water seepage losses
- Groundwater storage project on the East Mesa of Imperial County
- Land fallowing program with Palo Verde Irrigation District

If all of these projects are implemented, Metropolitan's total Colorado River supplies could be about 1,000,000 acre-ft/yr by the year 2000 (Montgomery Watson, 1993).

State Project Water. Metropolitan's second source of water is the State Water Project (SWP). The SWP is owned by the State of California and operated by the California Department of Water Resources (DWR). This project transports water from the Sacramento-San Joaquin Delta via the California Aqueduct to thirty contract agencies in the state. The total length of the California Aqueduct is 444 miles.

Metropolitan has an entitlement to SWP water of 2,011,500 acre-ft/yr out of a total maximum contractual entitlement of 4.23 million acre-ft/yr for the 30 contractors. As currently developed, and under current Delta water quality standards, the SWP has an average yield during extended dry periods of approximately 2.4 million acre-ft/yr. Requested deliveries for 1993 totaled 3.6 million acre-ft/yr (agricultural contractors have had a 100 percent deficiency applied against them). Initial deliveries were estimated to be ten percent of the requests before the recent wet



SECTION 3  
EXISTING WATER RESOURCES FRAMEWORK

period. Demands for SWP water are expected to increase to 4.15 million acre-ft/yr by the year 2010.

Metropolitan's water supply from the SWP also faces potential limitations in the future. The current firm yield of the SWP can currently supply only about one-half of the contract entitlements due to capacity limitations of existing facilities. The State Department of Water Resources is developing a program to increase the firm yield of the SWP through a combination of additional pumping facilities at the Delta, improved water management in the Delta, new surface reservoirs, and groundwater storage. These projects are expected to increase the dry period yield to 3.2 million acre-ft/yr by the year 2010 [DWR, Bulletin 132-89]. Metropolitan is pursuing its own program of groundwater storage and water transfers from other SWP contractors to increase its firm supplies.

The State Water Resources Control Board (SWRCB) has been conducting hearings and other proceedings in an on-going process to review the water quality objectives for the San Francisco Bay/Sacramento-San Joaquin Delta estuary. The SWRCB recently proposed more stringent water quality requirements for the Delta through its draft Decision D-1630. If adopted in its current form, D-1630 is expected to reduce deliveries to the SWP, the Central Valley Project and other Delta diverters by as much as 1.2 million acre-ft/yr depending on water supply conditions in the Delta. The impact of this decision on Metropolitan is still under study; however, preliminary estimates indicate a reduction on the order of 200,000 acre-ft/yr (Montgomery Watson, 1993).

## REGULATION OF WASTEWATER

The West San Jacinto Groundwater Management plan will be influenced by the plans and policies of the Federal Environmental Protection Agency, State Water Resources Control Board, California Regional Water Quality Control Board, Santa Ana Region as well as the state and local health departments. A summary of the more important regulations of these agencies is presented in the following paragraphs.

### **Federal Environmental Protection Agency**

On October 18, 1972, Congress passed the Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500). Those amendments have been acclaimed as "one of the most significant, most comprehensive, most thoroughly debated pieces of environmental legislation

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ever to be considered by the Congress." The 1972 Act has been amended several times. The 1977 Amendments included a change in name to the Clean Water Act; however, the Act's goals and policy remain the same. Section 101(a) of the Act states:

The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. In order to achieve this objective it is hereby declared that, consistent with the provisions of this Act--

- (1) it is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985;
- (2) it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection of and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983;
- (3) it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited;
- (4) it is the national policy that Federal financial assistance be provided to construct publicly owned waste treatment works;
- (5) it is the national policy that area wide waste treatment management planning processes be developed and implemented to assure adequate control of sources of pollutants in each State; and
- (6) it is the national policy that a major research and demonstration effort be made to develop technology necessary to eliminate the discharge of pollutants into the navigable waters, waters of the contiguous zone, and the oceans.

To reach these goals, the Act requires that a discharge of waste or waste-containing water be of a specified, improved quality before its release from a point source to the receiving water, or in some cases, that the discharge be prohibited. To assure that the improved quality is attained, the Act provides a new authority to the Federal and State governments to continue and fully develop a basin plan program as well as a national permit system. These two programs are discussed later in this Section under the California Regional Water Quality Control Board, Santa Ana Region.

#### **State Water Resources Control Board**

California's Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) establishes the responsibilities and authorities of the State Water Resources Control Board and the nine Regional Water Quality Control Boards. That Act names the Boards "...the principal state agencies with primary responsibility for the coordination and control of water quality."

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In carrying out this responsibility, the State Water Resources Control Board coordinates and oversees the activities of the nine Regional Boards. It has also adopted several statewide policies controlling specific aspects of water quality. These policies which apply to the Santa Ana Region's Water Reclamation Program include:

**Nondegradation Policy (1968).** This is the single most important statewide water quality control policy (CRWQCB, SAR, 1984). It was adopted as SWRCB Resolution No. 68-1 "Statement of Policy with Respect to Maintaining High Quality Waters in California". This policy requires that high quality water be maintained and protected unless: (1) allowing some degradation is clearly in the best interests of the people of California as a whole, (2) that allowable degradation does not preclude an identified (present or future) beneficial use, and (3) that the applicable Basin Plan or some statewide policy takes note of the change in question and concedes that it is appropriate.

**Reclamation Policy (1977).** The "Policy and Action Plan for Water Reclamation in California" recognizes the present and future need for increased amounts of water in California, primarily to support growth. This policy commits both the State Board and the nine Regional Boards to support reclamation and reclamation projects which are consistent with sound principles and demonstrated needs.

### **California Regional Water Quality Control Board, Santa Ana Region**

The California Regional Water Quality Control Board, Santa Ana Region, controls water quality within its region by adoption and implementation of a basinwide water quality control plan (Basin Plan) and waste discharge requirements for individual dischargers within its region. These two programs, as they relate to the West San Jacinto Groundwater Management Plan, are discussed in the following paragraphs.

**Basin Plan.** The Porter-Cologne Act directs each Regional Board to "...formulate and adopt water quality control plans for all areas within the region." A water quality control plan is defined as having three components: beneficial uses which are to be protected, water quality objectives which protect those uses, and an implementation plan which accomplishes the water quality objectives. For the Santa Ana Region, the original basin plan was adopted in 1975 and amended in 1983. As required, that plan is again being reviewed and updated where necessary.

SECTION 3  
EXISTING WATER RESOURCES FRAMEWORK

The objective of that plan entitled: "Water Quality Control Plan for the Santa Ana River Basin (8)" is to show how the quality of the surface and ground waters in the Santa Ana Region should be controlled to provide the maximum benefit possible. As stated in that plan:

The uses made of water and the benefits derived from it are varied, and the quality of the water is an important factor. For example, drinking water has to be of higher quality than water used to irrigate pastures. Both are legitimate uses, but the quality requirements for irrigation are different from those for domestic use. The plan recognizes such variations. First, it lists the uses to which the various waters are put (Beneficial Uses, Chapter 3). Second, it describes the water quality which must be maintained to allow those uses (Water Quality Objectives, Chapter 4). Federal terminology is somewhat different, in that beneficial uses and water quality objectives are combined and the combination is called Water Quality Standards. Chapter 5, the Implementation Plan, then describes the programs, projects and other actions which are necessary to achieve the goals of this plan. Chapter 6, Monitoring and Assessment, discusses the impacts the plan will have.

Applicable sections of the 1994 Basin Plan are summarized in the following paragraphs.

Beneficial uses. Beneficial uses that are to be protected in the West San Jacinto Groundwater Management Plan are shown in Tables 3-1 and 3-2.

Water Quality Objectives. The narrative objectives below apply to all inland surface waters, including bays and estuaries, and to groundwaters, as noted within the region. In addition, specific numerical objectives are listed in Tables 3-3 and 3-4. Where more than one objective is applicable, the stricter shall apply.

Trace constituents. The concentrations of trace constituents in groundwaters designated MUN shall not exceed the values listed immediately below.

Arsenic	0.05 mg/l	Iron	0.3 mg/l
Barium	1.0 mg/l	Lead	0.05 mg/l
Cadmium	0.01 mg/l	Manganese	0.05 mg/l
Chromium	0.05 mg/l	Mercury	0.002 mg/l
Cobalt	0.2 mg/l	Selenium	0.01 mg/l
Cyanide	0.2 mg/l	Silver	0.05 mg/l
Fluoride	1.0 mg/l		

### California Department of Health Services

Recharge of reclaimed water can occur through surface spreading, direct injection and by over irrigation. Recharge by percolation and injection is subject to regulatory approval. The Department of Health Services (DHS) has released proposed regulations for planned recharge projects that recharge reclaimed water. If the proposed regulations are adopted, strict criteria

**TABLE 3-1  
BENEFICIAL USES OF SURFACE WATERS**

Water Body	Municipal and Domestic Supply	Industrial Service Supply	Agricultural Supply	Groundwater Recharge	Water Contact Recreation	Non-contact Water Recreation	Warm Freshwater Habitat	Wildlife Habitat	Cold Freshwater Habitat
San Jacinto River					I		I		
Reach 3	I		I	I	I	I	I	I	
Reach 4	I		I	I	I	I	I	I	
Canyon Lake *	X	X	X	X	X	X	X	X	X
Lake Elsinore					X	X	X	X	

I = Intermittent Beneficial Use  
 X = Present or Potential Beneficial Use  
 \*Note - Canyon Lake is Reach 2

**TABLE 3-2  
GROUNDWATER BENEFICIAL USES**

Groundwater Subbasin	Municipal and Domestic Supply	Agricultural Supply	Industrial Service Supply	Industrial Process Supply
San Jacinto - Lower Pressure	X	X	X	
Lakeview	X	X	X	X
Perris North	X	X	X	X
Perris South I	X	X		
Perris South II	X	X		
Perris South III		X		
Winchester	X	X		
Menifee I	X	X	X	
Menifee II	X	X	X	

I = Intermittent Beneficial Use  
X = Present or Potential Beneficial Use

**TABLE 3-3  
SURFACE WATER QUALITY OBJECTIVES  
(mg/l)**

Water body	Total Dissolved Solids	Total Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Biochemical Oxygen Demand	Filtered Chemical Oxygen Demand
San Jacinto River								
Reach 3	820	400		250	6		7	15
Reach 4	500	220	75	125	5	65		
Canyon Lake*	700	325	100	90	8	290		

Note - Canyon Lake is Reach 2

**TABLE 3-4**  
**GROUNDWATER QUALITY OBJECTIVES**  
 (mg/l)

Groundwater Subbasin	Total Dissolved Solids	Total Hardness	Sodium	Chloride	Nitrate as Nitrogen	Sulfate
San Jacinto - Lower Pressure	800	380	120	100	3	330
Lakeview	500	190	80	160	2	25
Perris North	300	100	70	90	3	15
Perris South I	1000					
Perris South II	2000					
Perris South III	1500					
Winchester	1200					
Menifee I	2000					
Menifee II	1500					



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must be satisfied for a planned recharge project using reclaimed water. In the interim, the Regional Board and the DHS are requiring agencies interested in recharge of reclaimed water to follow the proposed regulations. The proposed regulations are included in Appendix A-1.

The proposed regulations define four categories of recharge projects:

Project Category I - Surface spreading project that uses reclaimed water that has been oxidized (secondary treatment), filtered (tertiary treatment), disinfected and subjected to organics removal.

Project Category II - Surface spreading project that uses reclaimed water that has been oxidized (secondary treatment), filtered (tertiary treatment) and disinfected.

Project Category III - Surface spreading project that uses reclaimed water that has been oxidized (secondary treatment) and disinfected.

Project Category IV - Direct injection project that uses reclaimed water that has been oxidized (secondary treatment), filtered (tertiary treatment), disinfected and subjected to organics removal.

For project categories I and IV, the maximum amount of reclaimed water that can be captured by any well is a function of the total organic carbon (TOC) in the reclaimed water. The maximum contribution of reclaimed water at a well for categories I and IV is 50 percent. Table 3-5 shows the maximum allowable contributions of reclaimed water in a well as a function of the TOC in the reclaimed water after organics removal. Table 3-6 summarizes other important operational criteria from the proposed recharge guidelines. The maximum allowable reclaimed water contributions in any well for categories II and III is 20 percent. With the exception of nitrogen compounds, reclaimed water quality used for planned recharge projects must meet Title 22 standards for drinking water quality (Title 22, Division 4, Chapter 15, Sections 64435, 64443, 64444.5 and 64473). The total nitrogen concentration of reclaimed water used in recharge projects shall not exceed 10 mg/L as nitrogen, unless the project sponsor can demonstrate that the standard can be consistently met prior to reaching the groundwater level. The minimum retention time in the groundwater prior to production shall be six months for categories I and II, and twelve months for categories III and IV. The minimum horizontal separation between the recharge facility and a producing domestic well is 500 feet for categories I and II; 1000 feet for category III and 2,000 feet for category IV. The project sponsor must have the authority to prevent the use of groundwater for drinking water within the area required to achieve the minimum retention time and minimum horizontal separation. The proposed regulations require rigorous groundwater and reclaimed water monitoring.

**TABLE 3-5  
 MAXIMUM ALLOWABLE TOC AFTER  
 ORGANICS REMOVAL IN RECLAIMED WATER**

Reclaimed water Contribution (%)	Maximum TOC Concentration (mg/L)	
	Surface Spreading Category I	Direct Injection Category IV
0 - 20	20	5
21 - 25	16	4
26 - 30	12	3
31 - 35	10	3
36 - 45	8	2
46 - 50	6	2

**TABLE 3-6  
 KEY CRITERIA FOR RECLAIMED WATER RECHARGE PROJECT**

Criterion	Category I	Category II	Category III	Category IV
Maximum Contribution of Reclaimed Water in Water at Domestic Wells (1)	50%	20%	20%	50%
Minimum Horizontal Separation Between Point of Recharge and Domestic Wells (feet)	500	500	1,000	2,000
Minimum Retention Time in Groundwater (months)	6	6	12	12

note - (1) see Table 7-1 for categories I and IV

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**Direct Discharge into a Water System.** A plan that involves direct discharge into a domestic water supply system or storage unit for the near future (within the next decade) is not acceptable because of the uncertain health implications. DHS will recommend against the element of a basin plan which contains such a proposal.

Where a plan requiring a near-term decision involves options or alternatives for the use or disposal of the wastewater, DHS will reject the domestic water reuse alternative and consider the remaining options as the proposals for evaluation.

Direct discharge into a water system may be presented in a plan as a future option which may be appraised as additional information becomes available and future needs and attitudes are clearer.

### **REGULATION OF DRINKING WATER**

A summary of existing and proposed water quality standards is presented in Appendix A-2. Both primary Maximum contaminant Levels (MCLs) and Secondary Maximum Contaminant Levels (SMCLs) are shown as proposed, promulgated, and implemented by EPA and DHS. The more rigorous of the two standard MCLs for any contaminant must be satisfied.

### **LOCAL PLANNING AND REGULATORY AGENCIES**

Other local agencies that may have a significant influence on groundwater management include:

Riverside County Flood Control and Water Conservation District. This agency plans, constructs and operates flood control and water conservation facilities in Riverside County. The construction of flood control and water conservation facilities affects the volume of recharge to groundwater and thus has a potentially significant impact.

Riverside County Planning. Riverside County Planning Department develops and reviews general plans for all unincorporated areas in the county. Thus this agency will review the groundwater management plan for consistency with general plans under their jurisdiction.

Riverside County Health Department. The Riverside County Health Department will review water supply and wastewater plans that could be embodied in the groundwater management plan.

SECTION 4

## SECTION 4 GROUNDWATER RESOURCES IN THE WEST SAN JACINTO BASIN

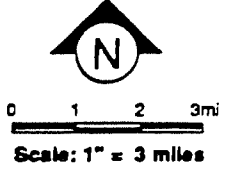
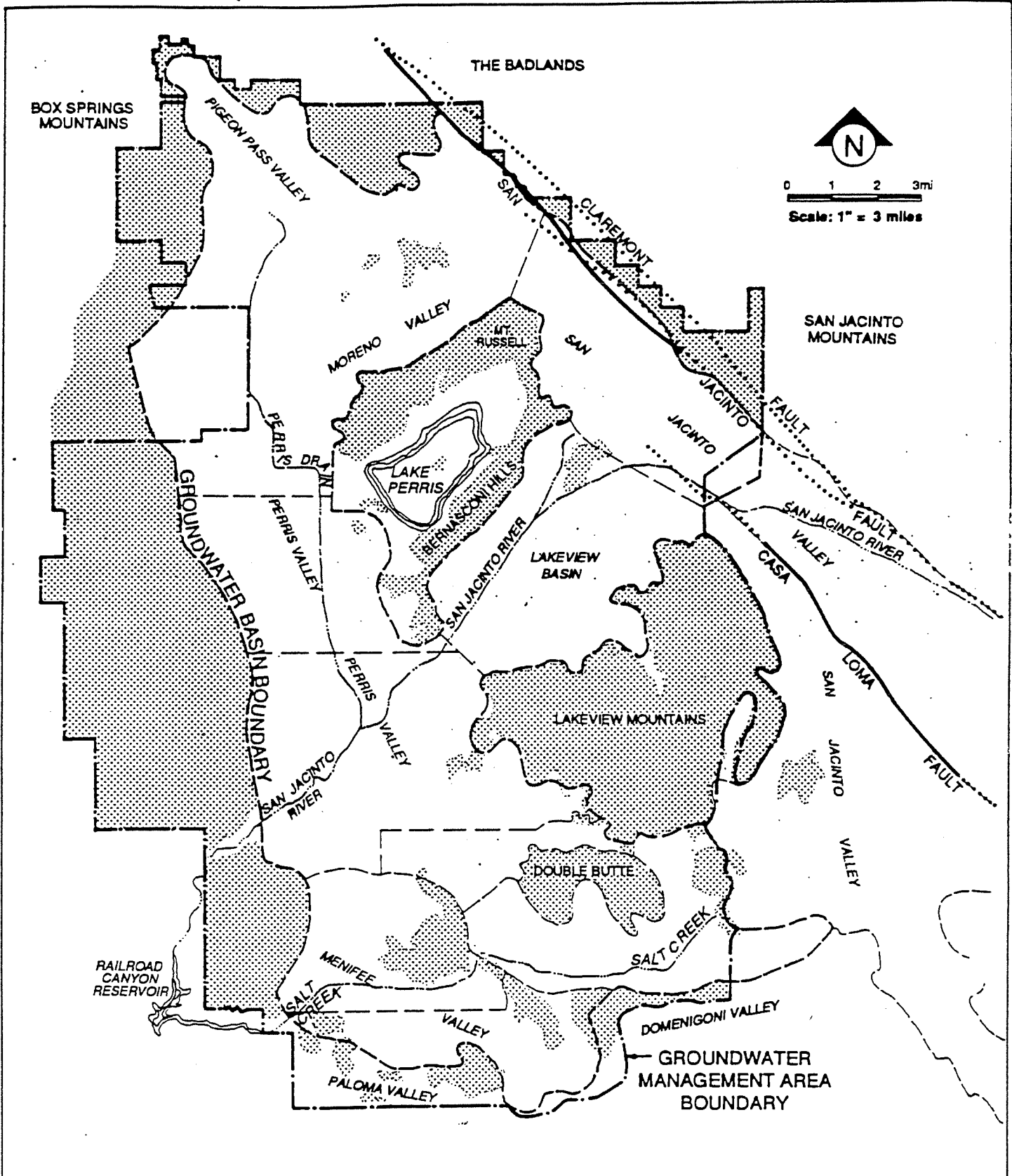
### PHYSICAL FEATURES

Figure 4-1 shows the major physical features, waterbearing and non-waterbearing areas of the groundwater management area. The major physical features in the study area include the San Jacinto mountains, the Badlands, the San Jacinto River, Salt Creek, Perris Valley Drain, the San Jacinto and Casa Loma faults, the Lakeview mountains, the Bernasconi Hills, and Double Butte. The management area groundwater basins are shown in Figure 4-2 and include the Perris North, Perris South I, II and III, Menifee I and II, Winchester, Lakeview and the San Jacinto Lower-Pressure subbasins.

The San Jacinto mountain range, which dominates the area, was formed about 130 million years ago when subsurface activity thrust the igneous (formed under extreme heat) rock upward. Continued erosion reduced the mountain range and its adjacent area, and the resulting sediments were deposited in the valleys of the management area. These are called alluviated valleys and the deposited sediments are termed alluvium (California Department of Water Resources, 1978). The aquifers in the management area consist of interbedded gravels, sands, silts, and clays. In general, coarser alluvium occurs near the sources of the alluvium and the finer alluvium occurs further away from the sources. The sources of alluvium include the mountains, hills and badland areas that border the management area. Coarser alluvium also occurs in the vicinity of significant streambeds grading to finer alluvium away from the streambeds.

### The Perris Subbasins

The Perris Basin has been subdivided into Perris North, Perris South-I, Perris South-II and Perris South-III subbasins. This division is based on water quality variations and has no hydrologic






- LEGEND:**
-  NONWATER-BEARING PORTION
  -  KNOWN FAULTS
  -  INFERRED OR CONCEALED FAULTS

Figure 4-1  
**MAJOR PHYSICAL FEATURES**

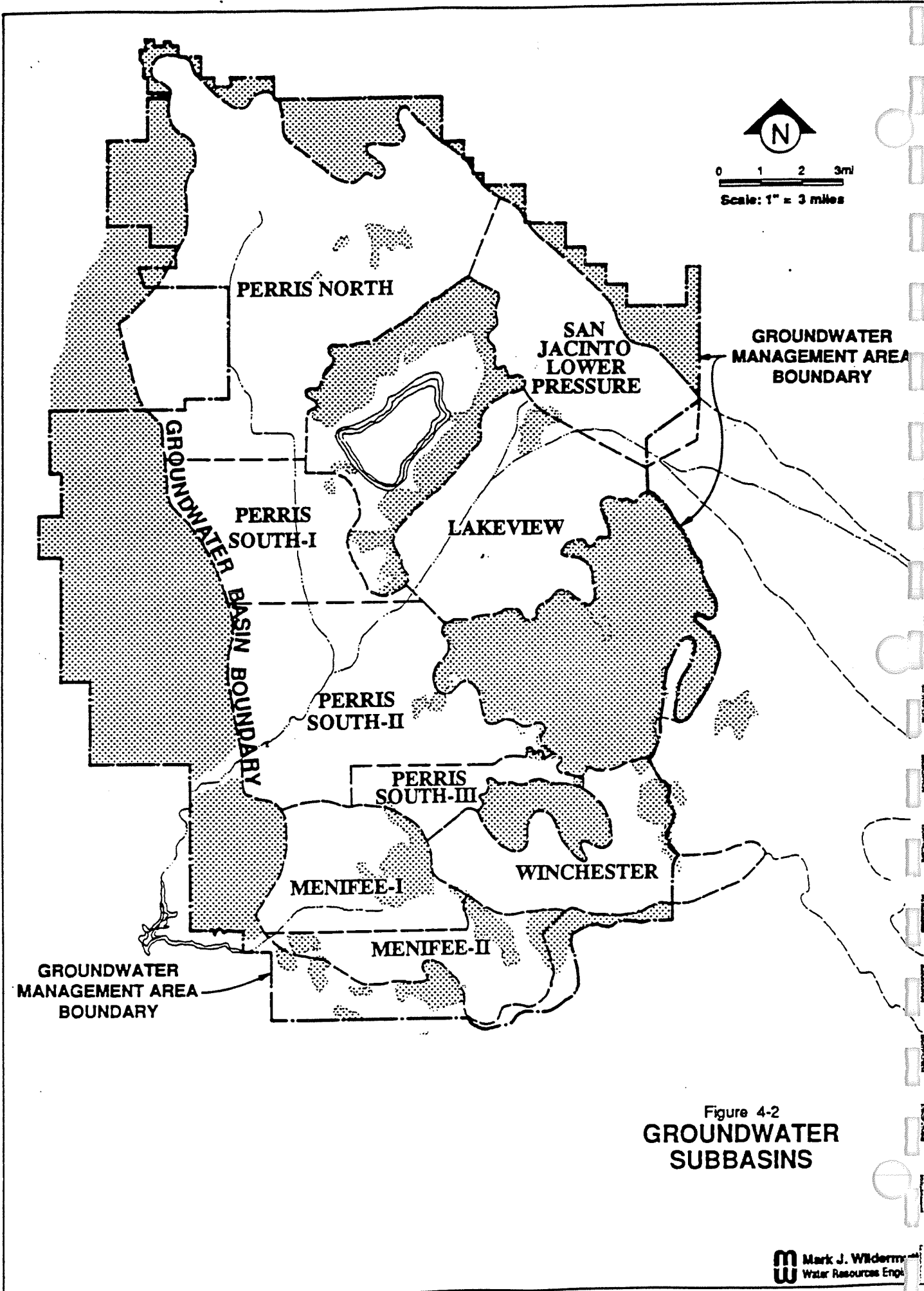


Figure 4-2  
**GROUNDWATER  
 SUBBASINS**

SECTION 4  
GROUNDWATER RESOURCES IN THE WEST SAN JACINTO BASIN

significance. The Perris North subbasin is bounded on the north by Box Springs Mountains and the Badlands; on the east by San Jacinto Lower-Pressure subbasin and unnamed hills north of Lake Perris; on the south by the Perris South-I subbasin and on the west by a series of extensive non-waterbearing hills and plateaus.

The Perris South-I subbasin is bounded on the north by the Perris North subbasin; on the east by the southerly extension of the Bernasconi Hills; on the south by the Perris South-II subbasin and on the west by a series of extensive non-waterbearing hills and plateaus.

Perris South-II is bounded on the North by the Perris South-I subbasin, on the east by the Lakeview subbasins and the Lakeview mountains; on the south by the Menifee-I and Perris South-III subbasins; and on the west by a series of extensive non-waterbearing hills and plateaus.

The Perris South-III subbasin is bounded on the north and west sides by the Perris South-II subbasin; on the east by the Lakeview mountains and the Winchester subbasin; and on the south by the Double Butte hills, the Winchester subbasin and the Menifee-I subbasin.

The Perris subbasins are considered one hydrologic basin. The Perris North subbasin consists of tonalite and granodiorite mountains surrounding alluvium and older alluvium to 600 feet in depth, over tonalite and granodiorite basement rocks. The northeasterly section near Moreno consists of alluvium up to about 850 feet in depth, over undifferentiated granitic basement rocks.

The Perris South I and Perris South II subbasins consist of alluvium at depths ranging from a few hundred to 1,000 feet, extending southerly, through the mid Perris Valley and into the Menifee subbasin to the south. The base of the aquifer consists of tonalite and granodiorite basement rocks. Mountains composed of tonalite and granodiorite basement rocks bound the southwestern and southeastern area. Clays and gravels are in the central and southern sections, with waterbearing sediments beginning at a depth of 100 feet.

Table 4-1 summarizes available well test data and aquifer characteristics (California Department of Water Resources, 1978). The depth of wells in the Perris North and South subbasins is reported to range from 200 to 800 feet below ground surface (ft-bgs), with production rates ranging from 90 to about 1,000 gallons per minute (gpm). Based on interpretation of well efficiency tests, the transmissivity of these subbasins is estimated to range between 3,600 to 64,800 gallons per day, per foot (g/d/ft). Transmissivity is a measure of how well the aquifer



**TABLE 4-1  
AVAILABLE PUMP TEST DATA  
WELL CHARACTERISTICS AND AQUIFER PROPERTIES**

Basin	Number of wells	Depth of Wells (ft-bgs)			Production (gpm)			Transmissivity (gpm/ft/day)			Specific Yield		
		Low	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg
Perris	42	200	800	440	90	1,000	400	3,600	64,800	16,200	0.04	0.14	0.08
Lakeview	31	300	1,000	450	100	2,000	690	1,800	90,000	34,200	0.04	0.16	0.12
Winchester	9	200	600	450	100	850	300	3,600	14,400	10,800	0.04	0.11	0.09
Menifee	7	100	600	500	10	1,000	330	1,800	108,000	23,400	0.06	0.11	0.08

Source: Water Resources Evaluation of the San Jacinto Area, DWR, 1978; Plate 2, TIR 1335-11-A-2 Preliminary Evaluation of Storage Capacity and Specific Yield of Groundwater Basins in the San Jacinto Study by Area.

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GROUNDWATER RESOURCES IN THE WEST SAN JACINTO BASIN

transmits water. Transmissivities for large municipal wells usually exceed 30,000 g/d/ft, with larger values being better. Specific yield is a measure of the aquifer's ability to store water. Specific yield is numerically equal to the fraction of the water that, after saturation, can be drained by gravity from the unit volume of the aquifer. Larger values of specific yield imply greater storage capacity and less regional drawdown. Based on well construction logs, the specific yield in the Perris subbasins is estimated to range from .04 to .14.

### **The Menifee Subbasins**

The Menifee basin has been subdivided into the Menifee-I and Menifee-II subbasins. As with the Perris subbasins, this division is based on water quality variations and has no hydrologic significance. The Menifee-I subbasin is bounded on the North by the Perris South-II and Perris South-III subbasins; on the east by unnamed hills and the Winchester subbasin; on the south by Menifee-II subbasin and on the west by a series of extensive non-waterbearing hills and plateaus.

The Menifee-II subbasin is bounded on the north by the Menifee-I and Winchester subbasins and unnamed hills; on the east by Domenigoni Valley; and on the south by a saddle-shaped feature consisting of unnamed hills and Paloma Valley.

Alluvium, up to 900 feet in the north, extends into the Railroad Canyon area in the west and toward the east and southeast boundaries. The base of the aquifer consists of tonalite and granodiorite basement rocks. Waterbearing sediments consist of coarse gravel and sandy disintegrated coarse granite. The base of the aquifer occurs at a depth of 800 feet in the center of the valley and reaches 1,200 feet in the northern and eastern portions of the valley.

Table 4-1 summarizes available well test data and aquifer characteristics. The depth of wells in the Menifee subbasins is reported to range from 100 to 600 ft-bgs, with production rates ranging from 10 to about 1,000 gpm. The transmissivity is estimated to range between 1,800 to 108,000 g/d/ft. The specific yield is estimated to range from .06 to .11.

### **Winchester Subbasin**

The Winchester subbasin is bounded on the north by the Double Butte hills and Lakeview mountains; on the east by the Hemet subbasin; on the south by a line of unnamed hills that

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GROUNDWATER RESOURCES IN THE WEST SAN JACINTO BASIN

separate the Winchester subbasin from Domenigoni and Meniffee valleys; and on the west by Perris South-III.

The western and southern sections mainly consist of alluvium from depths of a few hundred to 1,000 feet. The base of the aquifer consists of tonalite and granodiorite along the western, southern and northern boundaries and to the north are tonalite and granodiorite basement rocks and the underlying basement tonalite and granodiorites of the surrounding mountains. Clay and gravel with uniform stratification prevail except for fine sands in the northern and southern borders. Salt Creek, a San Jacinto River tributary, crosses the subbasin from east to west, providing surface drainage.

Table 4-1 summarizes available well test data and aquifer characteristics. The depth of wells in the Winchester subbasin is reported to range from 200 to 600 ft-bgs with production rates ranging from 100 to about 850 gpm. The transmissivity is estimated to range between 3,600 to 14,400 g/d/ft. The specific yield is estimated to range from .04 to .11.

#### Lakeview Subbasin

The Lakeview subbasin is bounded on the northwest by the Bernasconi hills; on the northeast by the San Jacinto Lower Pressure subbasin; on the southeast by the Lakeview Mountains; and on the southwest by the Perris South-I and Perris South-II subbasins. The subsurface geology consists mainly of alluvium reaching over 1000 feet in depth.

In the northeast section near the base of the Badlands, waterbearing sediments are at about 100 feet in sandy shales. Elsewhere, in the north and northeast sections, waterbearing sediments are at depths over 150 feet or more, in relatively thin strata, with clay predominating. The central and southern sections are clays and gravels with waterbearing sediments occurring at 100-foot depths or more.

Table 4-1 summarizes available well test data and aquifer characteristics. The depth of wells in the Lakeview subbasin is reported to range from 300 to 1,000 ft-bgs with production rates ranging from 100 to about 2,000 gpm. The transmissivity is estimated to range between 1,800 to 90,000 g/d/ft. The specific yield is estimated to range from .04 to .16.

### San Jacinto Lower Pressure Subbasin

The San Jacinto Lower Pressure subbasin is bounded by the San Jacinto Mountains on the east, Bridge Street on the south, the Casa Loma fault on the west, and the westerly line of Range 2 West on the north. This subbasin has alluvium to about 1,200 feet deep, is comprised mostly of clays and silt and produces little water. The transmissivity of the subbasin has not been characterized.

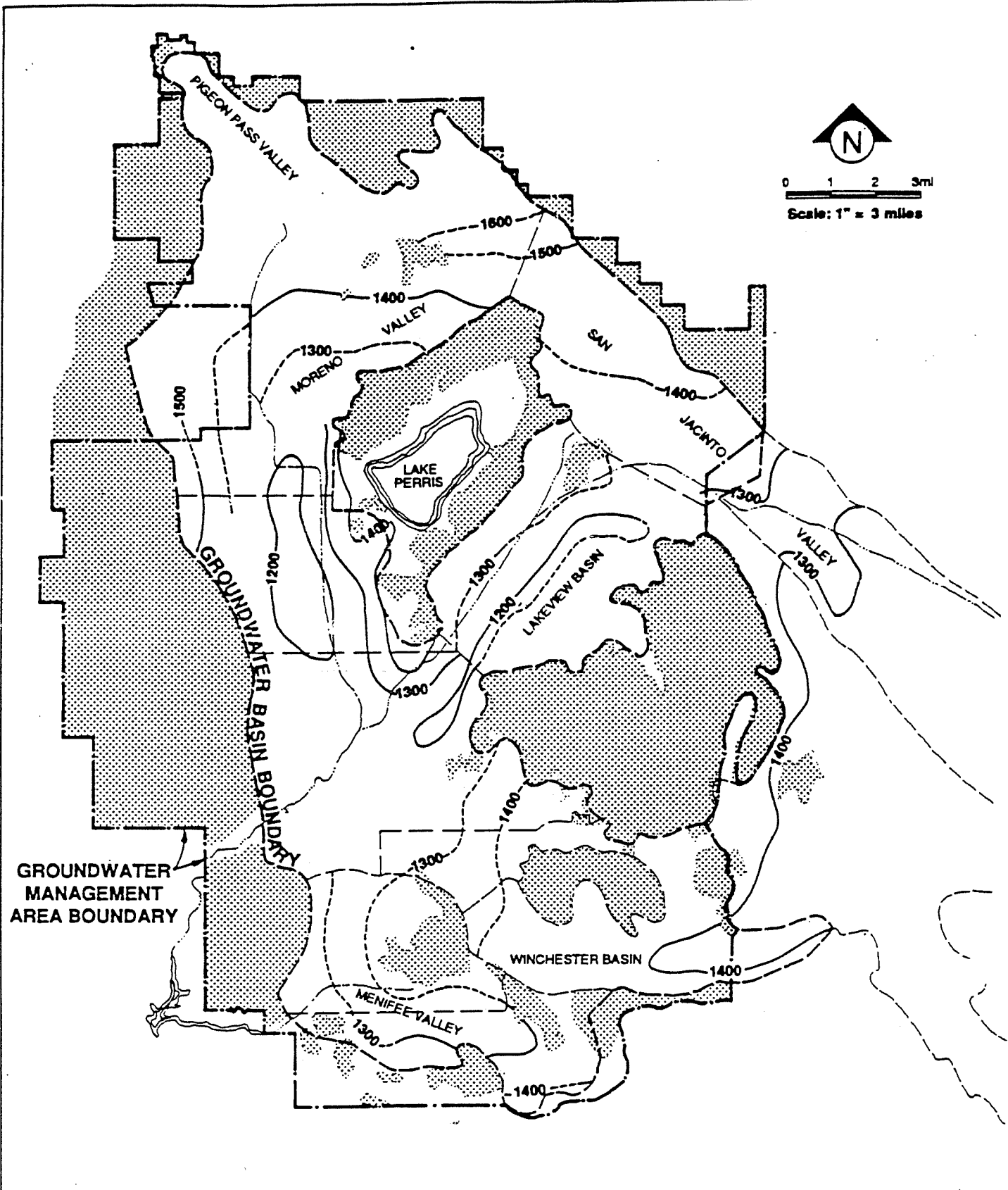
## GROUNDWATER HYDROLOGY OF THE WEST SAN JACINTO BASIN

### Groundwater Levels and Movement

Historically, the movement of groundwater generally followed the land surface profile toward and along the San Jacinto River and Salt Creek. Groundwater intersected the ground surface in San Jacinto Creek as the creek left the Perris South-II subbasin, and where Salt Creek exited the Menifee-I subbasin. The natural groundwater flow pattern has been altered by groundwater production.

Figure 4-3 is a groundwater elevation map for the West San Jacinto Groundwater basin area that corresponds to Spring 1974 conditions (California Department of Water Resources, 1978). Figure 4-4 is a comparable map for 1993. In 1974 there was subsurface flow from the San Jacinto Lower Pressure and Perris South I subbasins into Lakeview subbasin indicating that groundwater production in the Lakeview subbasin was large enough to reverse the historical groundwater flow direction from Lakeview to Perris South II subbasins. Groundwater originating in Perris North subbasin flowed into the San Jacinto Lower Pressure and Perris South subbasins. Groundwater in Perris South I flowed south to Perris South II. Groundwater in the Menifee subbasins and Winchester subbasin flowed north into Perris South II and Perris South III respectively. The groundwater from the Hemet subbasin flowed west into the Winchester subbasin.

Flow patterns have changed slightly in the intervening period of 1974 to 1993. Currently, groundwater continues to flow from the San Jacinto Lower Pressure and Perris South II subbasins into Lakeview subbasin; and from the Perris North subbasin into the Perris South I subbasin and continuing to Perris South II. The differences are as follows: there is a groundwater divide in the Menifee subbasin with some groundwater flowing north into Perris




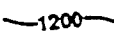

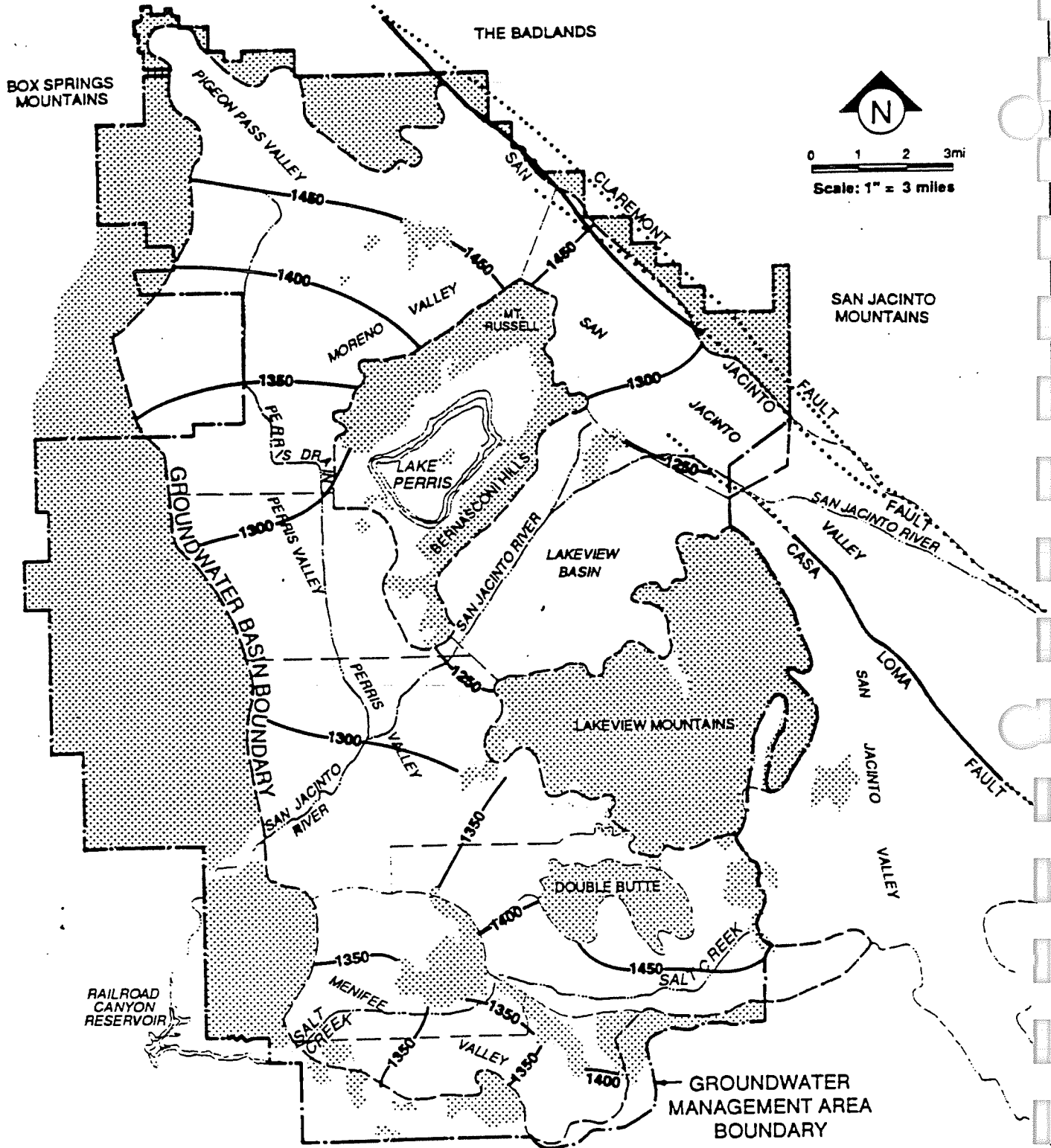
- LEGEND:**
-  NONWATER-BEARING PORTION
  -  1200 CONTOURS IN FEET BASED ON NEARBY DATA
  -  INFERRED CONTOURS

Figure 4-3  
**GROUNDWATER  
 ELEVATION MAP, 1974**

REFERENCE: DEPARTMENT OF WATER RESOURCES, SOUTHERN DISTRICT, 1977.



LEGEND:





-  NONWATER-BEARING PORTION
-  KNOWN FAULTS
-  INFERRED OR CONCEALED FAULTS
-  —1450— CONTOURS IN FEET BASED ON NEARBY DATA

Figure 4-4  
**GROUNDWATER  
 ELEVATION MAP, 1993**

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South II subbasin, the remainder to a pumping depression in the Menifee II subbasin; groundwater in the Winchester subbasin flows northwest into the Perris South III subbasin and to the east into the Hemet subbasin.

The groundwater elevation changes between 1974 and 1993 are as follows:

San Jacinto Lower Pressure	-50 to -100 feet
Perris North	generally unchanged
Perris South I	+50 to +100 feet
Perris South II	+50 to +100 feet
Perris South III	+25 to +50 feet
Menifee I	+50 feet
Menifee II	+50 feet
Winchester	+25 to +50 feet
Lakeview	slightly less

Generally, water levels will fluctuate both seasonally and on a long-term basis. Records of water levels in wells for the last 45 years generally indicate that the water table declined during the period of 1945 to the mid-seventies and recovered somewhat from the mid-1970's to the present. This long term trend was caused by a drought period that occurred from the mid 1940's to 1977, which was followed by an extremely wet period from 1978 to 1983. Agricultural use of groundwater has declined over the last twenty years without a concurrent increase in domestic groundwater usage.

Water levels are usually higher in the winter and spring months, when precipitation is greatest and there is less pumping than in the summer and fall months. When water levels in an area are declining from year to year, this indicates that more ground water is being removed from the area than is being replenished. Water levels were declining on a yearly basis through the mid 1970's. Groundwater elevation time-histories for selected wells are shown in Figure 4-5 for the Perris, Lakeview and Menifee subbasins; and Figure 4-6 for the Winchester and San Jacinto Lower Pressure subbasins. These hydrographs indicate the degree of groundwater level fluctuations that can occur in groundwater levels over the long term and seasonally.

### Groundwater Hydrology

The occurrence and quality of groundwater in the West San Jacinto Basin groundwater management area are directly affected by the volume and quality of the water that recharges the area.

**FIGURE 4-5 GROUNDWATER ELEVATION IN PERRIS, LAKEVIEW AND MENIFEE SUBBASINS**

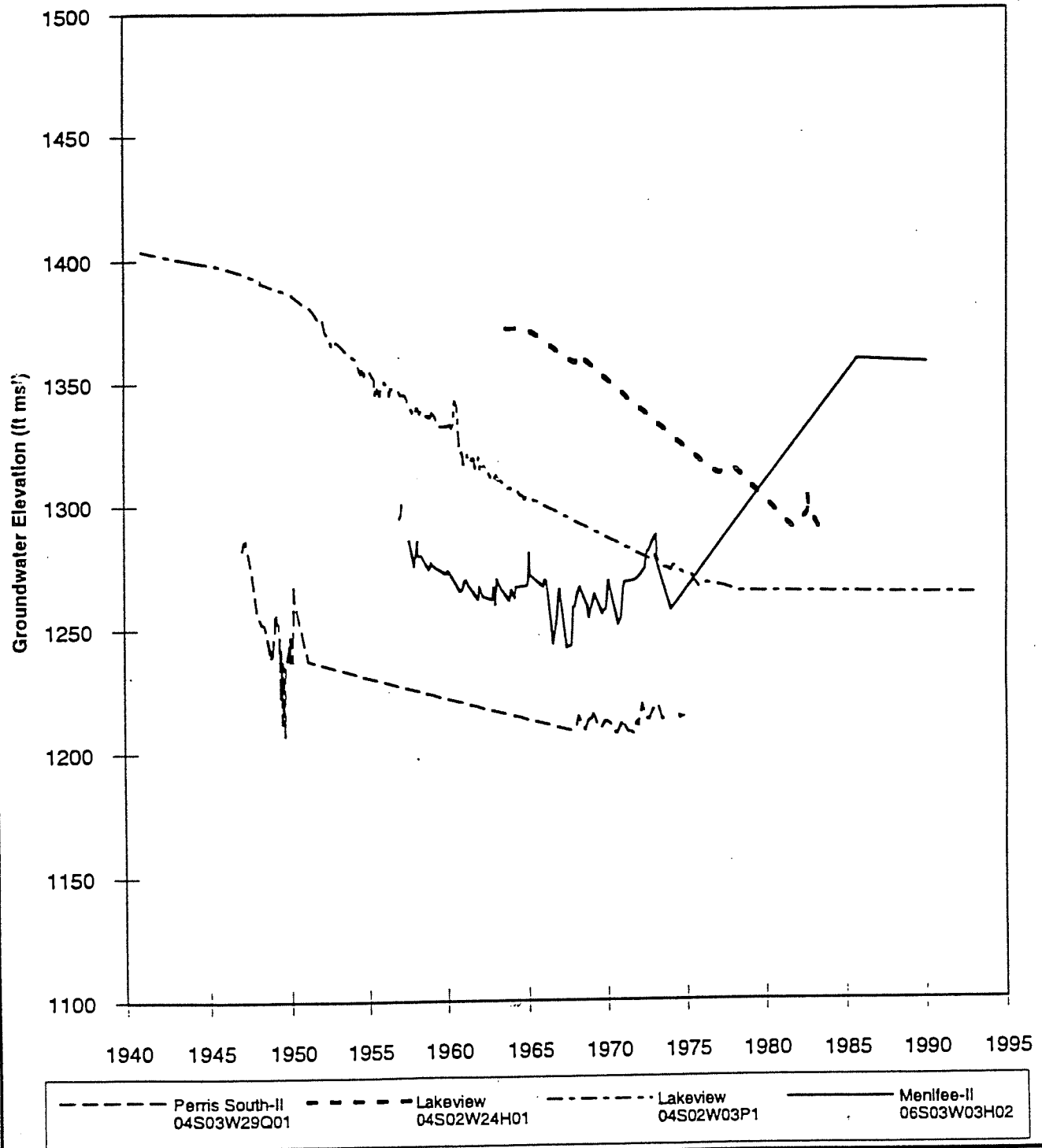
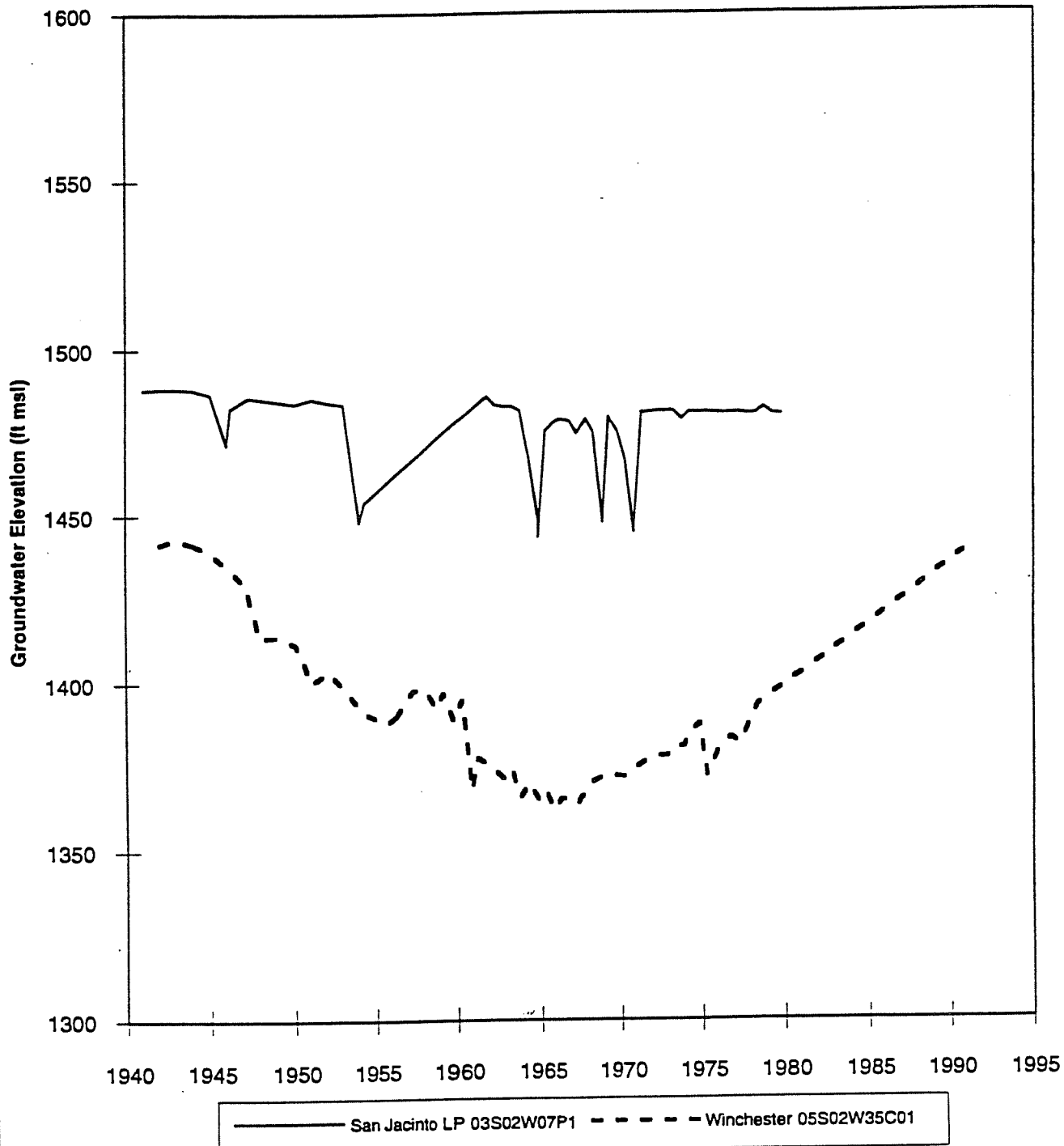




FIGURE 4-6 GROUNDWATER ELEVATION IN SAN JACINTO AND WINCHESTER SUBBASINS



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**Recharge Components.** Recharge in the management area consists of the following hydrologic components:

- deep percolation of stormflows
- deep percolation of precipitation
- deep percolation of applied water
- artificial recharge of imported water
- subsurface inflow from adjacent groundwater basins; and
- subsurface inflow from adjacent non-groundwater areas.

Estimates of these components were made by Water Resources Engineers in 1973 (Water Resources Engineers, 1973) and were updated in 1988 (Camp, Dresser & McKee, 1988). Table 4-2 lists the average annual value for each of these recharge components for year 2000 land use conditions for each subbasin. Values for Perris South-I, Perris South-II and Perris South-III are aggregated into Perris South. The Menifee subbasins have also been aggregated into one subbasin. These data were used in the 1994 Water Quality Control Plan (Basin Plan) developed by the Santa Ana Regional Water Quality Control Board (Regional Board). These components are described below.

Streambed Percolation. Stormflow percolation consists of percolation of stormflow in unlined channels and spreading grounds. The major unlined streams in the management area are the San Jacinto River, Perris Valley drain and Salt Creek. Table 4-2 contains estimates of stormflow percolation for each subbasin. Long term average stormflow percolation varies from about 300 acre-ft/yr for the Menifee subbasin, to a high of about 3,500 acre-ft/yr for the Perris North subbasin. The total stormflow percolation for the management area averages about 8,700 acre-ft/yr.

Percolation of Precipitation. Deep percolation of precipitation occurs when precipitation exceeds soil moisture demand. Soil moisture demand is the total water necessary to fully wet the soil and satisfy consumptive requirements of local vegetation. In most years, precipitation will not directly recharge groundwater unless the soil is kept wet from high precipitation and irrigation. Figure 4-7 shows the average annual precipitation in the management area. The average annual

**TABLE 4-2**  
**HYDROLOGIC COMPONENTS OF THE WEST SAN JACINTO BASINS**  
**YEAR 2000 CONDITIONS PER BASIN PLAN**  
 (acre-ft/yr)

Hydrologic Components	Subbasin						Total for West San Jacinto Basin
	Lakeview	Menifee	Perris North	Perris South	San Jacinto Lower Pressure	Winchester	
<i>Inflow Components</i>							
Stream Bed Percolation	1,200	300	3,500	1,600	1,000	1,100	8,700
Percolation of Precipitation	1,600	1,200	1,100	1,200	900	400	6,400
Imported Water Recharge	0	0	0	0	0	0	0
Local Stream Flow Diverted for Recharge	0	0	0	0	0	0	0
Subsurface Inflows from Mountain Boundaries	1,500	0	1,300	0	0	0	2,800
Deep Percolation of Applied Water	2,500	3,200	13,600	10,000	1,400	1,500	32,200
Municipal Wastewater	0	1,400	5,800	4,500	0	200	11,900
Irrigation	2,500	1,800	7,800	5,500	1,400	1,300	20,300
Subtotal Inflow	6,800	4,700	19,500	12,800	3,300	3,000	50,100
<i>Outflow Components</i>							
Subsurface Outflows to Outside of WSJ Area	0	0	0	0	800	1,200	2,000
	0	0	0	0	800	1,200	2,000
Groundwater Production(1)	4,000	0	2,300	1,400	500	0	8,200
Subtotal Outflow	4,000	0	2,300	1,400	1,300	1,200	10,200
<i>Summary Statistics</i>							
Approximate Net Inflow (natural safe yield)	6,800	3,300	13,700	8,300	2,500	1,600	36,200
Approximate Net Inflow plus Intentional Wastewater Recharge	6,800	4,700	19,500	12,800	2,500	1,800	48,100
Volume of Groundwater in Storage	283,000	56,000	123,000	248,000	382,000	36,000	1,128,000
Storage Capacity	515,000	101,000	347,000	402,000	391,000	41,000	1,797,000

Source - All hydrologic components from Basin Planning Model projections (JMM, 1991) except for groundwater production which was estimated from data in Table 4-3 and EMWD; and intentional wastewater recharge which came from EMWD (EMWD, 1993).

(1) Excludes groundwater production from individual residences where production is less than 25 acre-ft/yr; groundwater production estimates based on land use are much higher and are projected to be about 26,600 acre-ft/yr.

(2) Subtotal excludes subsurface flows between subbasins within the West San Jacinto Basin.

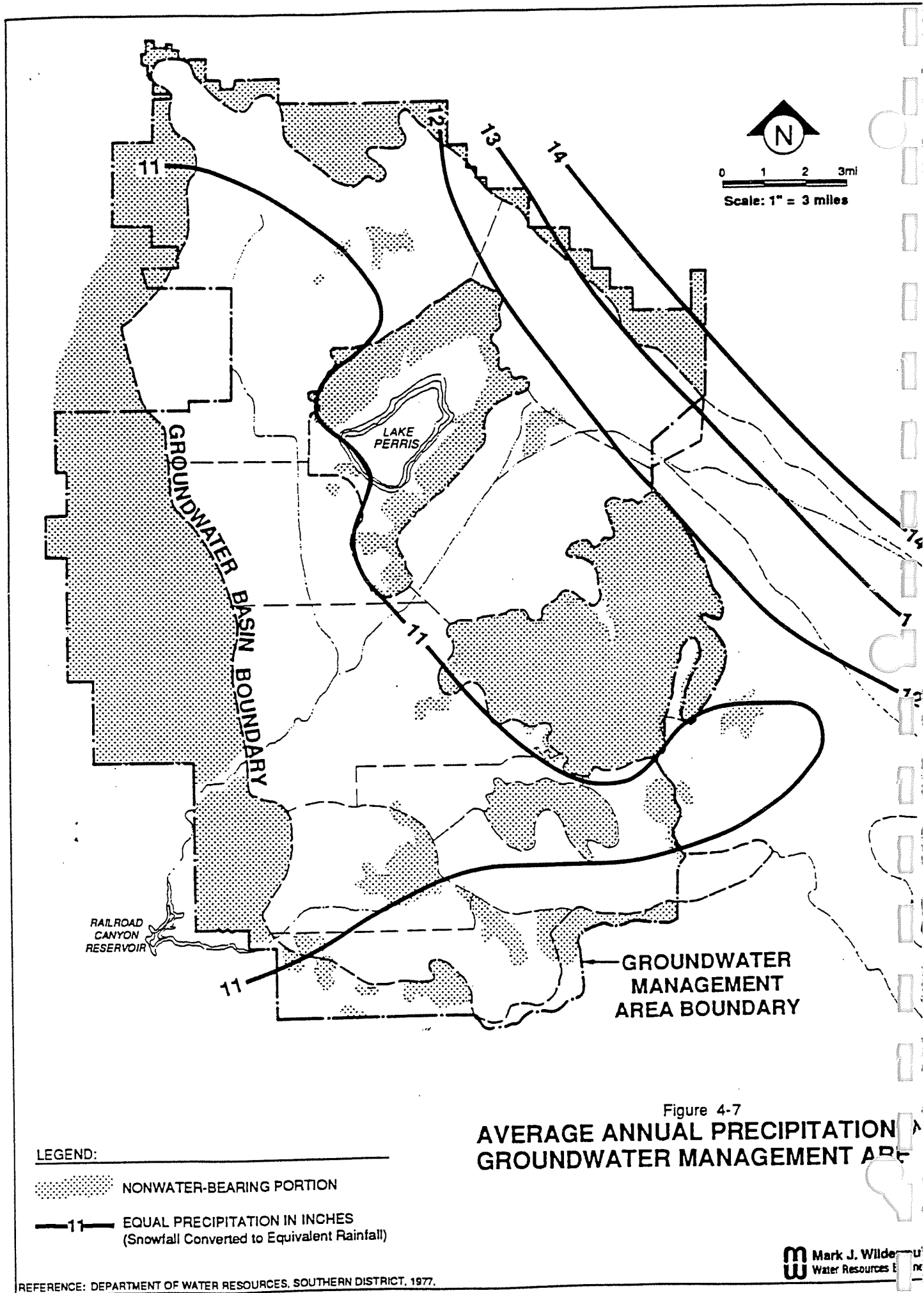

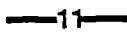


Figure 4-7  
**AVERAGE ANNUAL PRECIPITATION  
 GROUNDWATER MANAGEMENT AREA**

- LEGEND:**
-  NONWATER-BEARING PORTION
  -  11 EQUAL PRECIPITATION IN INCHES  
(Snowfall Converted to Equivalent Rainfall)

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precipitation in the management area ranges between 10 to 12 inches per year. By contrast, the potential evapotranspiration in the management area is about 50 inches (California Department of Water Resources, 1978). Deep percolation of precipitation will occur in wet years, during periods of very high precipitation. In the management area, deep percolation of precipitation varies from about 400 acre-ft/yr in the Winchester subbasin, to a high of about 1,600 acre-ft year in the Lakeview subbasin. The long term deep percolation of precipitation for the management area is about 6,400 acre-ft/yr.

Deep Percolation of Applied Water. The deep percolation of applied water includes recharge from percolation ponds at municipal water plants, septic and irrigation return flows. Recharge from municipal wastewater plants, in order of magnitude, occurs in Perris South (from the Sun City and Perris reclamation plants), Perris North (from the Moreno Valley reclamation plant), and Winchester subbasins (from the Rancho Temecula reclamation plant). The annual recharge of reclaimed water in the management area is projected to be about 11,900 acre-ft/yr (Eastern Municipal Water District, 1993).

The deep percolation of irrigation ranges from about 1,300 acre-ft/yr in the Winchester subbasin, to 7,800 acre-ft/yr in the Perris North subbasin. The long term deep percolation of irrigation and septic tank returns for the management area is about 20,300 acre-ft/yr.

The deep percolation of applied water from reclamation plants, irrigation returns and septic tank disposal ranges from about 1,400 acre-ft/yr for the San Jacinto Lower Pressure subbasin, to about 13,600 acre-ft/yr for the Perris South subbasin.

Subsurface Inflow . Subsurface inflow along mountain boundaries is defined as the sum of subsurface inflows from the mountain boundaries plus runoff that percolates to groundwater along the mountain - aquifer contact. Subsurface inflow is projected to be about 2,800 acre-ft/yr.

Subtotal Inflow. The total inflow or recharge to the management area ranges from a low of 3,000 acre-ft/yr for the Winchester subbasin, to a high of about 19,500 acre-ft/yr for the Perris South subbasin. The total of all recharge into the management area is about 50,200 acre-ft/yr.

**Outflow Components.** Outflow from the management area consists of the following hydrologic components:

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- subsurface outflow to areas outside the management area;
- groundwater production; and
- consumptive use from riparian vegetation.

Table 4-2 lists the average value for each of these recharge components for year 2000 land use conditions for each subbasin. These components are described below.

Subsurface Outflow. Subsurface outflow to areas outside the management area ranges from a low of zero for the Lakeview Menifee, Perris North and Perris South subbasins, to a high of about 1,200 acre-ft/yr for the Winchester subbasin. The total water lost to subsurface outflow is about 2,000 acre-ft/yr in the management area.

Groundwater Production. Groundwater production data was obtained for the period 1987 through 1991, the last five year period for which the State Water Resources Control Board (SWRCB) had compiled records of reported groundwater production. These data are listed in Table 4-3. Actual groundwater production is significantly larger because some groundwater producers do not report their groundwater production to the SWRCB. Groundwater production, while a hydrologic component, is omitted from the table because it is unknown. The safe yield estimate shown in Table 4-2 is based on total inflows minus non pumping outflows.

Losses to Riparian Vegetation. Losses to riparian vegetation are negligible. In the predevelopment past, uptake of groundwater by riparian vegetation was probably large, but has dropped to insignificance because of agricultural land development and lower groundwater levels.

Subtotal Outflow. The total outflow in the basin, from all sources, ranges from a low of 1,300 acre-ft/yr for the San Jacinto Lower Pressure subbasin, to a high of 4,600 acre-ft/yr for the Menifee subbasin. The total outflow for the management area is about 14,800 acre-ft/yr.

Volume of Groundwater in Storage. The volume of groundwater in storage was estimated from the Basin Planning Model simulations used in the 1993 Basin Plan. These estimates are listed in Table 4-2 and correspond to the year 2000. The volume of groundwater in storage is estimated as the product of the thickness of saturated sediments, times the specific yield, times the area of saturated sediments. The volume of groundwater in storage ranges from about 36,000

TABLE 4-3  
HISTORICAL GROUNDWATER PRODUCTION

User	State Well ID	Reported Groundwater Production (acre-ft/yr)				
		1987	1988	1989	1990	1991
<i>Lakeview Subbasin Production</i>						
Hammerschmidt	4S/2W 07J	750	750	750		
Mooze	4S/2W 10C		600.3	792	653.4	428.1
Mooze	4S/2W 09A	579	600.4	201	507.2	26.8
Nuevo Water Co.	4S/2W 18A	527	580.5	780.6	720	382.7
Nuevo Water Co.	4S/2W 18B	522.6	568.3	520	407	777.5
Nutrilite	4S/2W 08Q	83	100.1	102.4	124.8	70
Nutrilite	4S/2W 08K	53.7	120.6	102.8	120	130
Nutrilite	4S/2W 08	361.6	1199.2	1166.9	1132.1	980
Verger	4S/2W 10B	724		620	600	510
Verger	4S/02W 10A	440		430	420	350
Total Annual Production for Lakeview Subbasin		4,041	4,519	5,466	4,685	3,655
<i>Perris North Subbasin Production</i>						
E.G.M.W.C.	3S/3W 06N	13.8	12.5	77.6	1.1	0.3
EMWD	3S/3W 6D	6176	763	613.8	601.5	231.3
Knox	3S/3W 30Q	200				3.6
Schori	3S/3W 31Q			750		
UCR	3S/3W 21C	39.9	56.5	71.5	34.1	61.8
UCR	3S/3W 22D	266.5	325.5	181.4	276.3	266.8
UCR	3S/3W 21A	35.9	71.4	30.9	42.3	46
Warmington	3S/3W 21 F1		847		845	
Total Annual Production for Perris North Subbasin		6,732	2,076	1,725	1,800	610
<i>Perris South-I Subbasin Production</i>						
Smith	4S/3W 16N	94.8				
Total Annual Production for Perris South-I Subbasin		95	0	0	0	0
<i>Perris South-II Subbasin Production</i>						
Mooze	5S/3W 11M	556	558	716	318	421.2
Underwood Farms	5S/3W 14P	375	365	365	365	350
Total Annual Production for Perris South-II Subbasin		931	923	1,081	683	771
<i>Perris South-III Subbasin Production</i>						
Agri-Empire	5S/3W 13A	455	442	496	441	381
Agri-Empire	5S/3W 13Q	205	168	170	164	148
Agri-Empire	5S/3W 13A1					165
Total Annual Production for Perris South-III Subbasin		660	610	666	605	694
<i>San Jacinto Lower Pressure Subbasin Production</i>						
Agri-Empire	4S/2W 35D1	576		638	293	204
H. Welch	3S/2W 33R1	20.2				
Hill & Sooy	3S/2W 28Q	166	208	214	211	172
Total Annual Production for San Jacinto Lower Pressure Subbasin		762	208	852	504	376
Total Reported Groundwater Production West San Jacinto Groundwater Basin		13,721	8,336	9,790	8,271	6,106

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acre-ft for the Winchester subbasin, to about 380,000 acre-ft in the San Jacinto Lower Pressure subbasin. The total groundwater in storage in the management area is about 1,130,000 acre-ft.

The storage capacity of these subbasins is also shown in Table 4-2. The storage capacity is equal to the volume of groundwater that could be stored in the basin with a minimum 50 feet depth to water. The storage capacity of groundwater in storage ranges from about 41,000 acre-ft for the Winchester subbasin, to about 515,000 acre-ft for the Lakeview subbasin. The total storage capacity in the management area is about 1,800,000 acre-ft

**Safe Yield.** Two estimates of the safe yield are presented in Table 4-2. The natural safe yield of the groundwater basins is assumed equal to the net inflow and is numerically equal to the long term average inflow, minus subsurface outflow from the management area, minus the average annual percolation of reclaimed water. The natural safe yield ranges from a low of 1,600 acre-ft/yr for the Winchester subbasin, to a high of about 13,700 acre-ft/yr for the Perris North subbasin. The natural safe yield for the management area is about 36,200 acre-ft. If the percolation of reclaimed water is included in the yield, then the safe yield will range from 1,800 acre-ft/yr for Winchester subbasin, to 19,500 acre-ft/yr for the Perris North subbasin. The safe yield of the management area is about 48,100 acre-ft/yr.

## GROUNDWATER QUALITY

The water quality trends in the West San Jacinto Groundwater Basin are typical of the arid southwest. There are three principle sources of water quality degradation in operation in the management area. Naturally occurring brackish groundwater occurs in the vicinity of Salt Creek in the Menifee and Winchester subbasins; and in the Perris South-II subbasin in the vicinity of San Jacinto Creek. Groundwater production patterns in these areas have caused the brackish groundwater to spread out and thus affect larger areas.

The second principle cause of water quality degradation is irrigated agriculture. The mineral content in irrigation return flows to groundwater is three to four times the mineral content of the irrigation source. The irrigation returns degrade the groundwater. If the groundwater is subsequently reused, the mineral content of the irrigation returns are further increased causing additional groundwater degradation. Groundwater will continuously degrade unless additional sources of high quality recharge are introduced to the basin.



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Finally, elevated boron and fluoride levels in groundwater have been observed near faults, in particular near the Casa Loma and San Jacinto faults. Boron, fluoride and elevated groundwater temperatures are common near faults. The area degraded by these contaminants is near the Casa Loma and San Jacinto faults.

Groundwater quality descriptions are presented below for each subbasin. These descriptions are based on all groundwater quality data currently available for the management area. Most of the discussion is based on the groundwater quality descriptions developed by the DWR in *Water Resources Evaluation of the San Jacinto Area* (California Department of Water Resources, 1978). With the exception of the Menifee-I, Menifee-II and Winchester subbasins, very little new water quality data has been collected since the DWR prepared the above-mentioned report. Data collected after 1978, including a recent round of water quality sampling by the United States Geological Survey (USGS), were reviewed in detail and, where appropriate, modifications to the DWR's descriptions were developed and included herein.

The water quality discussion presented herein is limited to general minerals, nitrate and chloride due to the lack of data on heavy metals, organics and radionuclides. An inventory of the available water quality data at wells is included in Appendix B. The available water quality data base contains water quality data for about 300 wells. The average period of record for these wells is about 5 years, with 62 percent of the wells having only one water quality sample. On the average, about half of the water quality data is from before 1980 and about 72 percent before 1990. Most of the recent data was obtained from wells in the Menifee subbasins as part of EMWD's Menifee desalter studies, and groundwater quality sampling surveys by the USGS. It should be emphasized that there is practically no information on heavy metals, organics or radionuclides.

New groundwater quality data will need to be collected and a new water quality characterization of the West San Jacinto Groundwater Basin will need to be prepared in the implementation of the groundwater management plan. The need for new data will become obvious in the discussion of Sections 7 and 8. A plan to obtain these data has been incorporated into the management plan described in Section 8.

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**Perris North Subbasin**

Figure 4-8 shows the distribution of TDS in the management area as interpreted by the DWR (DWR 1978). TDS, nitrate and the general inorganic chemistry for the Perris North subbasin is shown in Figure 4-9. Figure 4-9 is based on all available data and corresponds approximately to 1993 conditions. In the Perris North subbasin, TDS concentrations generally range from about 300 mg/L to 600 mg/L with some wells exceeding 800 mg/L. The chemical character of its water is mostly sodium chloride, probably because of the extensive irrigated agriculture. Evapotranspiration and the frequent application of irrigation water produce changes in the relative concentrations of the mineral constituents that leave more sodium and chloride in solution. Recycling of this water further concentrates these ions. The only source of dilution is the deep percolation of precipitation and stormflow which are small compared to total recharge in the subbasin (see Table 4-2).

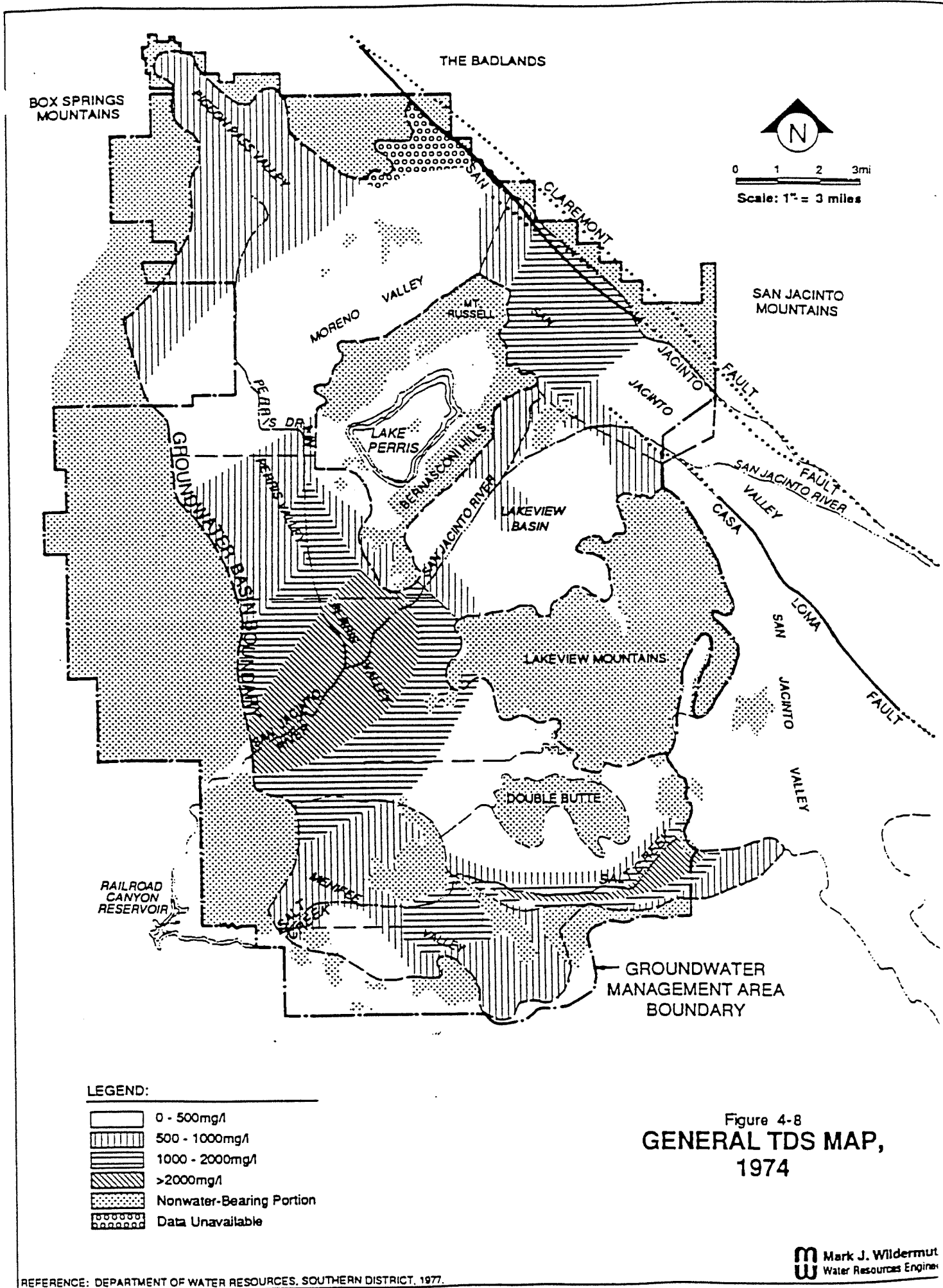
Nitrate concentrations range from about 1 to 12 mg/L (as nitrogen) with most values between 4 mg/L to 9 mg/L. Nitrate concentrations have increased over the years as a result of fertilization practices in the valley. Figures 4-10, 4-11, and 4-12 show TDS, nitrate and chloride trends in the Perris North subbasin. Figure 4-11 suggests an increasing trend of nitrate concentration.

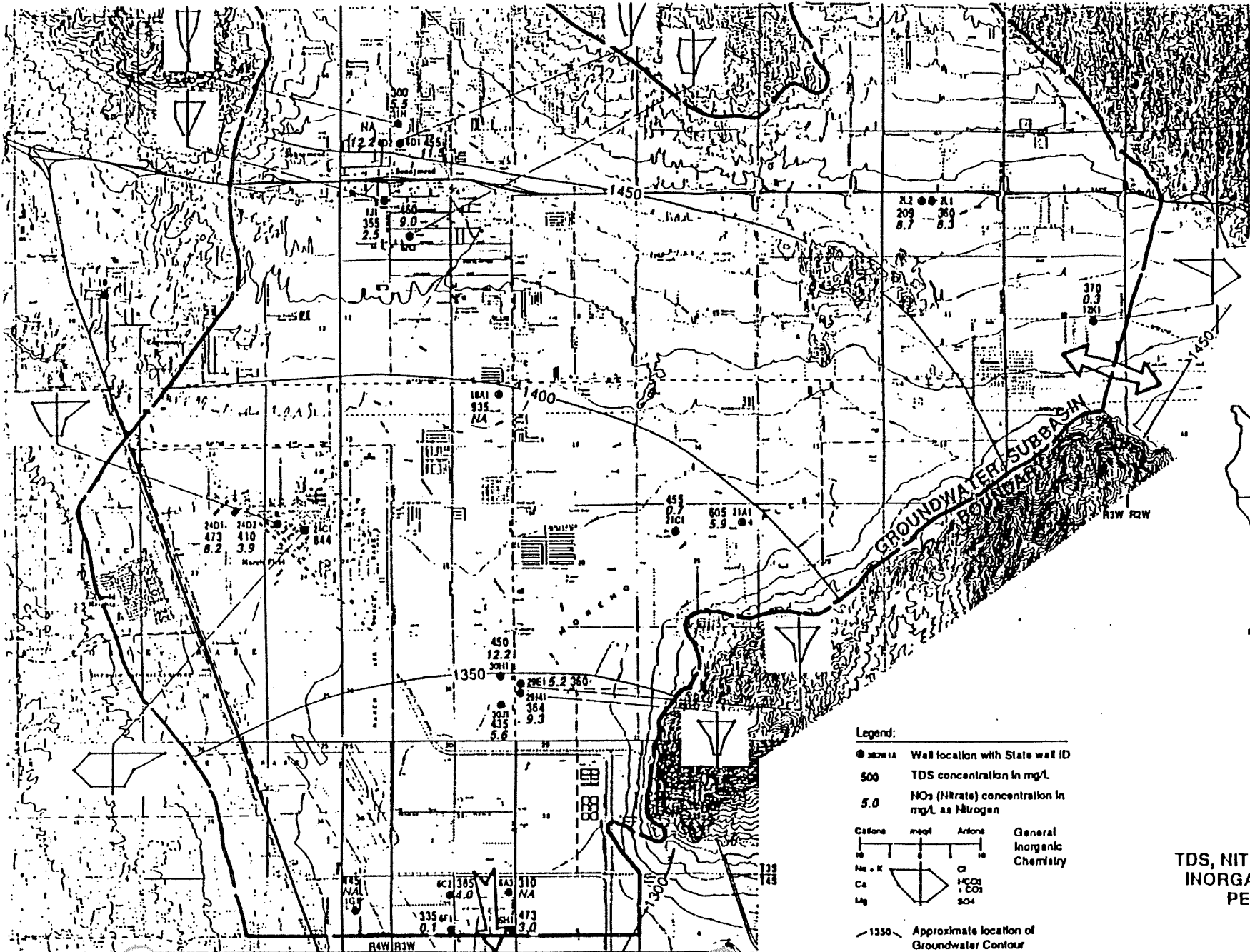
Most of the water ranges from soft to moderately hard. Fluoride and boron concentrations are relatively high in certain wells in the area, possibly indicating the presence of unmapped faults. For human consumption, water from some wells in the area may not meet Department of Health Services standards for nitrate and fluoride concentrations.

**Perris South Subbasins**

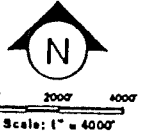
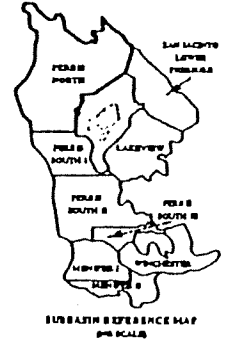
Figure 4-13 illustrates the TDS, nitrate and general inorganic chemistry of the Perris South I and Lakeview subbasins and Figure 4-14 shows the same interpretation for the Perris South II and Perris South III subbasins. Figures 4-13 and 4-14 are based on all available data and correspond approximately to 1993 conditions. The variations in TDS and nitrate concentrations in the Perris South subbasins are listed below (mg/L).

<u>Subbasin</u>	<u>TDS</u>	<u>Nitrate (as N)</u>
Perris South-I	500 to 1300	0.0 to 7.2
Perris South-II	640 to 14,000	0.0 to 9.0
Perris South-III	400 to 3,300	5.0 to 31





T29  
T39



**Legend:**

- 207114 Well location with State well ID
- 500 TDS concentration in mg/L
- 5.0 NO<sub>3</sub> (Nitrate) concentration in mg/L as Nitrogen

Cations	mg/L	Anions	General Inorganic Chemistry
Na + K		Cl	HCO <sub>3</sub> CO <sub>3</sub> SO <sub>4</sub>
Ca			
Mg			

— 1350 — Approximate location of Groundwater Contour

Figure 4-9  
**TDS, NITRATE, & GENERAL INORGANIC CHEMISTRY-PERRIS NORTH**

FIGURE 4-10 TDS CONCENTRATION IN PERRIS NORTH AND SOUTH BASINS

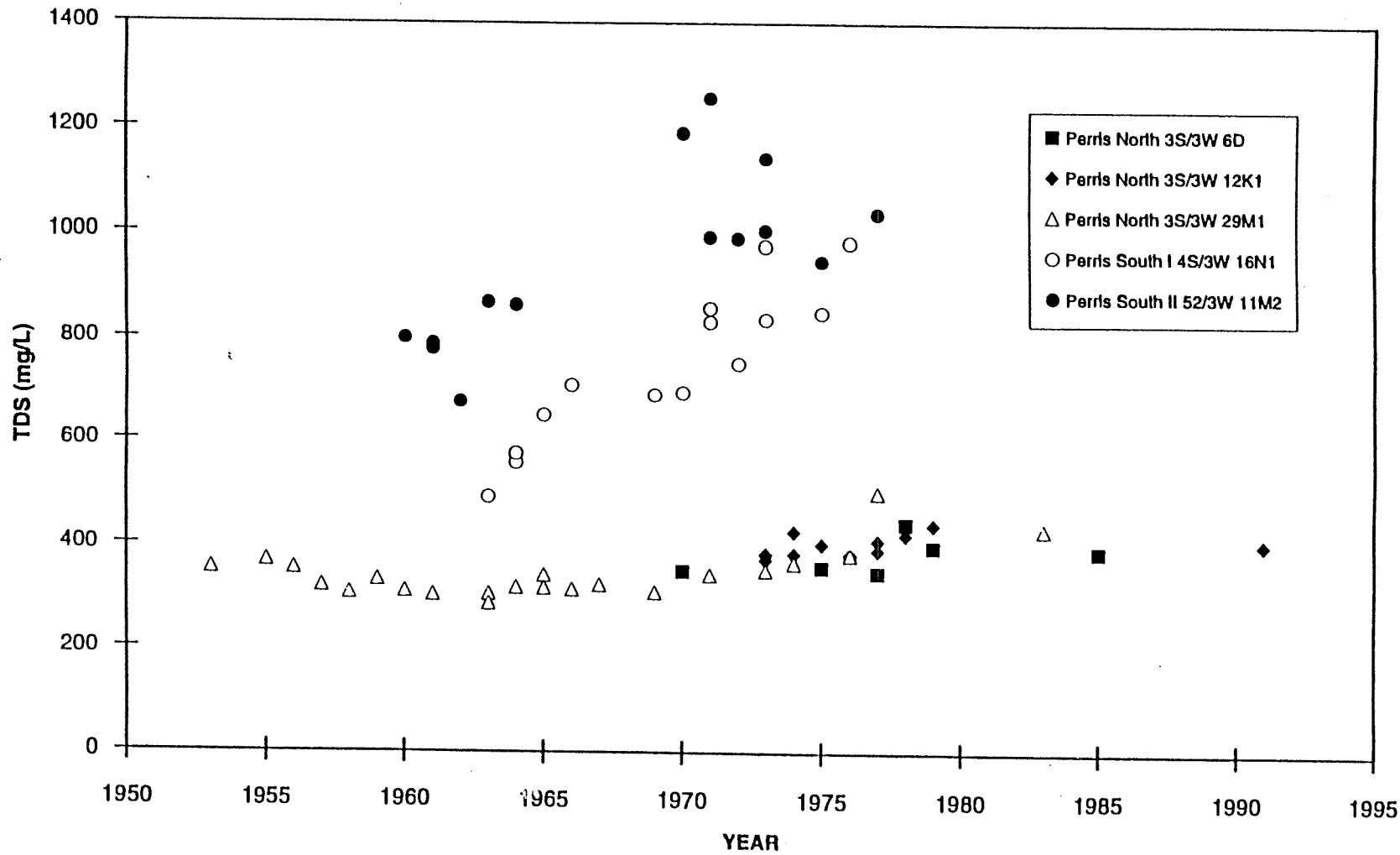


FIGURE 4-11 NITRATE-N CONCENTRATION PERRIS NORTH AND SOUTH BASINS

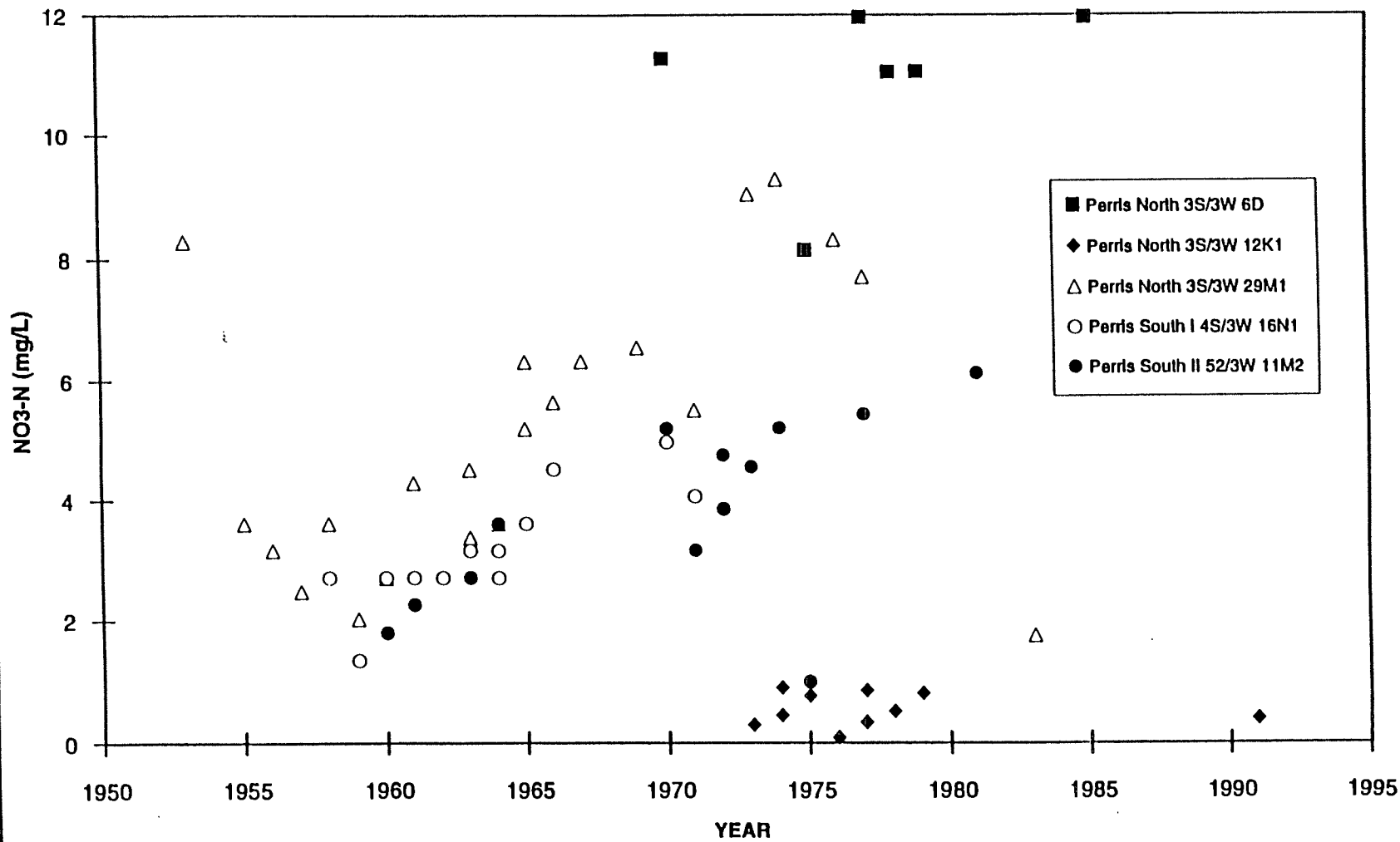
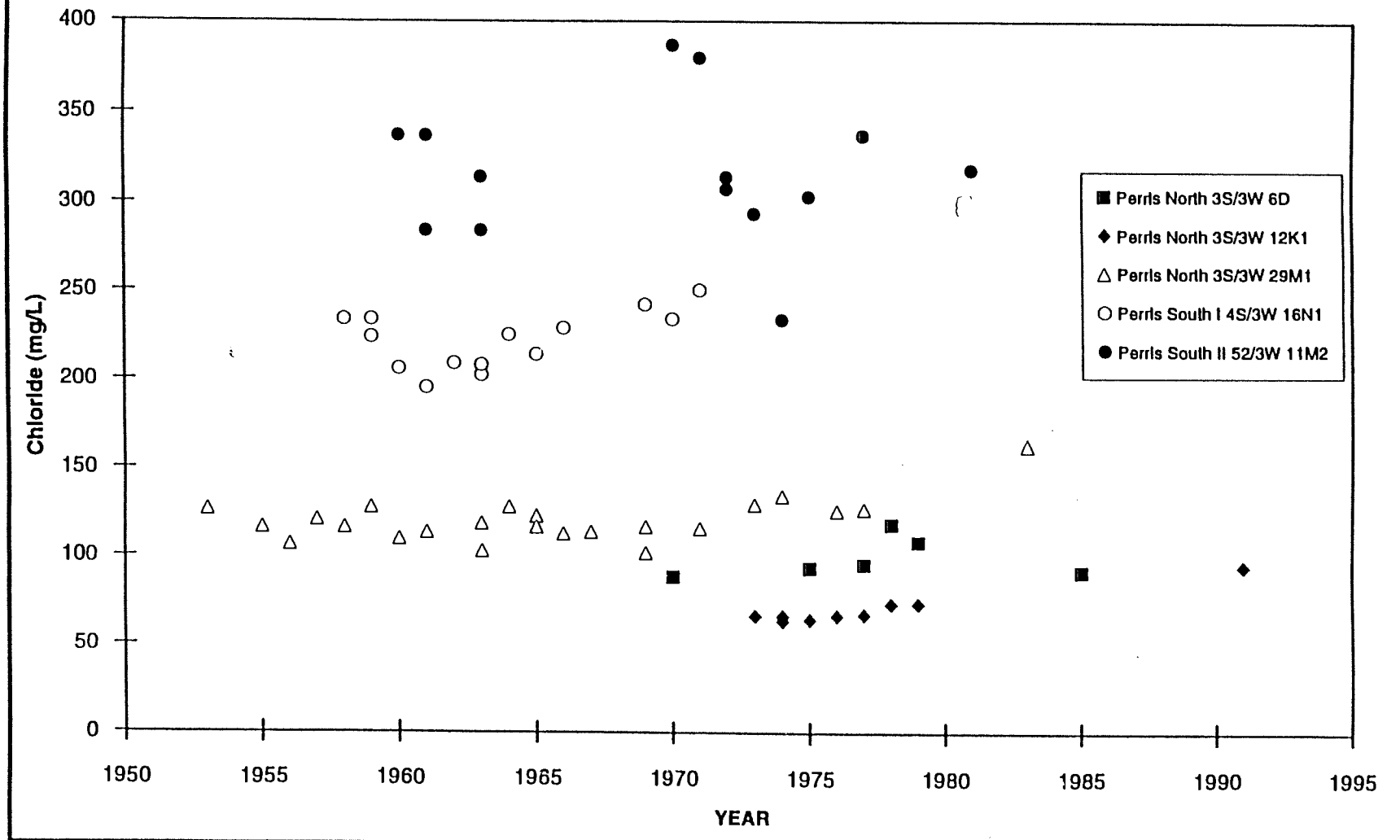
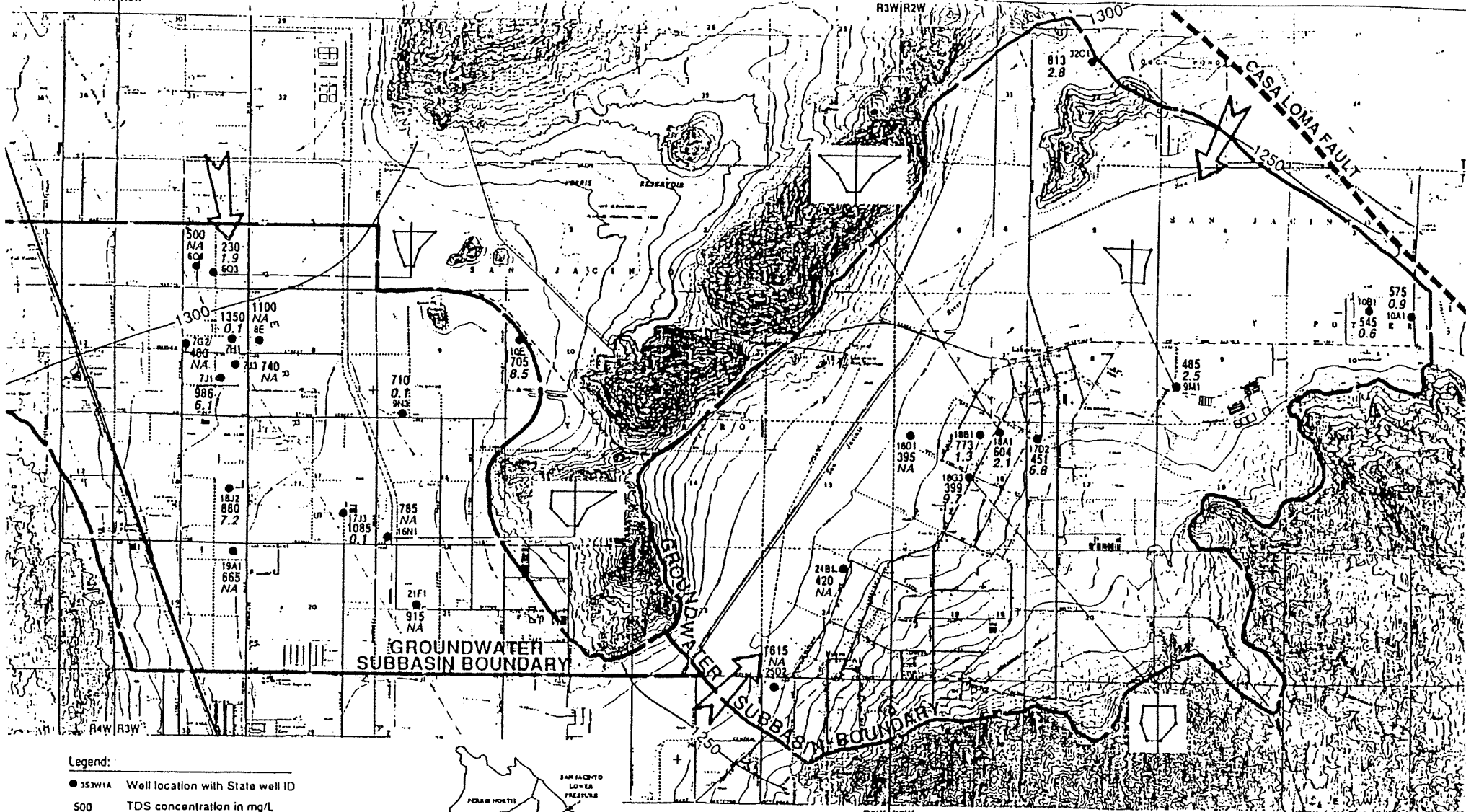


FIGURE 4-12 CHLORIDE CONCENTRATION PERRIS NORTH AND SOUTH BASINS





**Legend:**

- 352W1A Well location with State well ID
- 500 TDS concentration in mg/L
- 5.0 NO<sub>3</sub> (Nitrate) concentration in mg/L as Nitrogen

Carbons	mg/L	Anions	General Inorganic Chemistry
Na - K		Cl	
Ca		HCO <sub>3</sub>	
Mg		CO <sub>3</sub>	
		SO <sub>4</sub>	

— 1350 — Approximate location of Groundwater Contour

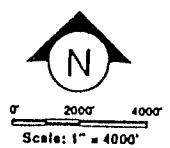
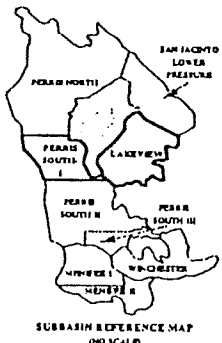
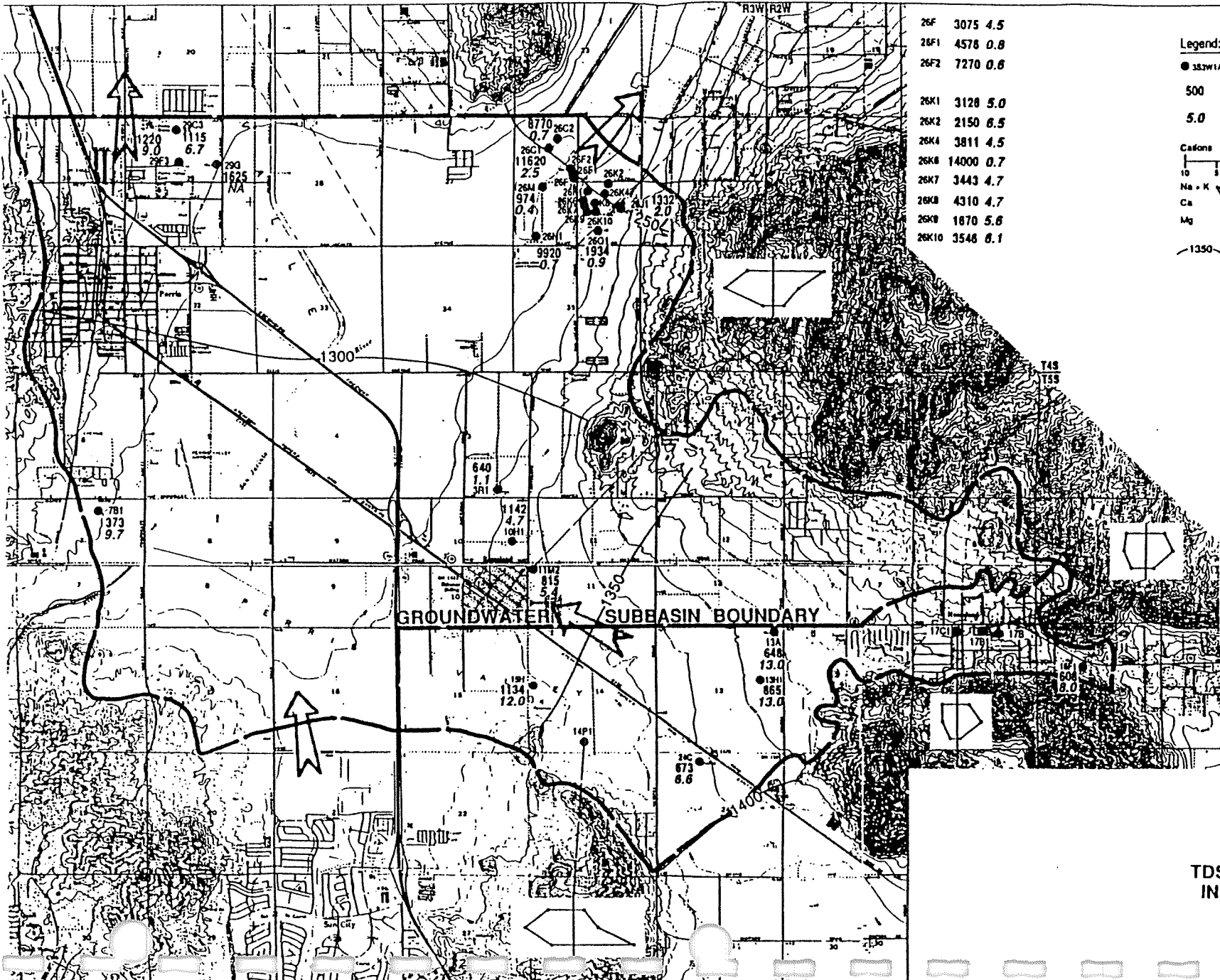


Figure 4-13  
**TDS, NITRATE, & GENERAL INORGANIC CHEMISTRY- PERRIS SOUTH-I & LAKEVIEW**





26F	3075	4.5
26F1	4578	0.8
26F2	7270	0.6
26K1	3128	5.0
26K2	2150	6.5
26K4	3811	4.5
26K8	14000	0.7
26K7	3443	4.7
26K8	4310	4.7
26K9	1870	5.6
26K10	3548	6.1

**Legend:**

- 333W1A Well location with State well ID
- 500 TDS concentration in mg/L
- 5.0 NO<sub>3</sub> (Nitrate) concentration in mg/L as Nitrogen

Cations		meq/l	Anions	General Inorganic Chemistry
Na + K	Ca	10	Cl	
Mg		0	HCO <sub>3</sub> + CO <sub>3</sub>	
		10	SO <sub>4</sub>	

—1350— Approximate location of Groundwater Contour

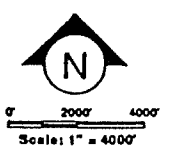
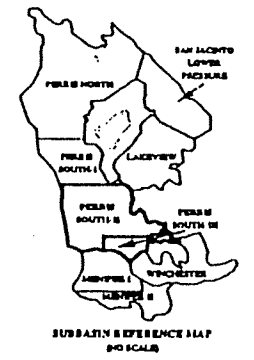


Figure 4-14  
**TDS, NITRATE, & GENERAL INORGANIC CHEMISTRY- PERRIS SOUTH-II & PERRIS SOUTH-III**

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GROUNDWATER RESOURCES IN THE WEST SAN JACINTO BASIN

The poorest quality water is found near the San Jacinto River in the Perris South-II subbasin. This brackish water is believed to be the result of the large evapotranspiration losses incurred because of the high water table that existed in the past. As wells were abandoned because of this brackish water, pumping increased in the areas of better quality to the north and south. As a result, brackish water has spread out toward these areas. Thus, the TDS concentration of the groundwater has increased as water levels have declined in the areas north and south of the river. Figures 4-10, 4-11, and 4-12 illustrate TDS, nitrate and chloride trends in the Perris South subbasins. Figure 4-10 shows this increase in TDS concentration. The Ski Land area has anomalously high TDS concentrations ranging from 1,700 mg/L to 14,000 mg/L.

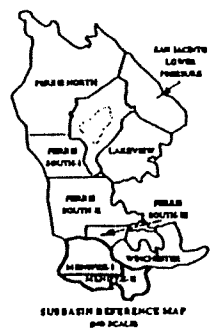
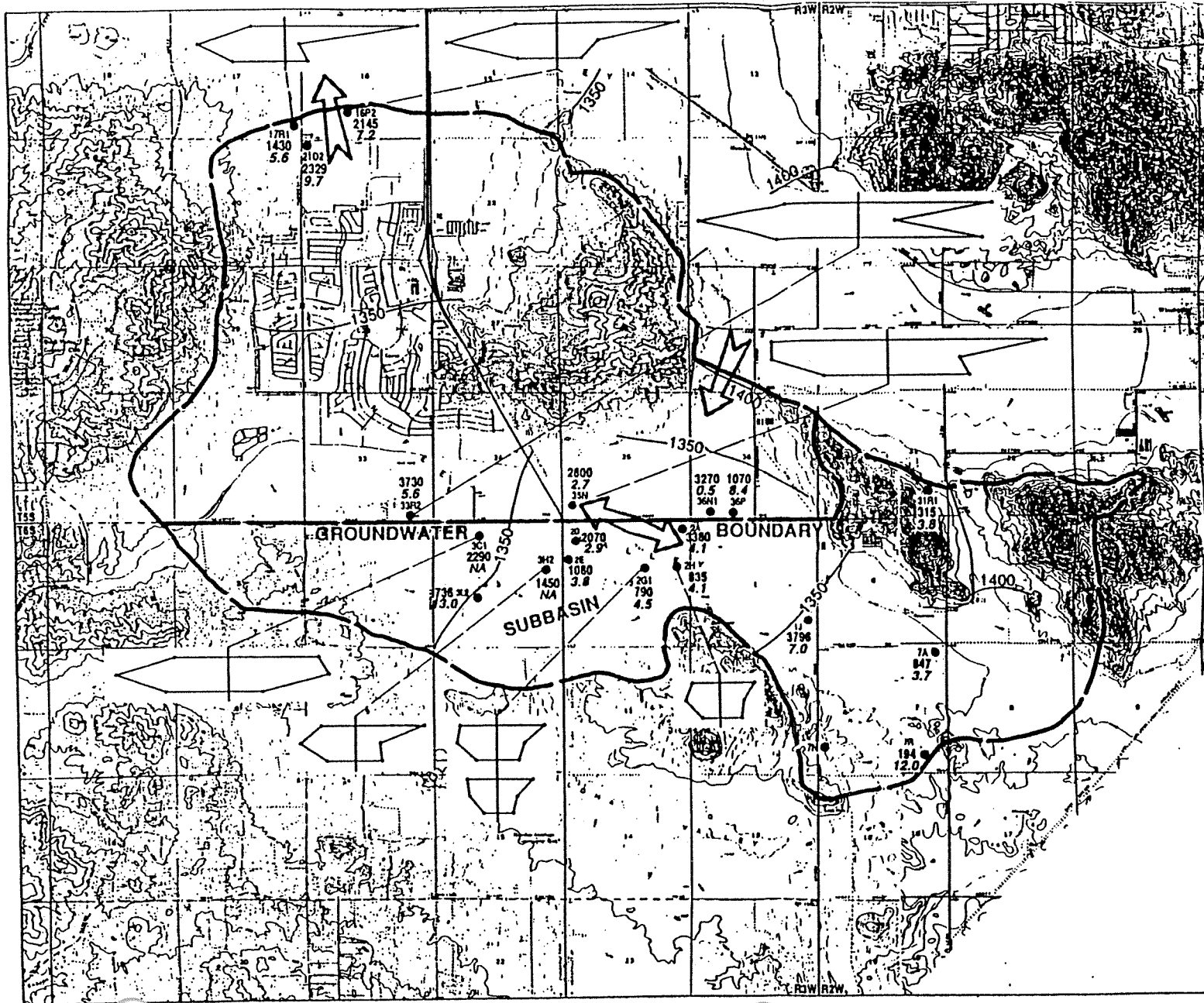
### Menifee Subbasins

Figure 4-15 illustrates the TDS, nitrate and general inorganic chemistry of the Menifee-I and Menifee-II subbasins. Figure 4-15 is based on all available data and corresponds approximately to 1993 conditions.

Groundwater flow between Menifee and the adjacent subbasins is negligible. The volume of groundwater in storage for Menifee-I and Menifee-II is relatively small and is estimated at about 56,000 acre-ft (Table 4-2). Groundwater produced in these subbasins was, and is, used for agriculture and landscape irrigation. Returns from irrigation have contributed to increased mineral concentrations in these subbasins.

Under natural conditions, groundwater flowed toward Salt Creek from all directions and from Salt Creek westward, where high groundwater caused large evapotranspiration losses and concurrent salt buildup. In time, brackish water developed in these areas and, under normal conditions, remained close to the creek. TDS concentrations throughout the basin ranged from 300 to 1,500 mg/L in 1974, and have increased to range from 800 to 3,700 mg/L.

Most groundwater in the Menifee-I and Menifee-II subbasins cannot be used for domestic supply without demineralization or blending with imported water. Agricultural usage is somewhat limited due to high chloride and sodium concentrations.



**Legend:**

- 382W1A Well location with State well ID
- 500 TDS concentration in mg/L
- 5.0 NO<sub>3</sub> (N)rate concentration in mg/L as Nitrogen

Cations	meq/L	Anions	General Inorganic Chemistry
Na + K	5	Cl	
Ca	5	HCO <sub>3</sub> + CO <sub>3</sub>	
Mg	5	SO <sub>4</sub>	

— 1350 — Approximate location of Groundwater Contour

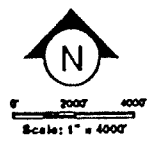


Figure 4-15  
**TDS, NITRATE, & GENERAL INORGANIC CHEMISTRY- MENIFEE-I & MENIFEE-II**

SECTION 4  
GROUNDWATER RESOURCES IN THE WEST SAN JACINTO BASIN

### Lakeview Subbasin

Figure 4-13 illustrates the TDS, nitrate and general inorganic chemistry of the Lakeview subbasin. Figure 4-13 is based on all available data and corresponds approximately to 1993 conditions. Figures 4-16, 4-17 and 4-18 contain time histories for two wells in the Lakeview subbasin covering the period of 1957 to 1989.

The principle sources of groundwater in this basin are underflow from the San Jacinto Lower Pressure, Perris South I, Perris South II subbasins, stormflow percolation in San Jacinto Creek, and runoff from the Lakeview Mountains and Bernasconi Hills. Groundwater quality under natural conditions has been altered by a groundwater level drop of about 200 feet that has changed the direction of flow of groundwater. Groundwater flows toward Lakeview from all sides. Groundwater on the northwest and southeast sides of the basin has TDS concentrations of below 500 mg/L as a direct result of the recharge of the Bernasconi Hills and Lakeview Mountains, respectively. Brackish groundwater is entering from the Perris South-II subbasin because of lowered groundwater levels near Lakeview. The most conspicuous constituents of the brackish water are sodium and chloride. TDS concentrations range from 400 to 1,600 mg/L, with more typical values ranging from 400 to 600 mg/L. Nitrates range from 1 to 9 mg/L as nitrogen, with typical values less than 6 mg/L. Most of the groundwater in the basin is sodium chloride in character. The Casa Loma fault, which forms the eastern boundary of the basin, affects the quality of water in that area. Both boron and fluoride concentrations are relatively high near the fault and in a few other specific areas of the basin. Chloride is generally high and most of the groundwater is moderately hard.

With the exception of some instances of elevated fluoride, groundwater in the Lakeview subbasin is suitable for domestic and municipal supply. Agricultural usage is somewhat limited due to high boron and chloride concentrations.

**FIGURE 4-16 TDS CONCENTRATION IN MENIFEE, WINCHESTER, LAKEVIEW BASINS**

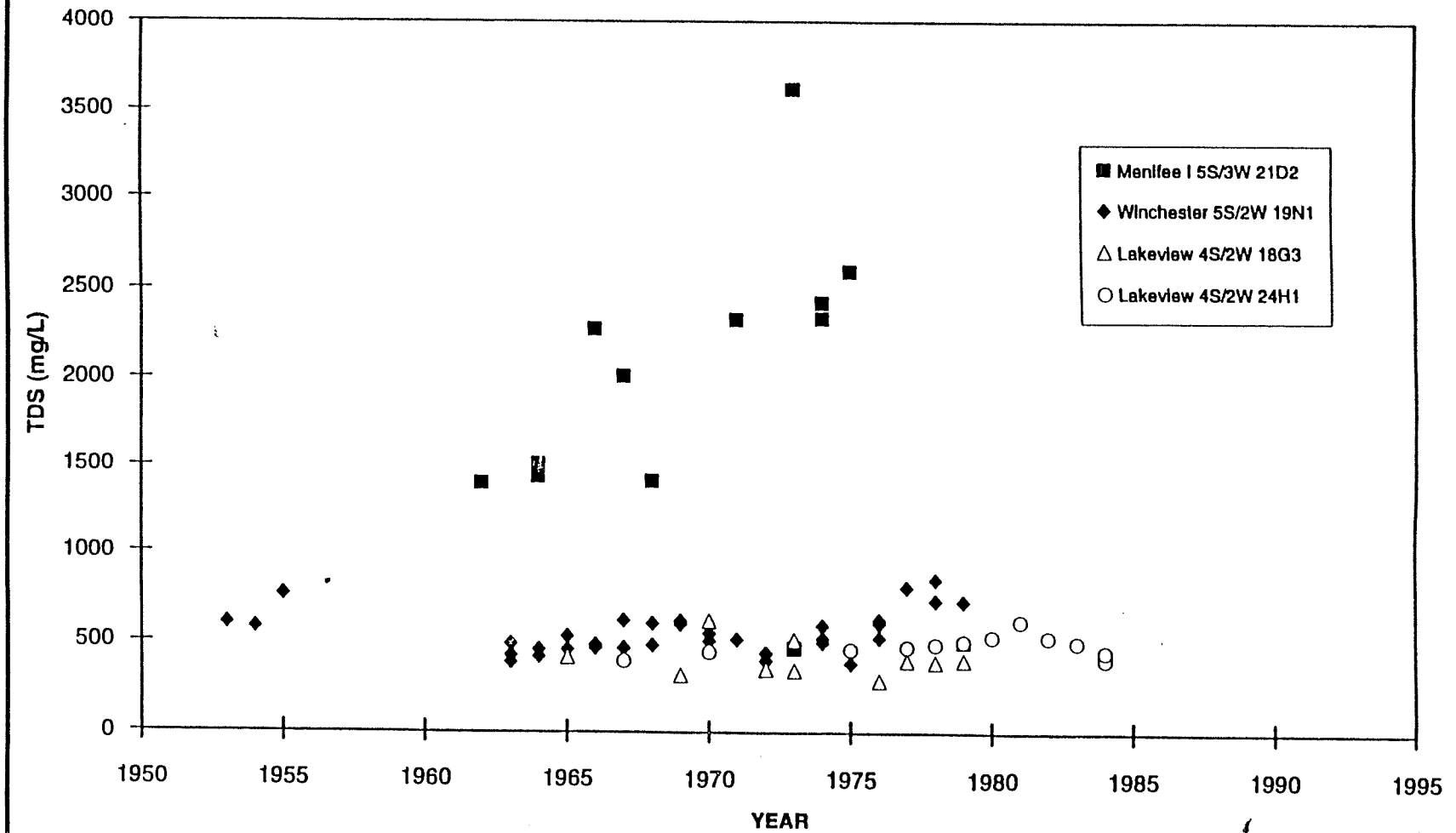


FIGURE 4-17 NITRATE-N CONCENTRATION MENIFEE I, WINCHESTER, AND LAKEVIEW BASINS

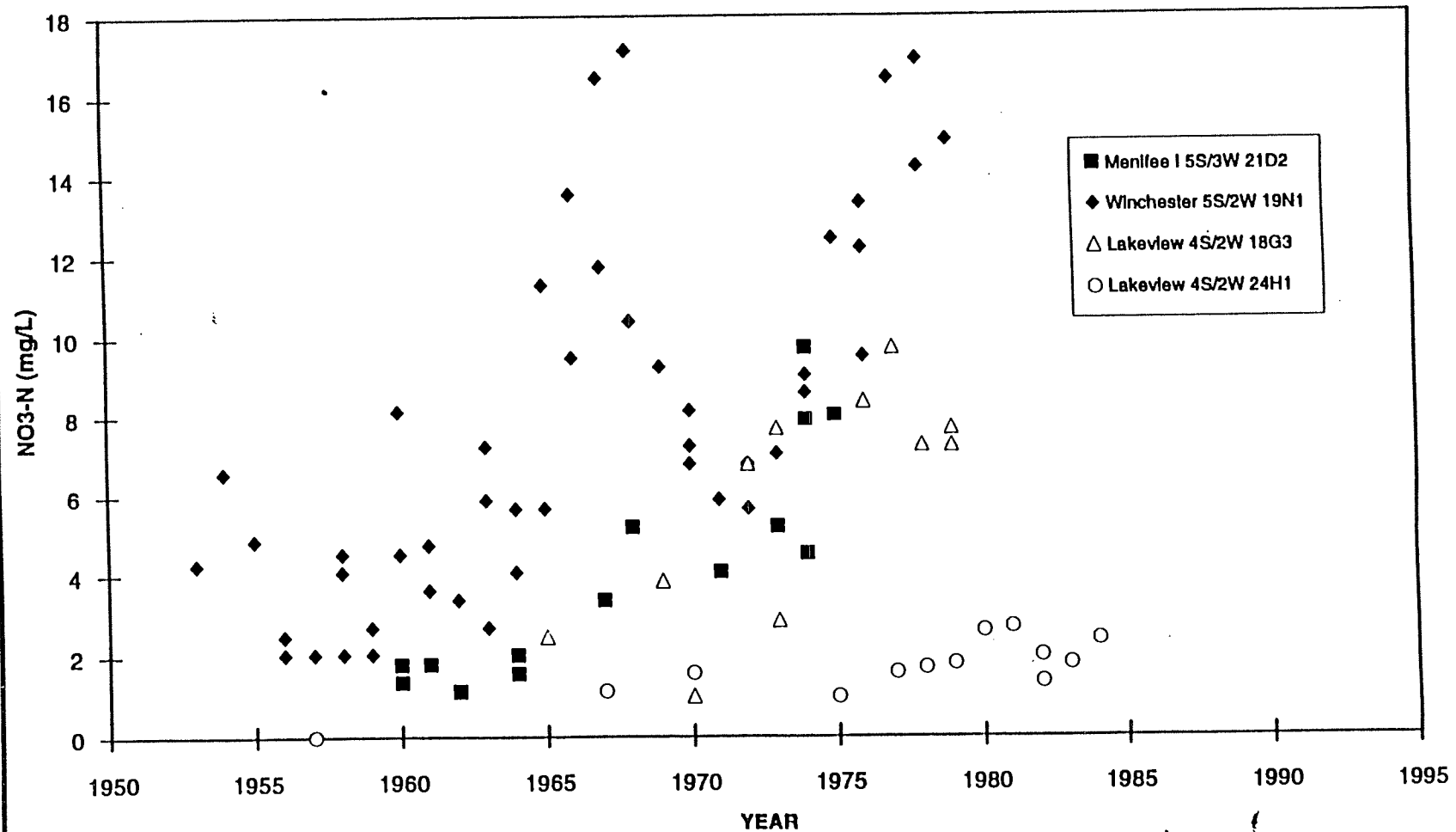
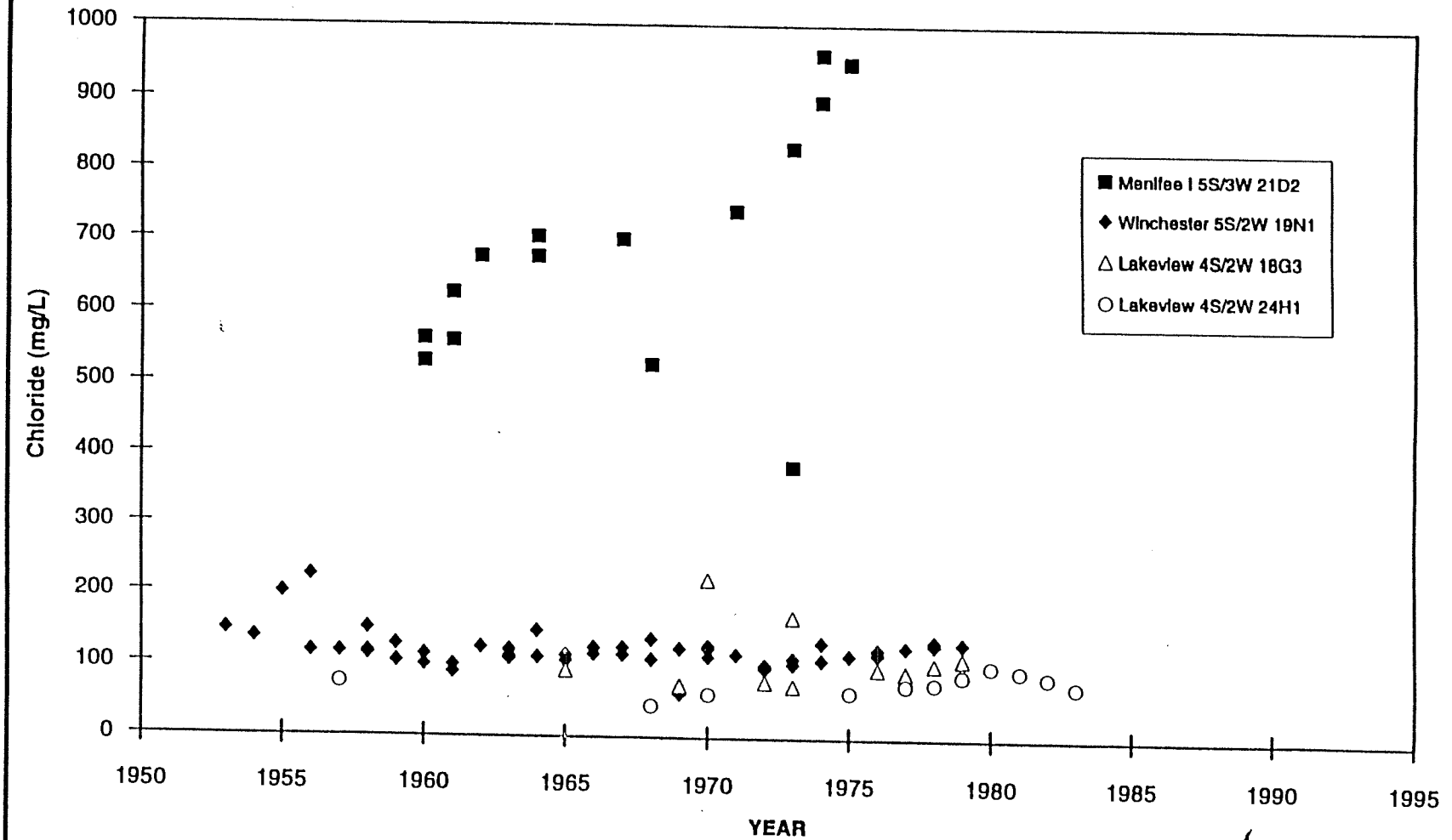


FIGURE 4-18 CHLORIDE CONCENTRATION IN MENIFEE, WINCHESTER, AND LAKEVIEW BASINS



### Winchester Subbasin

Figure 4-19 illustrates the TDS, nitrate and general inorganic chemistry of the Winchester subbasin. Figure 4-19 is based on all available data and corresponds approximately to 1993 conditions. Winchester is the smallest of the groundwater basins, with about 36,000 acre-ft in storage and capacity of about 41,000 acre-ft. TDS concentrations range from 700 to 6,400 mg/L, with more typical values ranging from 1,000 to 3,000 mg/L. Nitrates range from 1 to 51 mg/L as nitrogen, with typical values ranging from 2 to 12 mg/L. TDS mapping in Figure 4-8 (California Department of Water Resources, 1978) indicates that brackish groundwater occurs in a half-mile-wide strip along the entire length of Salt Creek. This high TDS water is probably the result of evaporite deposits caused by past high-water-table conditions.

Under natural conditions, the primary source of recharge in the Winchester subbasin was subsurface inflow from the Hemet subbasin. The TDS in the subsurface inflow from the Hemet subbasin ranged from 500 to 1,000 mg/L. Currently, the Winchester subbasin flows into the Hemet subbasin causing groundwater degradation in that basin.

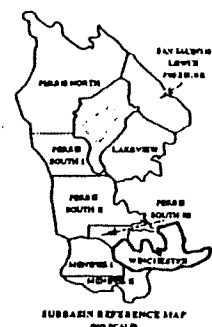
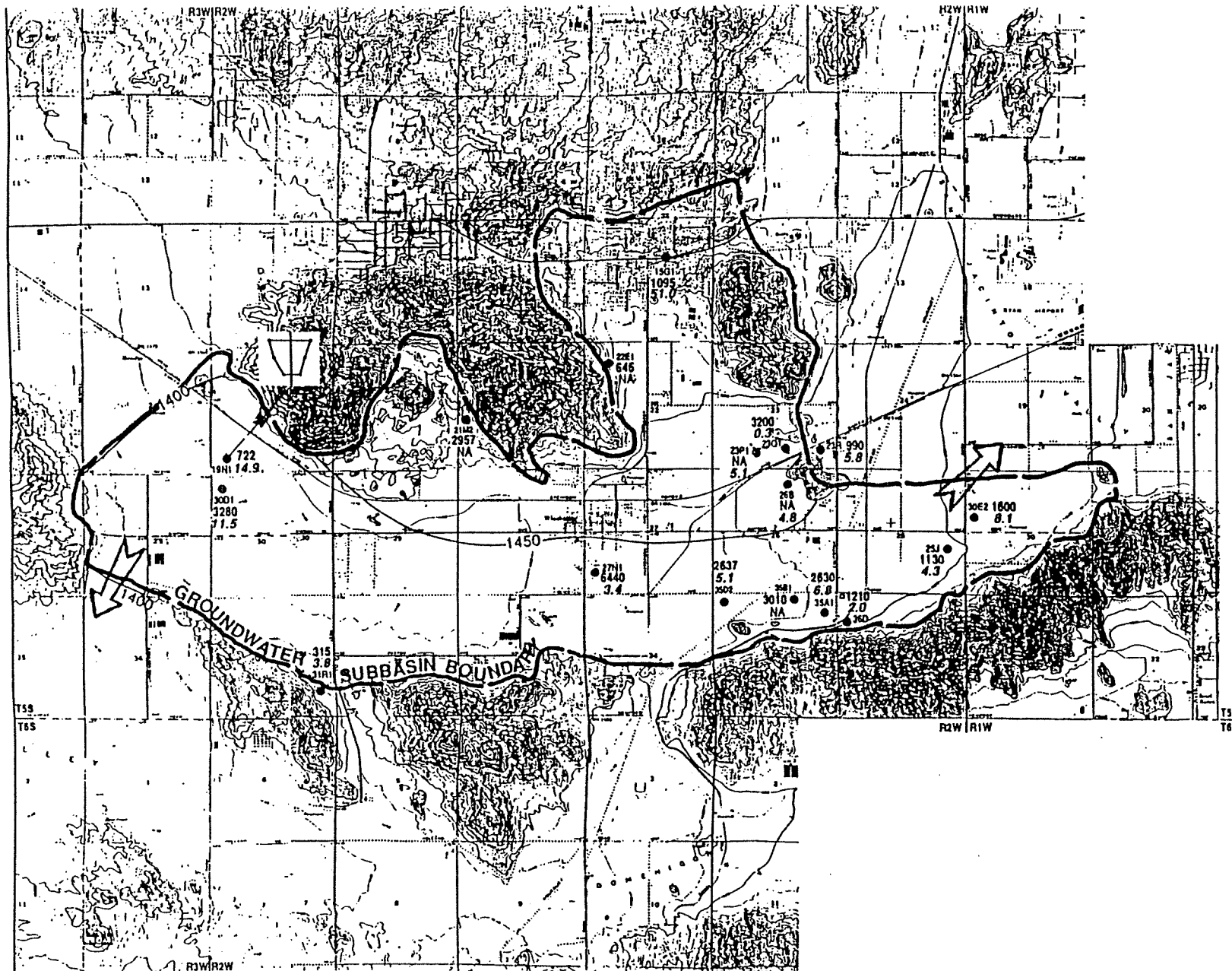
TDS, hardness and, occasionally, nitrate limit the use of Winchester groundwater for domestic purposes. Some groundwater in the Winchester subbasin cannot be used for municipal supply without demineralization. Agricultural usage is somewhat limited due to high boron and chloride concentrations.

### San Jacinto Lower Pressure Subbasin

Figure 4-20 illustrates the TDS, nitrate and general inorganic chemistry of the San Jacinto Lower Pressure subbasin. Figure 4-20 is based on all available data and corresponds approximately to 1993 conditions. Water quality time histories could not be developed for this subbasin due to lack of data.

TDS concentrations in groundwater typically range from 500 to 1,500 mg/L. Nitrates range from near zero to 33 mg/L as nitrogen, with typical values less than 3 mg/L. Although data in the northwestern part of the subbasin are limited, the faults in the area appear to affect nearby groundwater because high boron and fluoride concentrations are found there.





**Legend:**

- 303W/A Well location with State well ID
- 500 TDS concentration in mg/L
- 5.0 NO<sub>3</sub> (Ntrate) concentration in mg/L as Nitrogen

Cations	mg/L	Anions	General Inorganic Chemistry
Na + K	10	Cl	
Ca	10	HCO <sub>3</sub> + CO <sub>3</sub>	
Mg	10	SO <sub>4</sub>	

— 1350 — Approximate location of Groundwater Contour

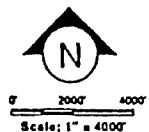
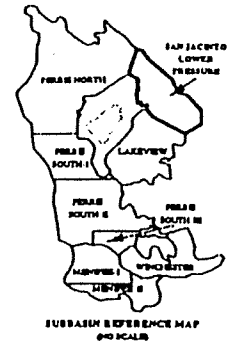
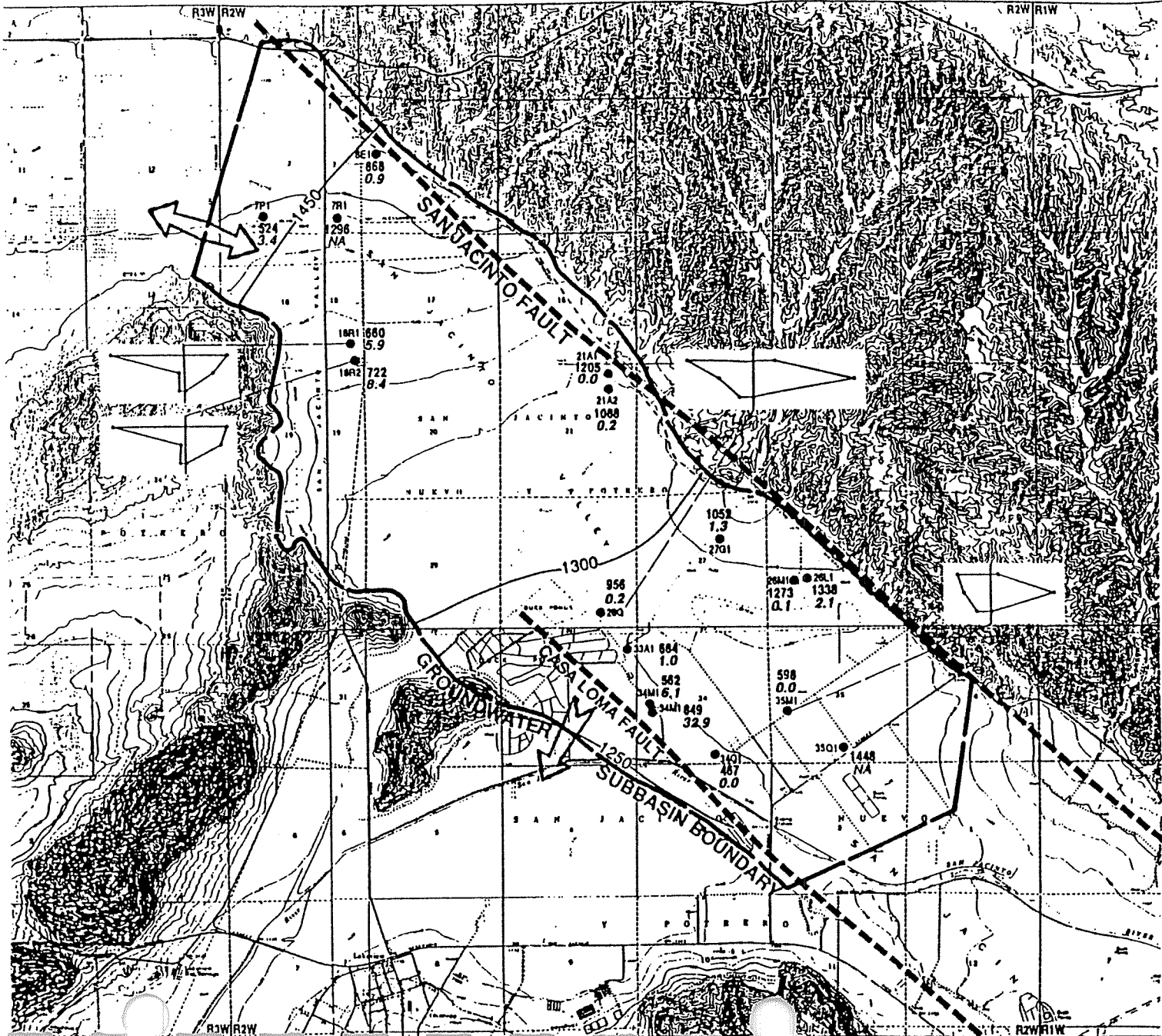


Figure 4-19  
**TDS, NITRATE, & GENERAL INORGANIC CHEMISTRY- WINCHESTER**



**Legend:**

- 35241A Well location with State well ID
- 500 TDS concentration in mg/L
- 5.0 NO<sub>3</sub> (Nitrate) concentration in mg/L as Nitrogen

Cations	meq/l	Anions	General Inorganic Chemistry
Na + K	5	Cl	
Ca	5		
Mg	5		

—1350— Approximate location of Groundwater Contour

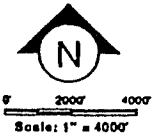


Figure 4-20  
**TDS, NITRATE, & GENERAL INORGANIC CHEMISTRY-  
 SAN JACINTO LOWER PRESSURE**

SECTION 4  
GROUNDWATER RESOURCES IN THE WEST SAN JACINTO BASIN

## FUTURE GROUNDWATER QUALITY

Future projections of groundwater quality in the West San Jacinto Groundwater basin were prepared by SAWPA as part of the *Nitrogen and TDS Studies, Santa Ana River Watershed* (James M. Montgomery, 1989). These studies developed future projections of TDS and nitrate by subbasin for the period 1990 through 2005. These estimates, however, are based on a model that:

- has not been calibrated for TDS or nitrate;
- each subbasin is represented by only one node and thus the resolution of the analysis is crude; and
- future water supply and wastewater plans that were used in these studies are not representative of the future.

Therefore, the results are questionable and not of much value as a management tool for the West San Jacinto Groundwater Basin.

There is a need for a planning tool to estimate the groundwater level and quality response to groundwater management practices. The planning tool would consist of groundwater flow and simulation models similar to those models that were developed and that are in current use to develop the Chino Basin Water Resources Management Plan (Montgomery Watson & Wildermuth, Mark J., 1992; Montgomery Watson & Wildermuth, Mark J., 1993).

**SECTION 5**

## SECTION 5 FUTURE WATER DEMANDS AND WASTEWATER FLOWS

### WATER DEMANDS AND SOURCES OF SUPPLY

#### Projected Demands

Projected Municipal Water demands for the West San Jacinto Groundwater Management area are listed in Table 5-1 and shown graphically in Figure 5-1. These estimates are based on land use and population projections and projected water use rates. The projections in Table 5-1 were developed by the planning staff of EMWD and represent an update of the water demand projections developed for the 1990 Water Facilities Master Plan (Black & Veatch, James M. Montgomery, Inc., 1990). Municipal demands in the West San Jacinto Groundwater Management Area range from 47,000 acre-ft/yr in 1995 (58 percent of total demand), to 112,000 acre-ft/yr in 2010.

Agricultural demands are based on land use and are projected to decline from about 33,200 acre-ft/yr in 1995, to 31,000 acre-ft/yr in 2010. In 1990, about eight percent of the imported water served by EMWD was delivered to agricultural users. Throughout the planning period we assumed that agricultural demands would be satisfied with groundwater and reclaimed water.

#### Sources of Supply

The sources of supply to the West San Jacinto Groundwater Management area include imported water from Metropolitan, groundwater, and reclaimed water.

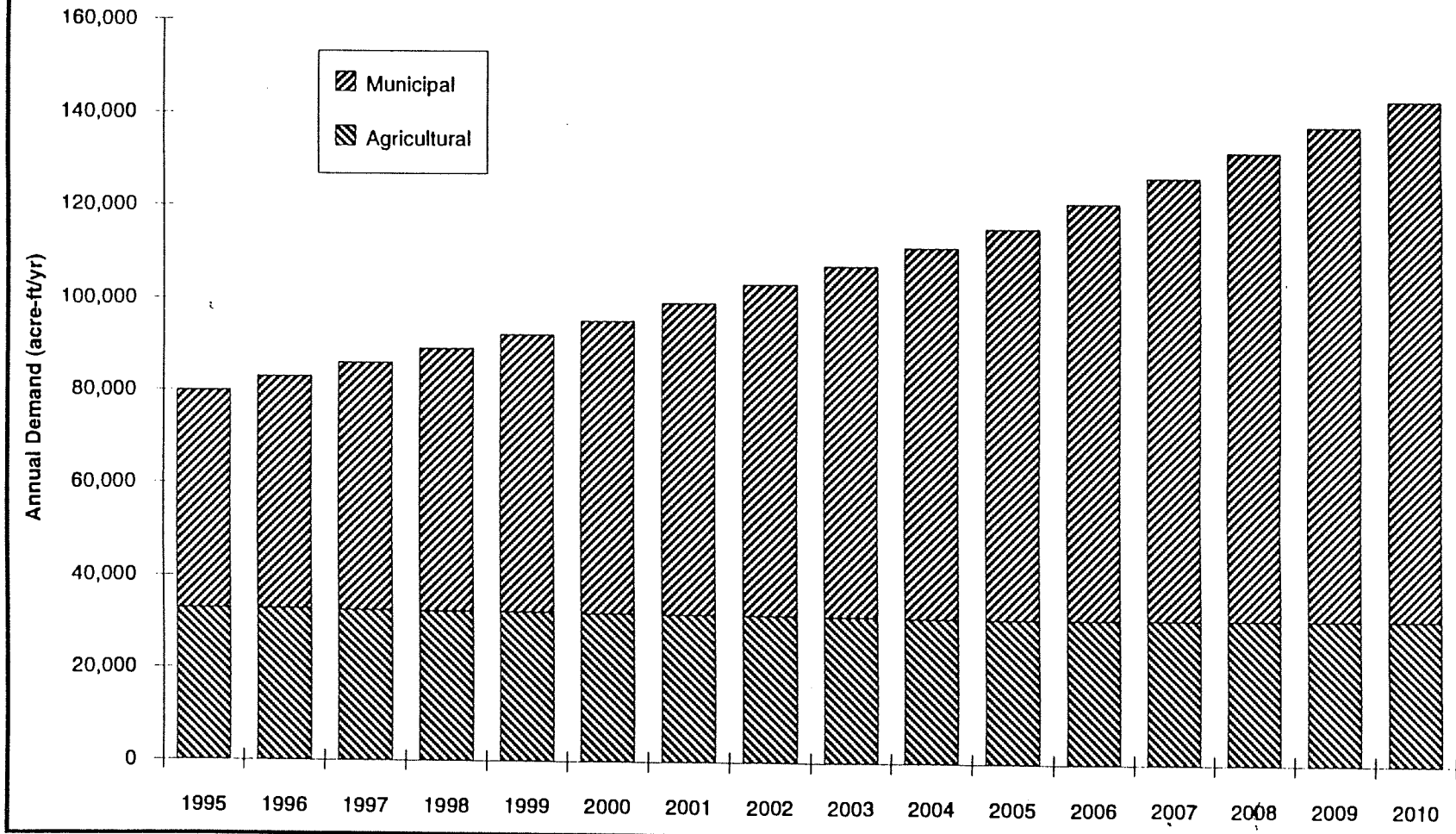
**Imported Water from Metropolitan.** The quality of treated imported water is generally excellent and meets all drinking water regulations. TDS in Colorado River water and, occasionally, SWP water, causes TDS concentration in wastewater to exceed the TDS limit specified for wastewater plants. The TDS concentrations in water will increase from 200 to 300

**TABLE 5-1  
 PROJECTIONS OF MUNICIPAL AND  
 AGRICULTURAL DEMANDS  
 WEST SAN JACINTO GROUNDWATER BASIN**

Year	Municipal Demands(1) (acre-ft/yr)	Agricultural Demands (acre-ft/yr)
1995	47,000	33,000
2000	63,000	32,000
2005	84,000	31,000
2010	112,000	31,000

Sources: (1) EMWD Projections 8/94

**FIGURE 5-1 WATER DEMAND PROJECTIONS FOR THE WEST SAN JACINTO GROUNDWATER MANAGEMENT AREA**



SECTION 5  
FUTURE WATER DEMANDS AND WASTEWATER FLOWS

mg/L through typical municipal use. Thus, if the average TDS concentration in a water supply is 400 mg/L, the TDS concentration in the resulting wastewater will be about 600 to 700 mg/L. The TDS limits for EMWD's reclamation plants and the TDS required in the water supply to meet the TDS limits are listed below.

Reclamation Plant	TDS Limit (mg/L)	Water Supply TDS in the Tributary Area (mg/L)
Hemet-San Jacinto	575	325
Moreno Valley	550	300
Perris Valley	825	575
Sun City	950	700
Temescal	700	450

Figure 5-2 shows the TDS concentration of SWP water and Colorado River water available from Metropolitan in the management area. The average TDS concentration for SWP water is about 250 mg/L for the period shown in Figure 5-2. The comparable average for Colorado River water is about 660 mg/L. SWP water can be used in the areas tributary to all five reclamation plants listed above without causing violations, with the exception of the Moreno Valley plant that would have TDS concentrations in excess of the TDS limitations about 29 percent of the time. The use of Colorado River water or other sources with high TDS could cause TDS violations to occur at all five plants.

Metropolitan adopted a schedule of projected water rate increases in 1991. The water rates established included:

- a base rate;
- a treatment surcharge, to be added to the base rate for purchases of treated water; and
- a seasonal discount for water produced from October 1 through April 30, to be subtracted from the base rate.

The goals of the seasonal discount are: to achieve greater conjunctive use of imported supplies and local supplies; encourage the construction of additional local production facilities; and reduce member agencies' dependence on Metropolitan deliveries during the summer months. Recently, Metropolitan announced water prices for 1993 and forecasted rates for the following ten years. The projected cost of imported water purchased from Metropolitan is listed in Table 5-2 and is shown graphically in Figure 5-3. Imported water costs after 2002 are assumed to increase 6 percent per year.



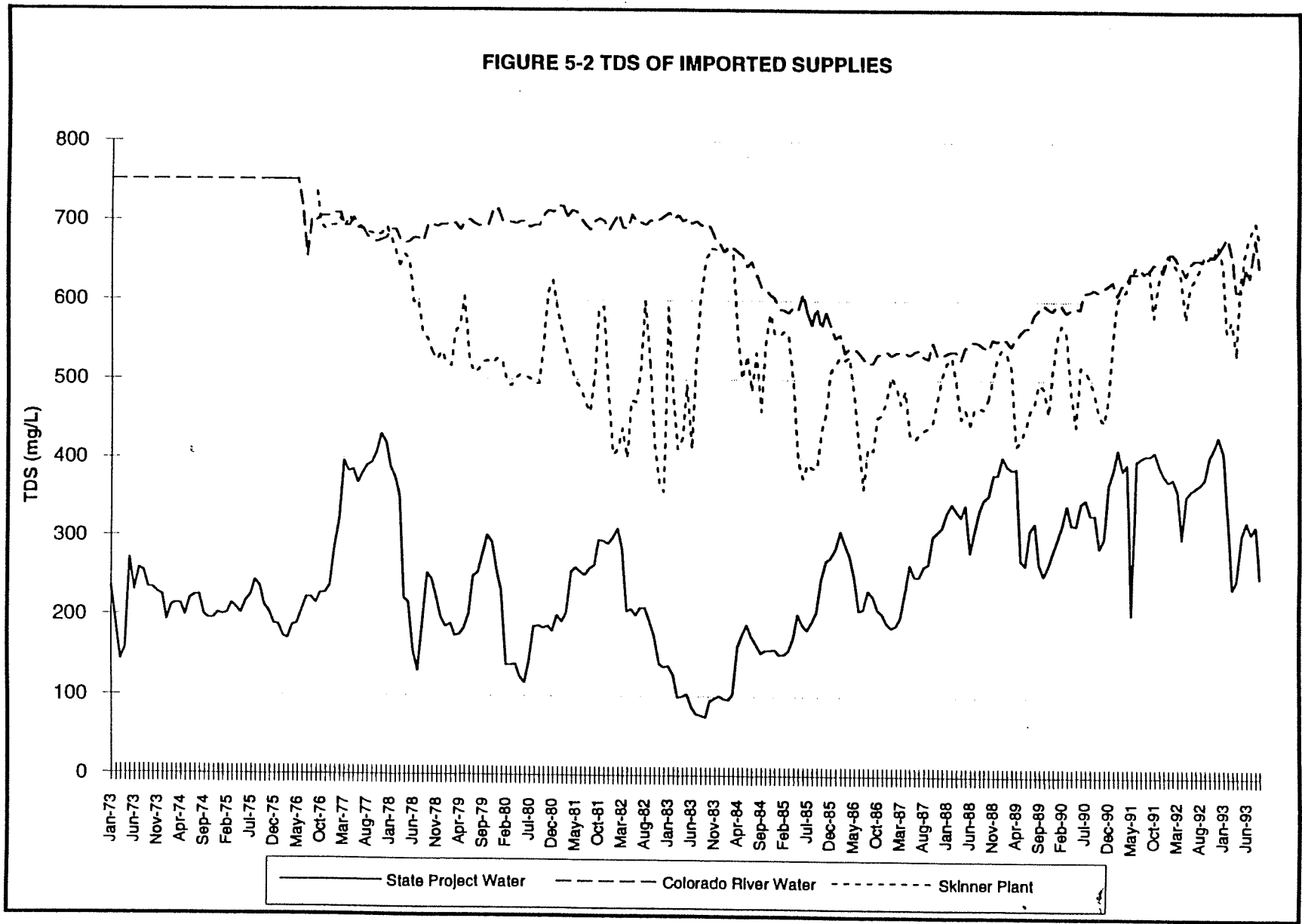


Figure 5-2 MWD  
9/2/94  
9:38 AM

Mark J. Wildermuth  
Water Resources Engineer

**TABLE 5-2  
METROPOLITAN WATER RATE PROJECTIONS**

4/2/94

Year	Treatment Surcharge	Base Rate	Base Treated	Seasonal Storage (1)	
				Untreated	Treated
1994	\$77	\$335	\$412	\$222	\$275
1995	\$77	\$377	\$454	\$256	\$256
1996	\$78	\$405	\$483	\$278	\$279
1997	\$78	\$437	\$515	\$304	\$304
1998	\$89	\$456	\$545	\$319	\$328
1999	\$98	\$480	\$578	\$338	\$345
2000	\$104	\$509	\$613	\$361	\$366
2001	\$105	\$544	\$649	\$389	\$390
2002	\$109	\$579	\$688	\$417	\$420
2003	\$114	\$616	\$730	\$447	\$451
2004	\$119	\$654	\$773	\$477	\$481
2005	\$124	\$696	\$820	\$511	\$515
2006	\$130	\$739	\$869	\$545	\$550
2007	\$136	\$785	\$921	\$582	\$587
2008	\$142	\$834	\$976	\$621	\$626
2009	\$148	\$887	\$1,035	\$664	\$669
2010	\$154	\$943	\$1,097	\$708	\$713

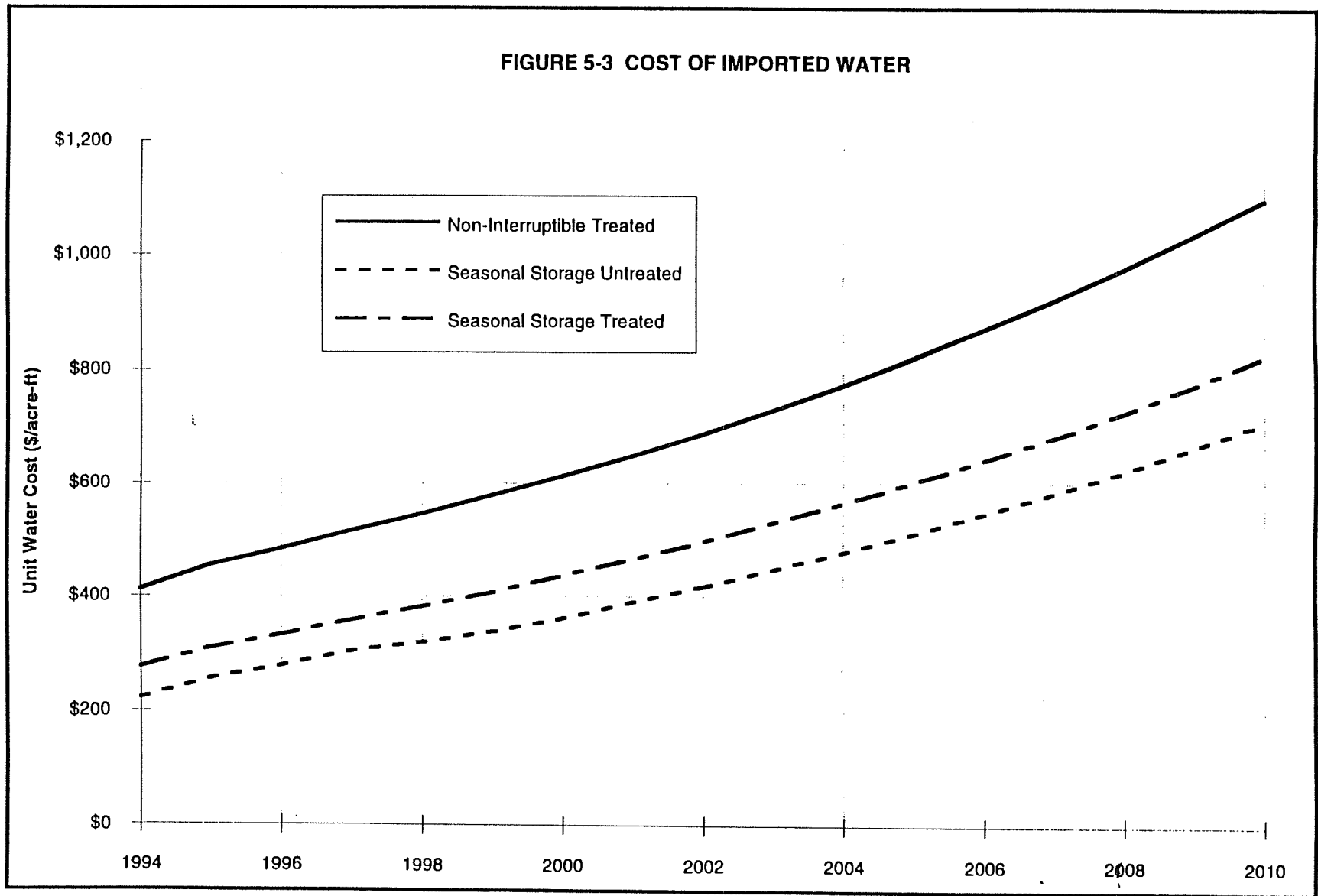


Figure 5-3  
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SECTION 5  
FUTURE WATER DEMANDS AND WASTEWATER FLOWS

Metropolitan is currently evaluating supply reliability for its service area (Metropolitan Water District of Southern California, 1994). Metropolitan is projecting that with year 2000 demands, shortages in retail supplies will occur at least four out of five years, with shortages up to 30 percent. By the year 2020, shortages will occur on average once in five years, with shortages up to 20 percent. The frequency and magnitude of retail shortages will be comparable for areas that depend heavily on Metropolitan.

**Groundwater.** Groundwater is available throughout the management area in that most of the management area overlies the West San Jacinto Basin. However, the quality of groundwater precludes the use of some of the management area groundwater for municipal supply. TDS and nitrate are the water quality constituents that limit the use of groundwater. TDS is regulated as a secondary standard. Secondary standards are for those substances that are not hazardous to health, but may cause taste, odor, color, staining or other conditions that adversely affect the aesthetics of drinking water. The maximum contaminant level (MCL) for TDS is expressed as follows:

*Recommended MCL* - 500 mg/L. TDS concentrations less than or equal to the *Recommended MCL* are desirable for a higher level of consumer acceptance.

*Upper MCL* - 1,000 mg/L. TDS concentrations ranging up to the *Upper MCL* are acceptable if it is neither reasonable nor feasible to provide more suitable waters.

*Short Term MCL* - 1,500 mg/L. TDS concentrations ranging up to the *Short Term MCL* are acceptable only for existing systems on a temporary basis, pending the construction of treatment facilities or the development of acceptable new water sources.

Nitrate is regulated under primary standards. The MCL for nitrate is 10 mg/L (as nitrogen). Table 5-3 lists the groundwater in storage, storage capacity, safe yield, and average TDS and nitrate concentrations for each groundwater subbasin in the management area. The subbasins are ranked in Table 5-3 from lowest to highest in TDS. From a drinking water perspective, approximately 36 percent of the yield of the West San Jacinto Basin could be developed from the Lakeview and Perris North subbasins for direct use, without additional treatment for TDS and nitrate. Some groundwater in the Perris South-I subbasin could also be used without treatment and San Jacinto Lower Pressure, Perris South-II and Perris South-III groundwater could be used

**TABLE 5-3  
AVAILABILITY OF GROUNDWATER IN THE  
WEST SAN JACINTO BASIN  
YEAR 2000 CONDITIONS**

Subbasin	Volume in Storage	Storage Capacity	Fraction of Groundwater in West San Jacinto Basin	Natural Safe Yield	Safe Yield with Wastewater Recharge	Fraction of Yield in West San Jacinto Basin	Average TDS Concentration	Average Nitrate Concentration (as Nitrogen)
	(acre-ft)	(acre-ft)		(acre-ft/yr)	(acre-ft/yr)		(mg/L)	(mg/L)
Perris North	123,000	347,000	11%	13,700	19,500	41%	430	7
Lakeview	283,000	515,000	25%	6,800	6,800	14%	500	3
Perris South	248,000	402,000	22%	8,300	12,800	27%	920	5
San Jacinto Lower Pressure	382,000	391,000	34%	2,500	2,500	5%	1,000	4
Winchester	36,000	41,000	3%	1,600	1,800	4%	2,000	8
Menifee	56,000	101,000	5%	3,300	4,700	10%	2,250	6
Totals	1,128,000	1,797,000	100%	36,200	48,100	100%		
Average							891	5

SECTION 5  
FUTURE WATER DEMANDS AND WASTEWATER FLOWS

if blended with SWP water. Groundwater from the Menifee-I, Menifee-II, Winchester and parts of the Perris South-II subbasins will require treatment if groundwater from these subbasins is to be used as a municipal drinking water supply. The treatment processes that would make these basins useful as a water supply source are blending with low TDS supplies such as SWP water, and demineralization. From a wastewater perspective, most of the groundwater in the West San Jacinto Basin would have to be treated prior to use as a municipal supply.

EMWD is currently designing a groundwater demineralization facility in the Menifee area. This facility will produce about 3 mgd (3,360 acre-ft/yr) of potable water for municipal use. The source water to the desalter will have a TDS of about 2,400 mg/L. The product water will have a TDS concentration of about 400 mg/L. This project will develop the full yield of the Menifee-I and Menifee-II subbasins for municipal use.

The cost to use groundwater, exclusive of treatment, includes capital cost and operations and maintenance costs. The capital cost for new municipal wells ranges from about \$400,000 to \$500,000. This is equivalent to about \$32 per acre-ft, assuming a 1,500 gpm well (2,420 acre-ft/yr), six percent amortization rate, 20-year amortization period and 50% usage. Fixed operating and maintenance costs are about \$6 per acre-ft. Power costs vary according to lift and pumping plant efficiency. The cost for a pumping lift of 200 feet and overall plant efficiency of 60 percent is about \$30 per acre-ft. Thus, the total cost to produce groundwater for a 1,500-gpm well, operating year round with a total lift of 200 feet would be about \$68 per acre-ft.

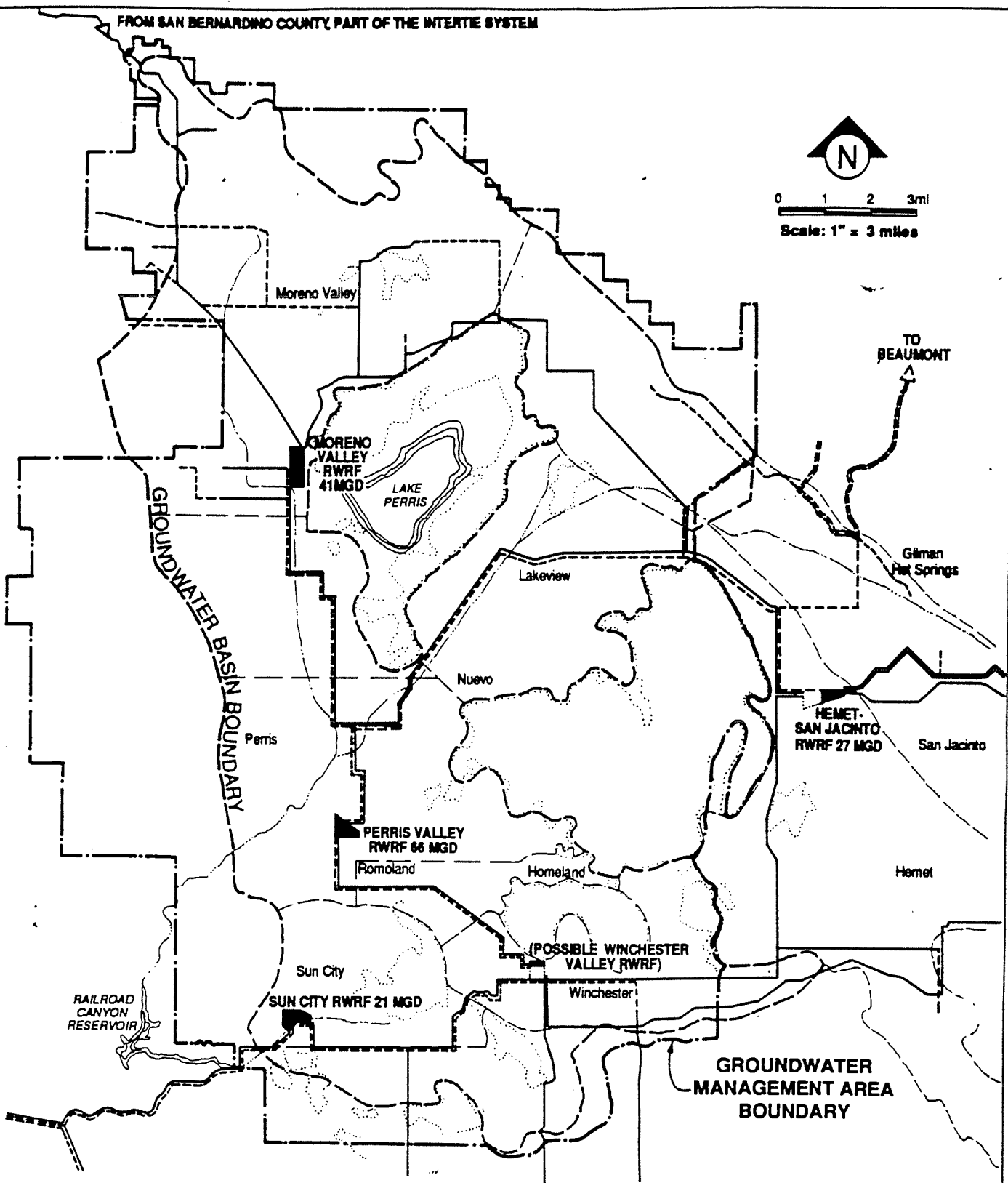
**Reclaimed Water.** Currently, EMWD is in a phased process of implementing a reclaimed water distribution plan that will make reclaimed water available throughout the management area. The reclaimed water system consists of five reclamation plants and about 79 miles of backbone distribution pipelines. Figure 5-4 shows the layout of the pipelines and the location of reclamation plants. Table 5-4 shows the projections of the availability of reclaimed water during the planning period. Reclaimed water sources include the discharge of up to 30 mgd or 33,600 acre-ft/yr of reclaimed water from the city of San Bernardino. The TDS of reclaimed water from San Bernardino is projected to range between 480 mg/L to 500 mg/L, which is lower than any of the reclaimed water generated in EMWD. The use of reclaimed water replaces non-potable demand on groundwater and imported supplies.

For this study, we have assumed the cost of producing and distributing reclaimed water in the EMWD service area to be a sunk cost. EMWD must treat and dispose of reclaimed water. The

FROM SAN BERNARDINO COUNTY, PART OF THE INTERTIE SYSTEM



0 1 2 3mi  
Scale: 1" = 3 miles



**LEGEND:**

- EXISTING RECLAIMED WATER SYSTEM (CONSTRUCTED OR DESIGNED)
- - - - ULTIMATE RECLAIMED WATER SYSTEM
- RWF LOCATION, WITH ULTIMATE CAPACITY

Figure 5-4  
**ULTIMATE RECLAIMED WATER SYSTEM**

**TABLE 5-4**  
**PROJECTED RECLAIMED WATER FLOWS**  
 (acre-ft/yr)

Reclamation Plant	1995	2000	2005	2010
Moreno Valley	10,328	15,274	20,435	25,597
Perris Valley	8,110	11,994	16,041	20,089
Sun city	2,532	3,750	5,013	6,275
Temecula Valley (1)	5,332	7,897	10,558	13,219
Hemet-San Jacinto (1)	5,646	8,343	11,165	13,987
Subtotal	31,947	47,258	63,213	79,167
San Bernardino (2)	0	11,201	12,322	20,723
Totals	31,947	58,459	75,534	99,890

Sources: Wastewater Facilities Master Plan Black & Veatch and James M. Montgomery, 1990;  
 Projected Water Demands and Planned Storage for the Years 1995 to 2005, Eastern Municipal  
 Water District, 1993.

Note - (1) Reclaimed water from outside of West San Jacinto Groundwater Basin management area.  
 (2) Reclaimed water pumped to EMWD from city of San Bernardino.



SECTION 5  
FUTURE WATER DEMANDS AND WASTEWATER FLOWS

cost of the reclaimed water distribution system is the cost of disposal. The value of the reclaimed water as a resource to non-potable water users is equal to their next least costly source of water. For a farmer, the value of the reclaimed water is approximately the same as the cost to produce groundwater. A typical 1,000 gpm agricultural well cost would be about \$250,000. Assuming the well is operated half the year, the amortization cost is about \$27 per acre-ft. Total operation and maintenance costs would be about \$36 per acre-ft for a total lift of 200 feet. The total cost of operating a well for an agricultural supply is about \$63 per acre-ft. These costs would be about the same for industrial and large urban landscape users. These costs vary with depth to groundwater and location in the study area.

### **WATER SUPPLY PLAN WITHOUT GROUNDWATER MANAGEMENT PLAN**

The water supply plan for the management area, in the absence of a groundwater management plan, consists of the use of imported water for all municipal uses and a combination of groundwater and reclaimed water for agricultural uses. All agricultural demands would be satisfied with reclaimed water by the year 2010. The Menifee desalter would be operational in 1997, producing about 3,360 acre-ft/yr. The water supply plan for the management area is listed in Table 5-5. Groundwater usage in 1995 is estimated to range from 26,600 acre-ft/yr (33 percent of total supply) in 1995, to 28,000 acre-ft/yr by 2010 (19 percent of total supply). The Menifee desalter will require about 4,200 acre-ft/yr of groundwater to produce 3,360 acre-ft/yr of product water.

Imported water use in the management area is projected to range from about 44,500 acre-ft/yr (56 percent of total supply) in 1995, to 103,000 acre-ft/yr (72 percent of total supply) by the year 2010. Imported water is used for municipal purposes only. Reclaimed water use in the management area is projected to range from about 8,900 acre-ft/yr (11 percent of total supply) in 1995, to 11,900 acre-ft/yr (8 percent of total supply) by the year 2010. Reclaimed water would be used for agricultural and non-potable municipal purposes.

The cost of this water supply plan, exclusive of the distribution costs, is summarized in Table 5-6. Table 5-6 shows the annual demand, supplies by source and cost of each source in terms of annual cost, total annual cost and present value of all cost over the 1995 to 2010 planning period. The fractions of total supply and total supply cost by source are listed below.

**TABLE 5-5**  
**WATER SUPPLY PLAN IN THE ABSENCE OF**  
**A GROUNDWATER MANAGEMENT PLAN**  
**(acre-ft/yr)**

Year	1995		2000		2005		2010	
	Volume	Fraction	Volume	Fraction	Volume	Fraction	Volume	Fraction
<b><u>Municipal Demand</u></b>	<b><u>47,000</u></b>	<b><u>100%</u></b>	<b><u>63,000</u></b>	<b><u>100%</u></b>	<b><u>84,000</u></b>	<b><u>100%</u></b>	<b><u>112,000</u></b>	<b><u>100%</u></b>
Imported Water	44,500	95%	56,140	89%	76,140	91%	103,140	92%
Menifee Desalter	0	0%	3,360	5%	3,360	4%	3,360	3%
Reclaimed Water	0	0%	1,000	2%	2,000	2%	3,000	3%
Groundwater	2,500	5%	2,500	4%	2,500	3%	2,500	2%
<b><u>Agricultural Demand</u></b>	<b><u>33,000</u></b>	<b><u>100%</u></b>	<b><u>32,000</u></b>	<b><u>100%</u></b>	<b><u>31,000</u></b>	<b><u>100%</u></b>	<b><u>31,000</u></b>	<b><u>100%</u></b>
Reclaimed Water	8,900	27%	8,900	28%	8,900	29%	8,900	29%
Groundwater	24,100	73%	23,100	72%	22,100	71%	22,100	71%
<b><u>Total Demand</u></b>	<b><u>80,000</u></b>	<b><u>100%</u></b>	<b><u>95,000</u></b>	<b><u>100%</u></b>	<b><u>115,000</u></b>	<b><u>100%</u></b>	<b><u>143,000</u></b>	<b><u>100%</u></b>
Imported Water	44,500	56%	56,140	59%	76,140	66%	103,140	72%
Menifee Desalter (1	0	0%	3,360	4%	3,360	3%	3,360	2%
Reclaimed Water	8,900	11%	9,900	10%	10,900	9%	11,900	8%
Groundwater (2)	26,600	33%	25,600	27%	24,600	21%	24,600	17%

note - (1) actual groundwater production for the Menifee desalter will be about 4,200 acre-ft/yr with 3,360 acre-ft/yr of potable water and 1,840 acre-ft/yr.

**TABLE 5-6  
COST OF WATER SUPPLY FOR THE WEST SAN JACINTO GROUNDWATER BASIN MANAGEMENT AREA  
WITHOUT A GROUNDWATER MANAGEMENT PLAN**

Year	Demand Volume (acre-ft/yr)	Imported Water			Reclaimed Water			Groundwater									Total Cost of Groundwater Production (\$)	Total Cost (\$)	Composite Unit Cost of Supply (\$/acre-ft)
		Rate (\$/acre-ft)	Cost (\$)	Volume (acre-ft/yr)	Rate (\$/acre-ft)	Cost (\$)	Municipal Disaster			Agricultural Use			Municipal Use						
							Volume	Rate	Cost	Volume	Rate	Cost	Volume	Rate	Cost				
1995	80,000	44,500	\$454	\$20,203,000	8,900	\$63	\$560,700	0	\$301	\$0	24,100	\$63	\$1,518,300	2,500	\$68	\$170,000	\$1,688,300	\$22,452,000	\$281
1996	83,000	47,300	\$483	\$22,942,500	9,100	\$66	\$596,232	0	\$316	\$0	23,900	\$66	\$1,565,928	2,500	\$71	\$176,800	\$1,742,728	\$25,281,460	\$305
1997	86,000	47,140	\$515	\$24,277,100	9,300	\$68	\$633,709	3,360	\$332	\$1,787,520	23,700	\$68	\$1,614,937	2,500	\$74	\$183,872	\$3,586,329	\$28,497,138	\$331
1998	89,000	50,140	\$545	\$27,326,300	9,500	\$71	\$673,231	3,360	\$549	\$1,844,640	23,300	\$71	\$1,665,361	2,500	\$76	\$191,227	\$3,701,228	\$31,700,759	\$356
1999	92,000	53,140	\$578	\$30,714,920	9,700	\$74	\$714,901	3,360	\$578	\$1,942,080	23,300	\$74	\$1,717,235	2,500	\$80	\$198,876	\$3,858,191	\$35,288,012	\$384
2000	95,000	56,140	\$613	\$34,413,748	9,900	\$77	\$758,826	3,360	\$613	\$2,059,752	23,100	\$77	\$1,770,395	2,500	\$83	\$206,831	\$4,037,178	\$39,209,732	\$413
2001	99,000	60,140	\$649	\$39,030,784	10,100	\$80	\$805,122	3,360	\$649	\$2,180,716	22,900	\$80	\$1,825,476	2,500	\$86	\$215,104	\$4,231,296	\$44,057,202	\$445
2002	103,000	64,140	\$688	\$44,128,240	10,300	\$83	\$853,908	3,360	\$688	\$2,311,760	22,700	\$83	\$1,881,914	2,500	\$89	\$223,708	\$4,417,383	\$49,399,531	\$480
2003	107,000	68,140	\$730	\$49,742,115	10,500	\$86	\$905,308	3,360	\$730	\$2,452,885	22,500	\$86	\$1,939,947	2,500	\$93	\$232,657	\$4,625,489	\$55,272,912	\$517
2004	111,000	72,140	\$773	\$55,764,130	10,700	\$90	\$959,434	3,360	\$773	\$2,597,370	22,300	\$90	\$1,999,611	2,500	\$97	\$241,963	\$4,838,944	\$61,562,528	\$555
2005	115,000	76,140	\$820	\$62,434,704	10,900	\$93	\$1,016,484	3,360	\$820	\$2,755,296	22,100	\$93	\$2,060,944	2,500	\$101	\$251,642	\$5,067,882	\$68,519,069	\$596
2006	120,600	81,540	\$869	\$70,858,158	11,100	\$97	\$1,076,540	3,360	\$869	\$2,919,942	22,100	\$97	\$2,143,382	2,500	\$105	\$261,707	\$5,325,031	\$77,259,729	\$641
2007	126,200	86,940	\$921	\$80,071,632	11,300	\$101	\$1,139,775	3,360	\$921	\$3,094,668	22,100	\$101	\$2,229,117	2,500	\$109	\$272,175	\$5,595,960	\$86,807,367	\$688
2008	131,800	92,340	\$976	\$90,123,726	11,500	\$105	\$1,206,346	3,360	\$976	\$3,279,474	22,100	\$105	\$2,318,282	2,500	\$113	\$283,062	\$5,880,819	\$97,310,890	\$738
2009	137,400	97,740	\$1,035	\$101,160,779	11,700	\$109	\$1,276,419	3,360	\$1,017	\$3,417,239	22,100	\$109	\$2,411,013	2,500	\$118	\$294,385	\$6,122,637	\$108,559,835	\$790
2010	143,000	103,140	\$1,097	\$113,144,452	11,900	\$113	\$1,350,167	3,360	\$1,041	\$3,497,882	22,100	\$113	\$2,507,454	2,500	\$122	\$306,160	\$6,311,496	\$120,806,115	\$845
Total Volume	1,719,000	1,100,959			166,400			47,041			364,600			40,000					
Fraction of Total	100%	64%			10%			3%			21%			2%					
Total Cost				\$866,336,287			\$14,527,124			\$36,141,224			\$31,169,495					\$951,884,301	
Fraction of Total				91%			2%			4%			3%						
Present Value																			\$156,663,649.25

Table 5-6  
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Mark J. Wildern  
Water Resources Engr

SECTION 5  
FUTURE WATER DEMANDS AND WASTEWATER FLOWS

Source	Fraction of Total Supply	Fraction of Total Supply Cost
Imported Water	64%	91%
Reclaimed Water	10%	2%
Menifee Desalter	3%	4%
Groundwater	23%	3%

The most expensive water in the supply plan is Menifee desalter water, ranging from \$532 to \$1,041 per acre-ft over the planning period. The second most expensive water in the supply plan is imported water, ranging from \$454 to \$1097 per acre-ft over the planning period. The cost of reclaimed water and groundwater are about one-tenth that of imported water, ranging from about \$63 to \$122 per acre-ft over the planning period. From a purely economic viewpoint, the cost of future supplies could be reduced if more groundwater and reclaimed water can be used for municipal supplies. The present value cost of future water supplies in the management area, exclusive of new pipelines, pump stations and reservoirs, is about \$557,000,000 for the period of 1995 to 2010.

**SECTION 6**

## SECTION 6 GROUNDWATER MANAGEMENT GOALS

The mission statement of EMWD is:

*The mission of the Eastern Municipal Water District is to deliver a dependable supply of safe, quality water and provide sewage collection services to its customers in an economical, efficient and publicly responsible manner.*

The water supply part of EMWD's mission statement is a goal shared by all purveyors of water in the West San Jacinto Groundwater Basin management area. Groundwater, as a potentially important part of the water supply in the management area, should be incorporated into the water supply plans of the management area. The safe yield of the West San Jacinto Basin is about 32,000 acre-ft/yr. Projections of groundwater usage in the management area range from about 30,000 acre-ft/yr in 1995, to 28,000 acre-ft/yr in 2010.

Agricultural groundwater use will decrease slightly in the future, from about 24,100 acre-ft/yr to 22,100 acre-ft/yr, as agricultural lands are converted to urban uses. Remaining agricultural water demand will be converted to reclaimed water. The need for potable water will increase dramatically in the future. Potable water demands in the management area will range from 69,600 acre-ft/yr in 1995, to 167,000 acre-ft/yr by 2010.

Most of the new potable demand will be met from treated imported water purchased from Metropolitan. Metropolitan's supplies are projected to increase in cost about 142 percent over the 1995 to 2010 planning period, from \$454 per acre-ft in 1995, to \$1097 per acre-ft in 2010. Metropolitan's supply is also not entirely reliable. For year 2000 demands, Metropolitan has projected shortages in four years out of five years, ranging from 10 to 30 percent.

SECTION 6  
GROUNDWATER MANAGEMENT GOALS

There are many private groundwater producers in the management area that do not rely on EMWD for water supply. The negative impacts, if any, of a groundwater management plan on these users must be minimized; and the ability of these groundwater producers to continue producing groundwater for beneficial use must be preserved or equitably replaced.

Based on the above comments, the goal of the groundwater management plan is to

*maximize the use of groundwater for potable demands in such a way as to lower the cost of water supply and to improve the reliability of the total water supply for all water users in the West San Jacinto Groundwater Basin Management area.*

There are several elements that could go into the management plan to achieve this goal. The next section describes these elements.

**SECTION 7**



## SECTION 7 ELEMENTS OF GROUNDWATER MANAGEMENT PLAN

This section describes the features or elements that can be used to build a groundwater management plan that is consistent with the management plan goal described in Section 6 and A.B. 3030. These elements include: new management policies, yield enhancement programs, conjunctive use, and the exchange of agricultural and other non-potable water users from groundwater to reclaimed water. These elements are described below.

### MANAGEMENT POLICY ELEMENTS

Management policy elements consist of developing and implementing policies, regulations and coordinated activities among the groundwater producers. Currently, there is no routine monitoring of groundwater production, groundwater level and groundwater quality in the management area. There are no programs or institutions that routinely collect and review these data. There are no management tools available to forecast the impact of existing and future groundwater management practices. Consequently, there is little information available to site new groundwater recharge and extraction facilities.

Currently, there is no coordination or oversight of well construction in the management area. There is no systematic plan to manage unused and obsolete wells. The management plan needs to include policies to manage well construction and to ensure their destruction when wells become obsolete.

### Monitoring of Groundwater Production, Groundwater Levels and Groundwater Quality

**Groundwater Production.** There is very little reported groundwater production data in the management area. The reported groundwater production volumes for the period ranged from 6,000 to 13,000 acre-ft/yr during the five-year period of 1987 to 1991 (see table 4-3). The 1991

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ELEMENTS OF GROUNDWATER MANAGEMENT PLAN

estimate of agricultural demand in the management area, based on land use, is about 33,200 acre-ft/yr, of which about 27,000 acre-ft is estimated to be satisfied with groundwater. Groundwater production needs to be limited to the long term safe-yield of the management area and, locally, to the safe yield of the individual subbasins in the management area. Temporary overdraft could be allowed and, occasionally, encouraged during periods of imported supply shortages, as long as there is a way to replenish the overdraft. Uncontrolled overdraft, similar to that which occurred prior to the mid 1970's, will cause groundwater levels to drop, some wells to dry up, increase the cost of producing groundwater and lead to groundwater quality degradation. Therefore, it is important to obtain accurate information on groundwater production volume and to make a determination of the hydrologic balance for each subbasin in the management area.

**Groundwater Level and Quality Monitoring.** The monitoring of groundwater level (or storage) data includes the routine collection and review of groundwater level data to determine the hydraulic and volumetric response of the groundwater basin to groundwater management activities and climate. The monitoring of groundwater quality includes the collection and review of groundwater quality data that can be used to assess current and future trends in groundwater quality, and to evaluate groundwater quality response to groundwater management activities and climate.

**Administration and Monitoring of Well Construction**

**Monitoring of Well Construction.** The monitoring of well construction and location is extremely important to the understanding of current groundwater conditions and for future groundwater development. Well construction information includes the size and design of the well, lithology and aquifer test data. These data are necessary for the interpretation of groundwater production, level and quality data; and the evaluation of the aquifer as a source of supply. For the management plan, all these data should be collected, digitized and placed into a data base for future use. EMWD is in the process of completion of this data base for most of the existing wells in the management area. These data would be made available to all groundwater producers so that the producers can more reliably construct and operate new wells. These data would be used in future groundwater studies.

**Administration of Well Construction Policies.** Poor well construction can lead to groundwater contamination and excessive drawdown. Contamination can occur from inadequate sanitary seals, location of wells in, or near, contaminated groundwater, and cross contamination.

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ELEMENTS OF GROUNDWATER MANAGEMENT PLAN**

Excessive drawdown could be caused by over-extraction, interference from other adjacent wells or poor aquifer properties. Policies need to be developed that:

- Specify criteria that will be used to locate wells. Well location criteria would be established to ensure that new wells do not contribute to groundwater quality degradation. The intent of this policy is to minimize the redirection and acceleration of known contaminated groundwater to areas of potable supply.
- Develop minimum well construction standards. Minimum well construction standards would be developed based on existing state and county standards and additional standards that will be unique to the management area.
- Review and approval of proposed new well locations and well designs. The intent of the policy is to protect groundwater quality consistent with well siting criteria and construction standards.

**Administration of Well Abandonment and Destruction Program**

There are many obsolete and unused wells in the management area that are potentially useful for future production and monitoring of groundwater levels and quality. Unused wells could also be a source of contamination. Illegal disposal of wastes sometimes occurs in unused wells. Cross contamination between aquifers can occur through wells when contaminated groundwater in one aquifer flows into a well, vertically, through the casing and out of the well into an uncontaminated aquifer. The management plan should contain policies and regulations that will locate all obsolete and unused wells, and make a determination as to the most beneficial fate of each such well. Obsolete and unused wells that do not present a water quality contamination threat and have a potential use should be preserved. Otherwise, these wells should be properly destroyed.

**Groundwater Quality Protection**

Groundwater quality protection will maintain existing yield and reduce the future cost of water treatment. There are two parallel tracks to follow:

- prevention of pollution
- control and mitigation of existing groundwater quality problems.

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ELEMENTS OF GROUNDWATER MANAGEMENT PLAN

EMWD should develop an aggressive groundwater pollution prevention program that, at a minimum, embodies the Basin Plan. Groundwater quality should be constantly monitored to assess spatial and time trends in groundwater quality in the groundwater management area. At a minimum, these efforts should include the monitoring of water quality data from municipal and agricultural wells, landfills, chemical and industrial operations, underground storage tanks, areas undergoing groundwater remediation such as March Air Force Base, sludge disposal areas and reclaimed water recharge areas. EMWD should consider obtaining authority to act proactively to prevent pollution and to take immediate action on new pollution threats when they occur.

The control and mitigation of existing groundwater quality problems consists of the containment and, potentially, the remediation of existing water quality problems, such that adjacent high quality groundwater resources are not degraded. Three major areas of concern in the West San Jacinto Groundwater Management Plan area are high TDS groundwater in the Perris South II subbasin (Ski Land area), migration of high TDS groundwater from the Winchester subbasin into the Hemet subbasin, and the organics contamination at March Air Force Base. The groundwater management plan should contain elements that will ensure that these three problems are controlled and mitigated.

EMWD has initiated a pollution prevention program in the Meniffee subbasin. This program will intercept and treat saline groundwater that would otherwise migrate to areas with high quality groundwater and cause the abandonment of wells. This program will lead to the eventual recovery of the entire Meniffee subbasin.

## **YIELD ENHANCEMENT ELEMENTS**

### **Artificial Recharge**

Artificial recharge is the recharge of water from sources that are not normally tributary to groundwater. There are three sources of water for artificial recharge in the West San Jacinto Groundwater Basin management area: local runoff, imported water and reclaimed water.

**Artificial recharge with local runoff.** There are several ways local runoff can be captured and recharged. The most common approach is to divert storm flows into spreading basins where the captured water can percolate into the underlying groundwater basin. Spreading basins can have

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ELEMENTS OF GROUNDWATER MANAGEMENT PLAN

multiple uses including flood peak attenuation, water treatment, recharge of imported water and reclaimed water, wildlife habitat enhancement and recreational use.

Several factors must be considered for the development of a spreading basin. They include:

- Water rights
- Availability of recharge water
- Surface flow and flood hazard impacts
- Percolation rates
- Subsurface permeability and the presence of barriers or aquitards that hinder percolation
- Depth to groundwater
- Underlying groundwater quality
- Recharge water quality
- Proximity to major areas of groundwater production
- Creation of undesirable conditions such as high groundwater levels or vector problems
- Economic feasibility

Runoff generated on individual lots can be retained and recharged on individual lots. This would require special grading and drainage specifications on individual lots and is only practical for new development. The same considerations for spreading basins apply to artificial recharge through local retention and recharge.

Most of the precipitation for frequently occurring precipitation events that falls on undeveloped land is lost to evapotranspiration. Groundwater recharge occurred only during periods of heavy rainfall prior to the development of the land. About 60 to 80 percent of the land becomes impervious as land is developed for urban uses. The remaining land is irrigated and has relatively high soil moisture. Consequently, precipitation that falls on developed land is either:

- converted to runoff; or
- recharges the groundwater basin through presaturated soils.

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ELEMENTS OF GROUNDWATER MANAGEMENT PLAN

New runoff due to developed land can be collected and recharged, a process referred to as water harvesting. EMWD has conducted studies of water harvesting in the San Jacinto and Hemet subbasins, but has not yet conducted such studies in the West San Jacinto Groundwater Management Area. EMWD is currently evaluating these studies and proceeding to implement water harvesting in these subbasins. EMWD has stated a goal of reaching 10,000 acre-ft/yr of additional yield in its service area using water harvesting.

Artificial recharge of runoff can occur anywhere in the management area where suitable recharge facilities can be sited. The DWR published a draft report in 1975, *TIR 1335-11-A-3 Preliminary Evaluation of Potential Artificial Recharge sites and Sink Sites in the San Jacinto Study Area* (California Department of Water Resources, 1975) that concluded that conditions conducive to artificial recharge through spreading basins exist in the Lakeview, Perris North and Perris South subbasins. In the Lakeview subbasin, there is a one mile-wide band of tight surface sediments along the San Jacinto River. The rest of the subbasin appears to have good recharge characteristics. Water quality in this subbasin is generally good and the unused storage capacity is about 230,000 acre-ft (see Table 5-3). Recharge in the Perris North subbasin could occur along a small creek that drains the Pigeon Pass Valley, in spreading basins located at the base of the hills on the south side of the subbasin and near major drainage features such as the Perris Valley drain. There may be other areas suitable for spreading basins. Water quality in the Perris North subbasin is good. The unused storage capacity in the Perris North subbasin is about 220,000 acre-ft.

Groundwater quality in the Perris South subbasins ranges from acceptable to poor. The soils and geology appear to favor recharge in spreading basins. However, due to existing groundwater quality conditions, it may not be possible to recover additional potable groundwater without groundwater treatment. The unused storage capacity in the Perris South subbasins is about 120,000 acre-ft. The San Jacinto Lower Pressure, Menifee I, Menifee II and Winchester subbasins have soil and geologic conditions that appear non-suitable for surface spreading.

**Imported Water.** Recharge of imported water can occur through surface spreading, direct injection and by in-lieu recharge. Surface spreading is done by conveying imported water to spreading basins for percolation. Untreated water can be used for surface spreading. Untreated off-peak water can be purchased at substantially lower rates if spreading is done between October 1 to April 30.

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ELEMENTS OF GROUNDWATER MANAGEMENT PLAN

Conventional injection of imported water is accomplished by conveying treated water to wells and injecting the water into the saturated part of the groundwater basin. Imported water is discharged into the well below the standing water level in the well. The pressure in the well forces the water into the aquifer. Water used for injection into the saturated zone must be treated to drinking water standards prior to injection. Treatment consists of filtration and disinfection and can be obtained by either purchasing treated water from Metropolitan or by purchasing untreated water from Metropolitan and using other treatment facilities. Treated off-peak water can be purchased at substantially lower rates if injection is done between October 1 to April 30.

In-lieu recharge occurs when imported water is used in lieu of groundwater, allowing groundwater to accumulate in the groundwater basin. The basic premise is that imported water would be used when there is an abundance of imported water, allowing groundwater to accumulate. Groundwater production in excess of the normal extraction rates could occur when imported water is scarce due to drought or shortages in the imported water system.

The areas that are suitable for artificial recharge of imported water in spreading basins are identical to the areas described in *artificial recharge of runoff* above. Artificial recharge of imported water by injection can occur almost anywhere in the management area where groundwater production is practical. Considerations in siting injection facilities include favorable hydrogeologic conditions, proximity to source water facilities, proximity of recovery wells, and unused groundwater storage capacity. Unlike spreading basins that create a veneer of imported water on top of ambient groundwater, injection wells create a zone of imported water around the injection well. The injected water within this zone drifts slowly away from the injection well with the regional groundwater flow. The water quality in wells that tap into the injected water zone will have a water quality that is similar to the imported water.

**Reclaimed water.** Recharge of reclaimed water can occur through surface spreading, direct injection and by over irrigation. Recharge by percolation and injection is subject to regulatory approval. The DHS proposed regulations for planned recharge projects that recharge reclaimed water were described in Section 3 and are contained in Appendix A.

Reclaimed water can be used to augment potable supplies through groundwater recharge. The volume of natural recharge is small in the West San Jacinto Groundwater Basin management area. The dilution of reclaimed water that can be obtained in the groundwater basin could be

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small and insufficient to achieve the dilution requirements in the proposed guidelines. Therefore, reclaimed water may have to be blended with other non-reclaimed water prior to recharge. The most probable source of blending water will be imported water purchased from Metropolitan.

The groundwater basins can also be used for seasonal storage of reclaimed water. Reclaimed water can be stored in the groundwater basins during the winter when demand for reclaimed water is low and recovered in the spring, summer and fall when reclaimed water demands exceed supply.

The subbasins in the management area that are conducive to recharge of reclaimed water, either by spreading or injection, include the Perris North, Lakeview and Perris South subbasins. Reclaimed water can be recharged in the San Jacinto Lower Pressure, Menifee and Winchester subbasins by injection.

**Increase in Yield.** The increase in yield from artificial recharge is approximately equal to the long term average annual volume of artificial recharge. That is, if the annual volume of artificial recharge is 30,000 acre-ft, then the increase in groundwater yield would be about 30,000 acre-ft. The Lakeview, Perris North and Perris South subbasins are the most promising subbasins for artificial recharge that can increase potable supplies to the West San Jacinto Groundwater Basin management area. These basins have a combined unused storage capacity of about 600,000 acre-ft, good water quality and reasonably good aquifer properties. The natural replenishment in these subbasins is small, averaging about 29,000 acre-ft/yr (Table 4-1). Hydrogeologic conditions and economics control the size of artificial recharge projects in these subbasins. Based on current information, it seems reasonable to expect that the combined increase in groundwater yield from artificial recharge could range from 30,000 to 50,000 acre-ft/yr.

**Information Needs.** New information and engineering studies are required to develop definitive estimates of the size and benefits of potential artificial recharge projects. The types of new information and studies that are required include:

- geophysical studies to determine aquifer boundaries and geometry
- hydrogeologic studies to determine aquifer hydraulic properties
- geochemical studies to establish ambient groundwater quality, trends, and compatibility of ambient groundwater with recharge water



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- facility studies to site and evaluate engineering and facility requirements
- economic studies
- environmental studies

Part of these investigations should include demonstration or pilot projects. Demonstration-level artificial recharge projects should be done to test the technical and institutional feasibility of artificial recharge. Demonstration projects should include the following:

- Surface spreading in The Perris North, Perris South and Lakeview subbasins. Small recharge basins, observation wells and pipelines would be constructed and operated to develop data and design criteria for full scale projects. The source water would be imported water from Metropolitan and reclaimed water from EMWD.
- Groundwater Injection in The Perris North, Perris South and Lakeview subbasins. Injection of imported water could be done in the winter time using EMWD's existing wells in these subbasins. Small observation wells may need to be constructed.
- Water Harvesting in the Lakeview subbasin. Storm water captured in EMWD's Mystic Lake project could be captured and conveyed to test recharge basins in the Lakeview subbasin.

### **Recovery of Contaminated Groundwater**

Some of the groundwater in the West San Jacinto Groundwater Management area is contaminated and cannot be put to beneficial use without treatment. Currently, production of contaminated groundwater is avoided. Contaminated groundwater takes up storage in the aquifer and reduces the useful storage capacity in the groundwater basins. Contaminated groundwater can be put to beneficial use through treatment. The types of treatment that are appropriate depend on the nature of contamination and the intended water use. The types of treatment that appear appropriate in the West San Jacinto Management area are blending, demineralization and nitrate removal through ion exchange. Other treatment technologies may be required if water quality conditions change or new types of contamination are discovered.

**Blending.** Blending is a very simple form of treatment and consists of mixing a poor quality supply with a suitable amount of high quality water such that the blend is of adequate quality for its intended use. Table 7-1 lists the groundwater subbasins, the reclamation plants that receive water from these subbasins, reclamation plant TDS regulatory limitations, estimated average

**TABLE 7-1  
BLENDING WATER REQUIREMENTS TO MEET TITLE 22 DRINKING WATER REGULATIONS  
AND WASTE DISCHARGE REQUIREMENTS AT RECLAMATION PLANTS**

Subbasin	Supply Tributary to EMWD Reclamation Plant (1)	Reclamation Plant TDS Objective (mg/L)	Estimated Average TDS in Subbasin (2) (mg/L)	Required Water Supply TDS (mg/L)	Blending Ratio of SWP Water to Groundwater for SWP Water TDS (in mg/L) of	
					250	300
Perris North	Morreno Valley	550	450	300	3.0	Infeasible
Lakeview	Perris Valley	825	500	575	No Blending Required	No Blending Required
Perris South-I	Perris Valley	825	700	575	0.4	0.5
Perris South-II	Perris Valley	825	1,100	575	1.6	1.9
Perris South-III	Sun City	950	1,100	700	0.9	1.0
Menifee-I	Sun City	950	3,000	700	5.1	5.8
Menifee-II	Sun City	950	2,200	700	3.3	3.8
Winchester	(3)	na	2,000	na	na	na
San Jacinto	Perris Valley	825	1,000	575	1.3	1.5
Lower Pressure						

note - (1) based on Figure 3-1 Existing Wastewater Service Areas, Wastewater Facilities Master Plan,

(Black & Veatch, James M. Montgomery, 1990); revised by EMWD 1993.

(2) Subbasin averages based on available data, and in most cases, old data. Average for Perris South-II excludes Ski Land area.

(3) Winchester subbasin is currently unsewered. In the future, the Winchester subbasin area will either be sewerred to a new reclamation plant in Winchester area or sewerred to an existing reclamation plant.

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TDS concentration for each subbasin, the water supply TDS requirement and the blending ratios for SWP water to groundwater. Based on existing groundwater quality information, blending SWP water with groundwater from the San Jacinto Lower Pressure, Perris North, Perris South-I, parts of Perris South-II, and parts of Perris South-III, could provide potable water that is also within the waste discharge requirements of EMWD reclamation plants. Generally, blending ratios around one are considered economically feasible and blending ratios of two could be feasible. Lakeview groundwater will not need to be blended. Perris North groundwater will need three parts of SWP water if it is to be used in the area tributary to the Moreno Valley reclamation plant. Groundwater from Perris South-I, Perris South-II, Perris South-III, and the San Jacinto Lower Pressure subbasins can easily be blended with SWP water. Menifee-I, Menifee-II and Winchester cannot be economically blended.

**Demineralization.** Demineralization is a treatment process that reduces the mineral content of groundwater to a specified level that is established for the use of the product water. Demineralization facilities, often called desalters, have been constructed in the Arlington subbasin, near Riverside, and are in design for the Chino Basin and the Menifee area.

The proposed Menifee desalter will convert 4,200 acre-ft/yr of groundwater pumped from the Menifee I and II subbasins with a TDS concentration of 2,400 mg/L to 3,360 acre-ft of potable water, with a TDS concentration of 400 mg/L (Black & Veatch, 1993). Product water from the Menifee desalter will be served in EMWD service area.

Demineralization could be used to recover the yield of the San Jacinto Lower Pressure, Perris South-I, Perris South-II, Perris South-III, and Winchester subbasins. These basins are excessively mineralized, partly from irrigated agriculture and partly from natural sources. The proposed Menifee desalter will recover the yield of the Menifee-I and Menifee-II subbasins. EMWD is considering treating groundwater from the Perris South II, Perris South III and Winchester subbasins at the Menifee desalter site in a future expansion of that facility.

**Other Treatment Technologies.** Other treatment technologies can be used to recover groundwater when other contaminants render groundwater unusable. Selective ion exchange can be used to remove specific ions such as nitrate or uranium. Granulated activated carbon (GAC), air stripping and advanced oxidation can be used individually, or in combination, to remove organic compounds. The need for these treatment technologies is unknown at this time due to the lack of water quality data.

**Increase In Supply.** Currently, contaminated groundwater is either avoided, or is used for non-potable demands such as agricultural or landscape irrigation. These non potable demands, whenever possible, could be supplied with reclaimed water, allowing the contaminated groundwater to be treated and supplied for municipal use. The volume of contaminated groundwater that can be recovered and used through blending will cause an equal reduction in the demand for imported water. The volume of contaminated groundwater that can be recovered through demineralization varies between 70 and 85 percent of the water produced for demineralization; the remaining water is a brine which must be exported. The volume of potable water produced by the demineralization will cause an equal reduction in the demand for imported water. The increase in supply from the recovery of contaminated groundwater is equal to the safe yield of the subbasins where the recovery projects will occur, minus the existing level of groundwater pumping in those subbasins. Table 7-2 summarizes considerations for blending and demineralization of elements and presents an estimate of the groundwater production that could be used for blending or demineralization. The volume of groundwater available for blending or demineralization is estimated as the safe yield of the subbasin, minus reported groundwater production. The safe yield used in this estimate includes the recharge of EMWD reclaimed water. The estimates of groundwater available for blending and demineralization shown in Table 7-2 are slightly higher than would be implemented because actual groundwater production by local producers is higher than reported production. Estimates of actual groundwater production will need to be developed prior to implementing blending or demineralization elements.

**Cost.** The cost of blending consists of the capital and operations and maintenance costs associated with wells, pipelines and reservoirs required to implement blending. The costs of these types of facilities are highly sensitive to location of wells, blending water sources and the design flow rates (e.g., base load or peaking). The development of these costs is beyond the scope of this investigation. Most of the facilities that will be required for blending will be required even if blending were not used. Thus, the incremental cost associated with blending facilities will be small, relative to the cost of future water distribution facilities. The volume of groundwater used with blending would offset the need for an equal amount of imported water. The SWP water used for blending is not a new imported water demand. The blending water would come from SWP water that would have been used if there were no blending with groundwater. Therefore, blending will cause a net decrease in imported water demands.

The cost of demineralization varies depending on source water quality, product water quality, well field(s), distribution system and the treatment technology. The Menifee desalter is a three

**TABLE 7-2  
CONSIDERATIONS FOR BLENDING AND DEMINERALIZATION ELEMENTS**

Conjunctive Use Characteristics	Subbasin					
	Lakeview	Meniffee	Perris North	Perris South (1)	San Jacinto Lower Pressure	Winchester
Groundwater Quality (2)	Good	Poor	Good	Poor	Poor	Poor
Range in Capacity of Producing Wells (gpm)	100-2,000	10-1,000	90-1,000	90-1,000	Unknown	100-850
Safe Yield						
Natural Safe Yield	6,800	3,300	13,700	8,300	2,500	1,600
Natural Safe Yield plus Reclaimed Water Recharge (acre-ft/yr)	6,800	4,700	19,500	12,800	2,500	1,800
Average Reported Groundwater Production 1987 to 1991 (2) (acre-ft/yr)	4,000	0	2,300	1,400	500	0
Potential Groundwater Production That could Be Used for Blending and Demineralization (acre-ft/yr)	Not Applicable	4,700	Not Applicable	12,100	700	1,800

note - (1) part of Perris South-I and -II have good quality water

(2) Production values shown in Table 4-3 and excludes small producers (<25 acre-ft/yr).

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mgd treatment plant with a capital cost estimated to range from \$14,000,000 to \$17,000,000. Table 7-3 lists the capital and operations and maintenance cost opinions for the Menifee desalter (Black & Veatch, 1993). The 1995 cost to produce water from the Menifee desalter is about \$501 per acre-ft, which is slightly higher than comparable water imported from Metropolitan. By 2001, the unit cost of water from the Menifee desalter will be equal to water from Metropolitan.

Metropolitan has instituted a Groundwater Recovery (GWR) program that will subsidize the cost of these desalters up to \$250 per acre-ft. In the GWR program, Metropolitan will purchase the product water from the desalter for up to \$250 over Metropolitan's base treated rate and sell the water back to EMWD at the base treated rate. Metropolitan instituted this program to encourage the recovery of contaminated groundwater. Table 7-3 shows how the GWR program will work for the Menifee desalter.

**Information Needs.** New information and engineering studies are required to develop definitive estimates of the size and benefits of projects to recover contaminated groundwater. The types of new information and studies that are required include:

- geophysical studies to determine aquifer boundaries and geometry
- hydrogeologic studies to determine aquifer hydraulic properties
- geochemical studies to establish ambient groundwater quality, and trends
- facility studies to site and evaluate engineering and facility requirements
- economic studies
- environmental studies

Part of these investigations should include demonstration or pilot projects. Demonstration-level projects for the recovery of contaminated water should be done to test the technical and institutional feasibility of full scale projects. Demonstration projects should include the following:

- Pilot scale demineralization projects in Winchester, Perris South and San Jacinto Lower Pressure subbasins. These tests would provide design data for large scale projects.
- Well scale blending projects. Poor quality groundwater from out-of-service EMWD wells could be injected into EMWD's distribution system. This could be done with EMWD's Falico well in the Perris South subbasin

**TABLE 7-3  
MENIFEE DESALTER COSTS AND METROPOLITAN'S  
GROUNDWATER RECOVER PROGRAM**

Year	----- Meniffee Desalter Cost -----				Metropolitan Treated Base Rate	Metropolitan GWR Subsidy	Purchase Price to Metropolitan	Remaining Unsubsidized Cost	Unit Cost to EMWD
	Amortized Capital cost (\$)	Annual O & M Cost (\$)	Total Annual Cost (1) (\$)	Unit Cost (2) (\$/acre-ft)					
1995	\$919,652	\$1,748,734	\$2,668,386	\$794	\$454	\$250	\$704	\$90	\$544
1996	\$919,652	\$1,801,196	\$2,720,848	\$810	\$483	\$250	\$733	\$77	\$560
1997	\$919,652	\$1,855,232	\$2,774,884	\$826	\$515	\$250	\$765	\$61	\$576
1998	\$919,652	\$1,910,889	\$2,830,541	\$842	\$545	\$250	\$795	\$47	\$592
1999	\$919,652	\$1,968,216	\$2,887,868	\$859	\$578	\$250	\$828	\$31	\$609
2000	\$919,652	\$2,027,262	\$2,946,914	\$877	\$613	\$250	\$863	\$14	\$627
2001	\$919,652	\$2,088,080	\$3,007,732	\$895	\$649	\$246	\$895	\$0	\$649
2002	\$919,652	\$2,150,722	\$3,070,374	\$914	\$688	\$226	\$914	\$0	\$688
2003	\$919,652	\$2,215,244	\$3,134,896	\$933	\$730	\$203	\$933	\$0	\$730
2004	\$919,652	\$2,281,701	\$3,201,353	\$953	\$773	\$180	\$953	\$0	\$773
2005	\$919,652	\$2,350,152	\$3,269,804	\$973	\$820	\$153	\$973	\$0	\$820
2006	\$919,652	\$2,420,657	\$3,340,309	\$994	\$869	\$125	\$994	\$0	\$869
2007	\$919,652	\$2,493,277	\$3,412,929	\$1,016	\$921	\$95	\$1,016	\$0	\$921
2008	\$919,652	\$2,568,075	\$3,487,727	\$1,038	\$976	\$62	\$1,038	\$0	\$976
2009	\$919,652	\$2,645,117	\$3,564,769	\$1,061	\$1,035	\$26	\$1,061	\$0	\$1,035
2010	\$919,652	\$2,724,471	\$3,644,123	\$1,085	\$1,097	\$0	\$1,085	\$0	\$1,097

note (1) annual O & M cost escalate at three percent per year

(2) desalter produces 3,360 acre-ft/yr

and other wells in Winchester and the Lower San Jacinto subbasins, as appropriate.

## CONJUNCTIVE USE

Conjunctive use is an operational strategy that combines the operations of multiple sources of water and storage resources in such a way that the combined yield is greater than the yield that would occur from the sum of independent, uncoordinated operations of the sources. The same definition would apply if other goals could be achieved by coordinated operation and the yield remained at an acceptable level. Other goals might include reduced cost, more reliable supply, and the attainment of environmental objectives. In most cases, conjunctive use results in increased yield and lower cost. Conjunctive use is commonly associated with storing of imported water in groundwater basins for use during periods of shortage. The more general definition could involve EMWD reclamation and municipal distribution facilities, Metropolitan facilities and resources, state project facilities and resources, groundwater basins within EMWD, and, potentially, groundwater basins outside of EMWD. Conjunctive use can operate seasonally, over-year or both. Seasonal conjunctive use would bank water during seasonal period(s) of over-supply or abundance for use during dry times of the year. Over-year conjunctive use would bank water during years of over-supply or abundance for use during drought periods and imported water shortages.

Table 7-4 summarizes the considerations for conjunctive use projects by subbasin. Based on current knowledge of groundwater conditions, EMWD could bank local runoff, imported water purchased from Metropolitan and reclaimed water in the Lakeview, Perris North and Perris South subbasins during the period of October 1 through April 30, for use either during the summer, during periods of imported water shortages, or both. The unused storage capacity of the Lakeview, Perris North and Perris South subbasins is about 600,000 acre-ft. EMWD could use up to half (and possibly more) of this unused storage capacity for seasonal and over-year storage, thereby reducing the cost of imported water purchases and providing an additional source of water during periods of imported supply shortage.

Recharge would be accomplished with a combination of new spreading basins and injection wells. Recovery of recharge will be through existing and new production wells. Where practical, injection and production will occur at the same well. That is, injection will take place



**TABLE 7-4  
CONSIDERATIONS FOR CONJUNCTIVE USE PROJECTS**

Conjunctive Use Characteristics	Subbasin					
	Lakeview	Menifee	Perris North	Perris South(1)	San Jacinto Lower Pressure	Winchester
Unused Groundwater Storage Capacity (acre-ft)	230,000	40,000	220,000	150,000	9,000	5,000
Groundwater Quality (2)	Good	Poor	Good	Poor	Poor	Poor
Range in Capacity of Producing Wells (gpm)	100-2,000	10-1,000	90-1,000	90-1,000	Unknown	100-850
Recharge Methods	Spreading Basins In-Lieu Injection	Injection In-Lieu	Spreading Basins In-Lieu Injection	Spreading Basins In-Lieu Injection	Injection In-Lieu	Injection In-Lieu
Spreading Basin Potential	Yes	No	Yes	Yes	No	No
Proximity to Imported Water Facilities	State Project Water Colorado River Water		State Project Water	State Project Water Colorado River Water		State Project Water Colorado River Water
Proximity to Reclaimed Water Facilities	Yes	Yes	Yes	Yes	Yes	Yes
Proximity to Major Drainage Facilities	San Jacinto River	Salt Creek	Perris Valley Drain	San Jacinto River Salt Creek	San Jacinto River	Salt Creek

note - (1) part of Perris South-I and -II have good quality water

(2) good quality water has a TDS less than 500 mg/L; poor quality water has TDS greater than 500 mg/L and generally greater than 1,000 mg/L

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during the recharge period of October 1 through April 30, followed by groundwater production at the same well during the period of May 1 to September 30. This type of aquifer storage and recovery scheme is ideal for areas where spreading is infeasible due to land use, low recharge rates or groundwater quality limitations.

Reclaimed water could be a source of recharge in a conjunctive use program for augmentation of potable supplies. Parts of groundwater subbasins could be used for the seasonal storage of reclaimed water.

Based on current knowledge of groundwater conditions, conjunctive use with imported supplies and local runoff in the San Jacinto Lower Pressure, Menifee and Winchester subbasins appears to be more difficult to implement and of less benefit. Limited conjunctive use in these subbasins could be done in conjunction with groundwater treatment.

**Increase in Supply.** The increase in supply from conjunctive use could not be determined at this level of study. Under a worst case scenario, conjunctive use would reduce shortages that EMWD customers would face during imported water shortages and would reduce the cost of imported water use through the purchase of off-peak supplies and use of reclaimed water for recharge. EMWD should be able to shift about 30,000 to 50,000 acre-ft year of base rate purchases to off-peak, with large conjunctive use projects in the Lakeview, Perris North and Perris South subbasins. The reduction in cost would be much more substantial if a blend of reclaimed water and imported water were recharged during the winter.

**Information Needs.** New information and engineering studies are required to develop definitive estimates of the size and benefits of potential artificial recharge projects. The types of new information and studies that are required include:

- geophysical studies to determine aquifer boundaries and geometry
- hydrogeologic studies to determine aquifer hydraulic properties
- geochemical studies to establish ambient groundwater quality, trends, and compatibility of ambient groundwater with imported water
- facility studies to site and evaluate engineering and facility requirements
- economic studies
- environmental studies

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Demonstration projects should be developed to test injection of treated imported water in the Lakeview, Perris North and Perris South subbasins. These demonstration projects would test the feasibility of well injection for groundwater recharge and aquifer storage and recovery for conjunctive use. Demonstration level injection well tests should be done for blends of treated imported water and reclaimed water.

**EXCHANGE OF AGRICULTURAL AND OTHER NON-POTABLE WATER USERS FROM GROUNDWATER TO RECLAIMED WATER**

The exchange of agricultural and other non-potable groundwater production to municipal uses can occur through:

- retirement of agricultural lands, that is, the conversion of agricultural lands to non-agricultural uses; and
- by substituting other supplies such as reclaimed water.

Agricultural demands are projected to range from 33,000 acre-ft/yr in 1995 to 31,000 acre-ft/yr in 2010. The average agricultural demand during this period is approximately equal to the total yield of the West San Jacinto Basin. The substitution of reclaimed water for agriculture groundwater production and other non-potable uses is a prerequisite to developing municipal supplies from the West San Jacinto Groundwater Basin. There are some agricultural demands that cannot be satisfied with reclaimed water, such as dairy cow washing and processing of produce for market.

**Increase in Supply.** The increase in municipal supply that will occur from the exchange of agricultural and other non-potable groundwater production to municipal production is approximately one acre-ft for each acre-ft of exchange. Agricultural groundwater production is projected to range from about 24,100 acre-ft/yr in 1995, to 22,100 acre-ft/yr in 2010. A reasonable goal would be to exchange between 10,000 to 20,000 acre-ft of agricultural and other non-potable groundwater production to municipal production.

Demonstration-level projects for the exchange of agricultural and other non-potable users from groundwater to reclaimed water should be done to test the technical and institutional feasibility of full scale projects. Long term use of reclaimed water for irrigation may impact the drainage characteristics of the soil. Demonstration projects should be done to investigate the impacts from irrigation with reclaimed water on soils and evaluate appropriate soil and irrigation management practices. EMWD is currently in the process of completing exchange agreements similar to that

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described above with Moreno Valley Ranch Golf Course and University of California, Riverside, in the Perris North subbasin and Mr. John D. Mott in Lakeview Subbasin.

**Cost.** The cost associated with supplying reclaimed water to agricultural users is the capital, operations and maintenance cost associated with the conveyance of reclaimed water to the agricultural and other non-potable water users. This cost is a sunk cost as EMWD must treat and dispose of reclaimed water whether any water exchange occurs or doesn't occur. The water supply cost associated with the exchange of agricultural groundwater production to municipal production with the retirement of agricultural lands is assumed to be zero.

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**SECTION 8**

## SECTION 8 GROUNDWATER MANAGEMENT PLAN

### CONTENTS OF THE MANAGEMENT PLAN

The management plan described herein is a program to achieve the management plan goals and includes conceptual descriptions of elements of the plan, and a description of the process to define and implement these elements consistent with the management plan goal. This plan, when adopted, will be the groundwater management program for the West San Jacinto Groundwater Basin management area. The groundwater management program will include: the development and implementation of policies, engineering investigations, facilities construction and operation, and other management activities. There are significant deficiencies in the knowledge of the groundwater resources of the West San Jacinto Groundwater Basin management area. These deficiencies preclude the definitive descriptions for some of the physical and institutional elements of the groundwater management plan. The groundwater management program includes studies to develop additional information that is necessary to develop all the institutional and physical elements described in the plan.

### MANAGEMENT PLAN CRITERIA

The goal of the management plan stated in Section 6 is:

***maximize the use of groundwater for potable demands in such a way as to lower the cost of water supply and to improve the reliability of the total water supply for all water users in the West San Jacinto Groundwater Basin management area***

This goal extends to all groundwater users. Groundwater users that are not dependent on EMWD should benefit from the groundwater management plan. Adverse impacts, if any, from the

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groundwater plan will be minimized or mitigated. The rights of private groundwater producers will be protected. Groundwater producers who extract 10 acre-ft/yr or less shall be exempt from the operation and implementation of the groundwater management plan.

The implementation of this goal and its attendant constraints requires a set of criteria from which to test the various elements of the Management Plan. These criteria include:

- meet future water demands
- minimize dependence on imported water
- adequate (safe) water supply quality
- minimum cost
- ease of implementation

The groundwater management plan must be an integral part of satisfying the water demands in the West San Jacinto Groundwater Basin management area. Each element of the plan must, on its own, either add to the water supply or, by complementary action, cause the yield of another element to increase.

Minimizing the dependence on imported water is driven by the need for reliability and cost. The management area will, for the foreseeable future, be heavily dependent on imported water. Imported water is expensive and prone to shortage. Groundwater, properly managed, can be used to minimize peak seasonal demand on imported supplies and can provide carry-over storage for use when shortages occur in the imported supply.

The yield developed by the management program should, when delivered to water users, be of suitable quality. For municipal users this will be potable quality. For private groundwater producers, groundwater quality should be improved or the same as if the groundwater management plan did not exist.

The cost of municipal water supplies should be less with the management plan. The water supply cost for private water users should be less or unchanged. The yield of the management plan is part of the mix of water sources available in the management area. The groundwater management elements incorporated in the groundwater management plan will be such as to minimize the cost of the total water supply and will not be based on the individual element cost.

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The groundwater management plan should be implementable. The benefits, cost and institutional complexity should be such that it will be feasible to implement the groundwater management plan.

**ULTIMATE PLAN DESCRIPTION**

The groundwater management plan consists of a series of elements that, when implemented, will achieve the management plan goal stated above within the constraints. The management plan includes implementation of new policies, institutional arrangements, and physical projects. EMWD will be the agency responsible for implementation of the groundwater management plan. Based on the information developed in this study and presented in the previous sections, the ultimate groundwater management plan should include the following elements.

**Establishment of a Groundwater Basin Manager**

EMWD will implement the groundwater management plan. EMWD Board of Directors will be the decision-making body responsible for directing the implementation of the groundwater management plan. EMWD staff will serve as the staff to assist the EMWD Board of Directors in implementing the plan.

Upon adoption of the groundwater management plan, EMWD Board of Directors will appoint an Advisory Committee. The Advisory Committee will be composed of seven members, with one member each from city of Moreno Valley, city of Perris, Nuevo Mutual Water Company, Edgemont Gardens Mutual Water Company, and EMWD; and two members representing agricultural producers. The Advisory Committee shall study, review and provide comments on all groundwater management plan activities directly to the EMWD Board of Directors.

EMWD staff will prepare an annual engineering report describing the operation of the management plan for review by the EMWD Board of Directors, Advisory Committee and groundwater producers. EMWD, in consultation with the Advisory Committee and participating groundwater producers, will develop a coordinated operating strategy on an annual basis, based on the management plan and the findings of the annual report.



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**Monitoring of Groundwater Production**

EMWD, in cooperation with the Advisory Committee, will implement a groundwater production monitoring program. Detailed estimates of the safe yield will be developed in the first year of the groundwater production monitoring. Groundwater production estimates will be developed by EMWD based on totalizing meters, energy usage and land use. EMWD will produce a groundwater production report and estimates of overdraft (if any). These data will be included in the annual report provided to the Advisory Committee. The production monitoring program will not limit or suspend groundwater production by existing groundwater producers.

**Monitoring of Groundwater Level and Quality**

EMWD, in cooperation with the Advisory Committee, will implement a groundwater level and quality monitoring program. Groundwater level and quality data will be collected from well owners. EMWD will measure groundwater levels and quality from select private wells. Groundwater levels and quality data from agencies' wells will be provided to EMWD by the agencies. EMWD will compile these data and develop estimates of the groundwater in storage, change in storage, overdraft and groundwater quality conditions. These data will be included in the annual report provided to the management committee.

**Development of Well Construction Policies**

EMWD, in cooperation with the Advisory Committee, the Department of Health Services and the Riverside County Health Department, will develop well construction policies that are specific to the West San Jacinto Groundwater Basin management area. These policies will be updated continuously based on new regulatory requirements and data. These policies will not limit or suspend groundwater production by existing groundwater producers.

**Development of a Well Abandonment and Destruction Program**

EMWD, in cooperation with the Advisory Committee, the Department of Health Services and the Riverside County Health Department, should develop well abandonment and destruction policies that are specific to the West San Jacinto Groundwater Basin management area. These policies should be updated continuously based upon new regulatory requirements and data.

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**Monitoring of Well Construction, Abandonment and Destruction**

EMWD has compiled and digitized most, if not all the well construction information that is available for existing wells. EMWD, in cooperation with other groundwater producers, will collect well construction data for new wells. EMWD will provide comments and suggestions to supplement design criteria that will be required by other agencies, including the Department of Health Services and the Riverside County Health Department. EMWD, through the monitoring of groundwater production, will determine wells that are inactive and make recommendations to well owners regarding the fate of these wells.

**Groundwater Quality Protection**

EMWD, in cooperation with the Advisory Committee and parties responsible for groundwater quality degradation, should develop cooperative plans to prevent further degradation of groundwater and to integrate the solution of existing water quality problems to maximize the beneficial use of groundwater. The known areas of concern are the high TDS groundwater in the Perris South II (Ski Land area) and Winchester subbasins, and the groundwater contamination associated with March Air Force Base. The existing efforts undertaken by EMWD to rehabilitate the Menifee subbasins (the Menifee desalter project) will be completed independent of the groundwater management plan. Additional degraded groundwater areas could be discovered through groundwater monitoring.

**Exchange of Agricultural and Other Non-potable Groundwater Production to Municipal Use**

The intent of this element is to increase the groundwater yield available for municipal use by either retiring agricultural and non potable demands or by substituting reclaimed water for groundwater used for agricultural and other non-potable uses. It is the goal of this element to maximize the exchange of groundwater production from non-potable uses to municipal uses. Incentives should be developed to encourage the exchange of agricultural groundwater production to municipal use. From an agricultural perspective, the cost of using reclaimed water should be equal to, or less than, the cost of groundwater.

EMWD should consider providing reliable reclaimed water service to individual farms and other non-potable users by constructing pipelines from EMWD reclamation facilities to logical points

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in the farm irrigation systems. The farmer would pay for the reclaimed water at a rate that would make the farmer indifferent to either groundwater or reclaimed water; or at a rate slightly less than his groundwater production cost. The rate should be based on the actual cost of groundwater production and the usefulness of the farmer's well to EMWD. The farmer would pay for reclaimed water based on the operation and maintenance cost of his well. The farmer would produce only enough groundwater for potable uses on the farm, and future potable demands, when the land is developed, would be served by EMWD.

If the agricultural well were suitable for municipal use, then the farmer's well and necessary easements could be purchased by EMWD. The purchase price would be reflected in the cost of reclaimed water. In this case, the farmer would pay for reclaimed water based on the operation and maintenance cost of his well, less the amortized purchase price of the farmer's well. In either case, the reclaimed water rate may have to be discounted slightly to cause the exchange to occur.

Use of reclaimed water on some soils may reduce the drainage rate of soil and lead to water logged and other undesirable soil conditions. Each site where reclaimed water could be applied in lieu of groundwater needs to be evaluated to ensure that the reclaimed water can safely be applied to the soil. This evaluation will be completed prior to formalizing agreements to exchange groundwater for reclaimed water.

**Maximize Yield Augmentation with Local Resources - Local Runoff and Reclaimed Water**

Yield augmentation through the recharge of runoff (water harvesting) and through the recharge of reclaimed water should be implemented where consistent with water quality objectives and other elements of the groundwater management plan. The Lakeview, Perris North and Perris South subbasins appear to be the most feasible areas for this element. The cost associated with the recharge of runoff and reclaimed water are the capital and operation costs for the facilities to capture and recharge runoff and reclaimed water.

The specifics of recharge and conveyance facilities will be developed after a thorough groundwater resources evaluation is performed and planning studies are done to develop and evaluate yield augmentation alternatives.

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**Maximize Conjunctive Use**

Conjunctive use should be implemented in the West San Jacinto Groundwater Basin management area. The unused storage capacity in the West San Jacinto Groundwater Basin management area is about 670,000 acre-ft, with about 600,000 acre-ft or 90 percent in the Lakeview, Perris North and Perris South subbasins. The yield from conjunctive use, exclusive of safe yield, could range from 30,000 to 50,000 acre-ft, or perhaps larger. Conjunctive use will improve overall water supply reliability, groundwater quality, and will lower water supply cost. These benefits will be realized by all groundwater users.

The specifics of recharge, extraction, conveyance and treatment facilities will be developed after a thorough groundwater resources evaluation is performed and planning studies are done to develop and evaluate conjunctive use alternatives.

**Groundwater Treatment**

Groundwater treatment in the form of blending and demineralization should be done in the West San Jacinto Groundwater Basin management area to recover contaminated groundwater for municipal use. The specifics of treatment facilities will be developed after a thorough groundwater resources evaluation is performed and planning studies are done to evaluate groundwater treatment feasibility.

**Groundwater Management Plan Alternatives**

Four groundwater management alternatives were developed to evaluate the economic benefits to all water users in the groundwater management area. All four of these alternatives include the following management elements:

- Establishment of Groundwater Basin Manager
- Monitoring of Groundwater Production
- Monitoring of Groundwater Level and Quality
- Development of Well Construction Policies
- Development of a Well Abandonment and Destruction Program
- Monitoring of Well Construction, Abandonment and Destruction
- Groundwater Quality Protection

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**Alternative 1 - Agricultural Exchange and Blending.** Alternative 1 consists of the above-mentioned common elements plus the exchange of agricultural groundwater production, of which 2,000 acre-ft/yr are permanent transfers from land use conversions and about 17,500 acre-ft/yr of exchange of groundwater production for reclaimed water. Seven thousand one hundred acre-ft/yr of poor quality groundwater will be pumped from the San Jacinto Lower Pressure and Perris South subbasins and blended with imported water for municipal use.

**Alternative 2 - Agricultural Exchange, Blending and Demineralization.** Alternative 2 consists of the above-mentioned common elements plus the exchange of agricultural groundwater production, of which 2,000 acre-ft/yr are permanent transfers from land use conversions and about 21,700 acre-ft/yr of exchange of groundwater production for reclaimed water. Seven thousand one hundred acre-ft/yr of poor quality groundwater will be pumped from the San Jacinto Lower Pressure and Perris South subbasins and blended with imported water for municipal use. Five thousand three hundred acre-ft/yr of highly mineralized groundwater from the Perris South and Winchester subbasins will be pumped and demineralized to produce about 4,200 acre-ft of drinking water.

**Alternative 3 - Agricultural Exchange, Blending, Demineralization and 30,000 acre-ft/yr Conjunctive Use.** Alternative 3 includes all the elements of Alternative 2, plus conjunctive use. Conjunctive use will be implemented in the Perris North, Perris South I, Perris South II and Lakeview subbasins. Recharge would occur in spreading basins. Source water is state project water and reclaimed water. Average annual increase in recharge and extraction from conjunctive use will be about 30,000 acre-ft/yr.

**Alternative 4 - Agricultural Exchange, Blending, Demineralization and 50,000 acre-ft/yr Conjunctive Use..** Alternative 4 is identical to Alternative 3 except that the conjunctive use element has been expanded to 50,000 acre-ft/yr.

### **Economic Evaluation of the Groundwater Management Plan Alternatives**

Tables 8-1 through 8-4 illustrate the economic benefits that water users in the West San Jacinto Groundwater Basin management area would realize if a groundwater management plan were implemented. Each table lists the projected total demand for water and shows how that demand would be satisfied with each groundwater management plan alternative. For economic

**TABLE 8-1  
PRELIMINARY ESTIMATE OF COST OF WATER SUPPLY PLAN FOR THE WEST SAN JACINTO GROUNDWATER BASIN MANAGEMENT AREA  
ALTERNATIVE 1 - AGRICULTURAL EXCHANGE AND BLENDING**

Year	Imposed Water										Reclaimed Water				Agricultural Groundwater				Municipal Use of Groundwater				Total Groundwater Usage (ac-ft/yr)	Total Cost (\$)	Composite Unit Cost (\$/ac-ft)
	Treated Base Water			Total			Total Rad. Water Use			Total Rad. Water Use			Denitrification		Direct Municipal Use		Blending		Total Mun. Use of Groundwater (ac-ft/yr)						
	Demand (ac-ft/yr)	Direct Use (ac-ft/yr)	Blending (ac-ft/yr)	Rate (\$/ac-ft)	Imposed Volume (ac-ft)	Imposed Cost (\$)	Direct Use (ac-ft/yr)	Rate (\$/ac-ft)	Total Rad. Water Use (ac-ft/yr)	Cost (\$)	Volume (ac-ft/yr)	Rate (\$/ac-ft)	Cost (\$)	Volume (ac-ft/yr)	Rate (\$/ac-ft)	Volume (ac-ft/yr)	Rate (\$/ac-ft)	Volume (ac-ft/yr)		Rate (\$/ac-ft)	Cost (\$)				
1995	80,000	44,500	0	\$454	44,500	\$20,201,000	8,900	\$63	8,900	\$560,700	24,100	\$63	\$1,518,300	0	\$0	2,500	\$68	0	\$68	\$170,000	2,500	24,600	\$22,452,000	\$281	
1996	83,000	47,300	0	\$483	47,300	\$22,845,900	10,849	\$66	10,849	\$710,826	22,351	\$66	\$1,464,438	0	\$0	2,500	\$71	0	\$71	\$176,800	2,500	24,851	\$25,197,964	\$304	
1997	86,000	46,740	0	\$515	46,740	\$24,071,100	12,798	\$68	12,798	\$872,066	20,602	\$68	\$1,403,837	3,360	\$376	2,500	\$74	0	\$74	\$2,119,232	3,860	24,462	\$28,466,235	\$331	
1998	89,000	49,340	0	\$545	49,340	\$26,999,300	14,747	\$71	14,747	\$1,043,047	18,853	\$71	\$1,334,045	3,360	\$392	2,500	\$76	0	\$76	\$2,180,347	5,860	24,713	\$31,560,759	\$355	
1999	92,000	33,604	5,500	\$578	39,104	\$22,607,112	16,696	\$74	16,696	\$1,230,513	17,104	\$74	\$1,260,583	3,360	\$609	8,636	\$80	7,100	\$80	\$3,298,045	19,096	34,200	\$28,391,254	\$309	
2000	95,000	34,655	5,500	\$613	40,155	\$24,815,015	18,645	\$77	18,645	\$1,429,123	15,335	\$77	\$1,176,947	3,360	\$627	10,315	\$83	7,100	\$83	\$3,553,294	20,845	34,200	\$30,774,381	\$324	
2001	99,000	36,706	5,500	\$649	42,206	\$27,391,694	20,594	\$80	20,594	\$1,641,653	13,606	\$80	\$1,084,604	3,360	\$649	12,154	\$86	7,100	\$86	\$3,835,566	22,594	34,200	\$33,953,516	\$343	
2002	103,000	38,757	5,500	\$688	44,257	\$30,448,816	22,543	\$83	22,543	\$1,868,898	11,837	\$83	\$982,989	3,360	\$688	13,883	\$89	7,100	\$89	\$4,189,309	24,343	34,200	\$37,490,013	\$364	
2003	107,000	40,808	5,500	\$730	46,308	\$33,804,840	24,492	\$86	24,492	\$2,111,697	10,108	\$86	\$871,510	3,360	\$730	15,632	\$93	7,100	\$93	\$4,568,301	26,092	34,200	\$41,356,348	\$387	
2004	111,000	42,859	5,500	\$773	48,359	\$37,381,507	26,441	\$90	26,441	\$2,370,929	8,359	\$90	\$749,540	3,360	\$773	17,381	\$97	7,100	\$97	\$4,966,679	27,841	34,200	\$45,468,654	\$410	
2005	115,000	44,910	5,500	\$820	50,410	\$41,336,200	28,390	\$93	28,390	\$2,647,521	6,610	\$93	\$616,418	3,360	\$820	19,130	\$101	7,100	\$101	\$5,395,422	29,590	34,200	\$49,993,362	\$435	
2006	120,600	50,310	5,500	\$869	55,810	\$48,498,890	28,590	\$97	28,590	\$2,772,818	6,610	\$97	\$641,075	3,360	\$869	19,130	\$105	7,100	\$105	\$5,645,472	29,590	34,200	\$53,578,455	\$477	
2007	126,200	55,710	5,500	\$921	61,210	\$56,374,410	28,790	\$101	28,790	\$2,903,904	6,610	\$101	\$666,718	3,360	\$921	19,130	\$109	7,100	\$109	\$5,890,223	29,590	34,200	\$57,578,455	\$522	
2008	131,800	61,110	5,500	\$976	66,610	\$65,011,360	28,990	\$105	28,990	\$3,041,040	6,610	\$105	\$693,387	3,360	\$976	19,130	\$113	7,100	\$113	\$6,249,232	29,590	34,200	\$61,993,039	\$569	
2009	137,400	66,310	5,500	\$1,035	72,010	\$74,530,350	29,190	\$109	29,190	\$3,184,301	6,610	\$109	\$721,122	3,360	\$1,035	19,130	\$118	7,100	\$118	\$6,566,287	29,590	34,200	\$67,002,260	\$619	
2010	143,000	71,910	5,500	\$1,097	77,410	\$84,918,770	29,390	\$113	29,390	\$3,334,373	6,610	\$113	\$749,947	3,360	\$1,085	19,130	\$122	7,100	\$122	\$6,837,835	29,590	34,200	\$73,438,842	\$670	
Total Volume	1,719,000	765,929	66,000		831,929		350,045			201,935			47,040			202,831		85,200		335,071	537,026				
Fraction of Total		45%	4%				20%			12%			3%			12%		5%							
Total Cost						\$641,033,264				\$31,723,830			\$15,937,480							\$65,742,369			\$754,438,842		
Fraction of Total						85%				4%			2%							9%					
Present Value																							\$449,025,159		

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**TABLE 8-2  
PRELIMINARY ESTIMATE OF COST OF WATER SUPPLY PLAN FOR THE WEST SAN JACINTO GROUNDWATER BASIN MANAGEMENT AREA  
ALTERNATIVE 2 - AGRICULTURAL EXCHANGE, BLENDING AND DEMINERALIZATION**

Year	Imported Water																							Total Groundwater Usage (mm-Byr)	Total Cost (1)	Composite Unit Cost (\$/mm-B)
	Demand (mm-Byr)	Treated Base Water				Total Imported Volume (mm-Byr)	Reclaimed Water				Agricultural Groundwater				Municipal Use of Groundwater				Total Mun. Use of Groundwater (mm-Byr)							
		Direct Use (mm-Byr)	Blending		Rate (\$/mm-B)		Direct Use (mm-Byr)	Rate (\$/mm-B)	Total Recl. Water Use (mm-Byr)	Cost (1)	Volume (mm-Byr)	Rate (\$/mm-B)	Cost (1)	Demineralization		Direct Municipal Use		Blending		Municipal Cost						
			(mm-Byr)	(mm-Byr)										(\$/mm-B)	Volume (mm-Byr)	Rate (\$/mm-B)	Volume (mm-Byr)				Rate (\$/mm-B)					
1995	80,000	44,500	0	\$454	44,500	\$20,203,000	8,900	\$63	8,900	\$560,700	24,100	\$63	\$1,318,300	0	\$0	2,300	\$68	0	\$68	\$170,000	2,500	26,600	\$23,452,000	\$281		
1996	83,000	47,300	0	\$483	47,300	\$22,843,900	11,269	\$66	11,269	\$738,345	21,931	\$66	\$1,436,919	0	\$0	2,300	\$71	0	\$71	\$176,800	2,500	24,431	\$25,197,964	\$304		
1997	86,000	46,740	0	\$513	46,740	\$24,071,100	13,638	\$68	13,638	\$979,304	19,742	\$68	\$1,346,598	3,360	\$376	2,300	\$74	0	\$74	\$2,119,232	5,860	23,622	\$28,446,235	\$331		
1998	89,000	49,540	0	\$543	49,540	\$26,999,300	16,007	\$71	16,007	\$1,134,339	17,593	\$71	\$1,246,753	3,360	\$392	2,300	\$76	0	\$76	\$2,180,347	5,860	23,453	\$31,560,759	\$335		
1999	92,000	51,974	5,500	\$578	57,474	\$21,631,072	18,376	\$74	18,376	\$1,354,331	15,424	\$74	\$1,136,766	7,540	\$609	4,136	\$80	7,100	\$80	\$3,644,789	20,776	36,200	\$29,766,938	\$334		
2000	95,000	52,355	5,500	\$613	57,855	\$23,327,715	20,745	\$77	20,745	\$1,590,086	13,255	\$77	\$1,015,984	7,540	\$617	8,305	\$83	7,100	\$83	\$4,002,073	22,945	36,200	\$31,935,858	\$336		
2001	99,000	54,186	5,500	\$649	59,686	\$25,756,214	23,114	\$80	23,114	\$1,842,535	11,066	\$80	\$883,722	7,540	\$649	10,474	\$86	7,100	\$86	\$4,405,557	25,114	36,200	\$34,888,027	\$352		
2002	103,000	55,817	5,500	\$688	61,317	\$28,426,096	25,483	\$83	25,483	\$2,112,635	8,917	\$83	\$779,252	7,540	\$688	12,643	\$89	7,100	\$89	\$4,934,190	27,283	36,200	\$38,232,173	\$371		
2003	107,000	57,448	5,500	\$730	62,948	\$31,352,040	27,852	\$86	27,852	\$2,401,395	6,748	\$86	\$581,812	7,540	\$730	14,812	\$93	7,100	\$93	\$5,543,390	29,452	36,200	\$41,878,437	\$391		
2004	111,000	59,079	5,500	\$773	64,579	\$34,459,547	30,221	\$90	30,221	\$2,709,876	4,579	\$90	\$410,593	7,540	\$773	16,981	\$97	7,100	\$97	\$6,159,104	31,621	36,200	\$45,739,140	\$412		
2005	115,000	60,710	5,500	\$820	66,210	\$37,891,200	32,590	\$93	32,590	\$3,039,193	2,410	\$93	\$224,745	7,540	\$820	19,190	\$101	7,100	\$101	\$6,825,036	33,790	36,200	\$49,981,173	\$435		
2006	120,600	64,110	5,500	\$869	69,610	\$44,849,090	34,959	\$97	34,959	\$3,481,158	2,410	\$97	\$233,735	7,540	\$869	19,190	\$105	7,100	\$105	\$9,300,185	33,790	36,200	\$57,543,169	\$477		
2007	126,200	67,510	5,500	\$921	73,010	\$52,506,210	37,390	\$101	37,390	\$3,977,537	2,410	\$101	\$243,085	7,540	\$921	19,190	\$109	7,100	\$109	\$9,802,183	33,790	36,200	\$65,879,015	\$522		
2008	131,800	70,910	5,500	\$976	76,410	\$60,912,160	39,790	\$105	39,790	\$4,481,619	2,410	\$105	\$252,808	7,540	\$976	19,190	\$113	7,100	\$113	\$10,331,196	33,790	36,200	\$74,977,783	\$569		
2009	137,400	74,310	5,500	\$1,035	79,810	\$70,183,350	42,190	\$109	42,190	\$5,042,703	2,410	\$109	\$262,920	7,540	\$1,035	19,190	\$118	7,100	\$118	\$10,894,942	33,790	36,200	\$84,983,916	\$619		
2010	143,000	77,710	5,500	\$1,097	83,210	\$80,311,370	44,590	\$113	44,590	\$5,611,103	2,410	\$113	\$273,437	7,540	\$1,083	19,190	\$122	7,100	\$122	\$11,395,584	33,790	36,200	\$95,791,494	\$670		
Total Volume	1,719,000	724,349	66,000		790,349		394,143			157,833			9%		97,300		194,251		83,200		376,651	534,506				
Fraction of Total		42%	4%		46%		23%								6%		11%		5%							
Total Cost					\$605,726,384					\$35,855,879			\$11,807,430							\$105,904,608			\$739,294,301			
Fraction of Total					80%					3%			2%							14%						
Present Value																								\$452,533,506		

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TABLE 8-3 (revised 9/7/94)  
 PRELIMINARY ESTIMATE OF COST OF WATER SUPPLY PLAN FOR THE WEST SAN JACINTO GROUNDWATER BASIN MANAGEMENT AREA  
 ALTERNATIVE J - AGRICULTURAL EXCHANGE, BLENDING, DEMINERALIZATION AND  
 30,000 ACRE-FT CONJUNCTIVE USE (ALL RECHARGE THROUGH SPREADING)

Year	Demand		Imported Water				Reclaimed Water				Agricultural Ground-water				Municipal Use of Ground-water				Total Ground-water Usage (acre-ft)	Total Cost (\$)	Component Use Cost (\$/acre-ft)								
	Direct Use (acre-ft)	Blending (acre-ft)	Treated Basic Water		Untr. Seasonal Water		Direct Use (acre-ft)	Rate (\$/acre-ft)	Conj. Use (acre-ft)	Rate (\$/acre-ft)	Total Recl. Water Use (acre-ft)	Cost (\$/acre-ft)	Volume (acre-ft)	Rate (\$/acre-ft)	Cost (\$/acre-ft)	Demineralization Volume (acre-ft)	Rate (\$/acre-ft)	Direct + Conj. Use				Blending Volume (acre-ft)	Rate (\$/acre-ft)	Cost (\$/acre-ft)					
			Rate (\$/acre-ft)	Conj. Use (acre-ft)	Volume (acre-ft)	Rate (\$/acre-ft)												Volume (acre-ft)							Rate (\$/acre-ft)	Volume (acre-ft)	Rate (\$/acre-ft)		
1993	80,000	44,500	0	\$454	0	\$256	44,500	\$20,203,000	8,900	\$63	0	\$0	8,900	\$560,700	24,100	\$63	\$1,518,900	0	\$0	1,500	\$68	0	\$68	\$170,000	2,500	26,600	\$22,452,000	\$281	
1996	83,000	47,500	0	\$483	0	\$278	47,500	\$22,942,500	11,069	\$66	0	\$0	11,069	\$725,241	21,931	\$66	\$1,436,919	0	\$0	2,500	\$71	0	\$71	\$176,800	2,500	24,431	\$25,281,460	\$305	
1997	86,000	47,140	0	\$515	0	\$304	47,140	\$24,227,100	13,238	\$68	0	\$0	13,238	\$902,048	19,762	\$68	\$1,346,598	3,360	\$76	2,500	\$74	0	\$74	\$2,119,232	5,860	25,622	\$28,644,978	\$333	
1998	89,000	50,140	0	\$345	0	\$319	50,140	\$27,326,500	15,407	\$71	0	\$0	15,407	\$1,091,839	17,593	\$71	\$1,246,733	3,360	\$91	2,500	\$76	0	\$76	\$2,190,347	5,860	23,453	\$31,976,239	\$358	
1999	92,000	2,724	5,500	\$578	20,000	\$338	28,224	\$11,513,472	17,376	\$74	10,000	\$0	27,376	\$1,295,370	15,424	\$74	\$1,136,766	7,540	\$699	36,136	\$80	7,100	\$80	\$4,021,300	50,776	66,200	\$21,976,908	\$329	
2000	95,000	3,253	5,500	\$613	20,000	\$361	29,053	\$12,774,715	19,745	\$77	10,000	\$0	29,745	\$1,513,437	13,253	\$77	\$1,015,984	7,540	\$627	38,305	\$83	7,100	\$83	\$8,484,045	52,945	66,200	\$23,748,181	\$350	
2001	99,000	5,386	5,500	\$649	20,000	\$389	30,886	\$14,849,014	21,914	\$80	10,000	\$0	31,914	\$1,746,877	11,086	\$80	\$883,722	7,540	\$649	40,474	\$86	7,100	\$86	\$8,986,808	55,114	66,200	\$26,466,420	\$367	
2002	103,000	7,217	5,500	\$688	20,000	\$417	32,717	\$17,093,296	24,083	\$83	10,000	\$0	34,083	\$1,996,570	8,917	\$83	\$739,252	7,540	\$688	42,643	\$89	7,100	\$89	\$9,638,691	57,283	66,200	\$29,467,809	\$386	
2003	107,000	9,048	5,500	\$730	20,000	\$447	34,548	\$19,537,320	26,252	\$86	10,000	\$0	36,252	\$2,263,444	6,748	\$86	\$581,812	7,540	\$730	44,812	\$93	7,100	\$93	\$10,333,271	59,452	66,200	\$32,737,846	\$306	
2004	111,000	10,879	5,500	\$773	20,000	\$477	36,379	\$22,204,378	28,421	\$90	10,000	\$0	38,421	\$2,548,473	4,579	\$90	\$410,593	7,540	\$773	46,981	\$97	7,100	\$97	\$11,062,661	61,621	66,200	\$36,226,104	\$326	
2005	115,000	12,710	5,500	\$820	20,000	\$511	38,210	\$25,142,468	30,590	\$93	10,000	\$0	40,590	\$2,852,682	2,410	\$93	\$224,745	7,540	\$820	49,150	\$101	7,100	\$101	\$11,844,734	63,790	66,200	\$40,064,630	\$348	
2006	120,600	18,110	5,500	\$869	20,000	\$545	43,610	\$31,422,808	30,790	\$97	10,000	\$0	40,790	\$2,986,187	2,410	\$97	\$233,735	7,540	\$869	49,150	\$105	7,100	\$105	\$12,440,672	63,790	66,200	\$47,083,402	\$390	
2007	126,200	23,510	5,500	\$921	20,000	\$582	49,010	\$38,363,837	30,990	\$101	10,000	\$0	40,990	\$3,125,807	2,410	\$101	\$243,085	7,540	\$921	49,150	\$109	7,100	\$109	\$13,068,288	63,790	66,200	\$54,801,017	\$434	
2008	131,800	28,910	5,500	\$976	20,000	\$621	54,410	\$46,014,012	31,190	\$105	10,000	\$0	41,190	\$3,271,819	2,410	\$105	\$252,808	7,540	\$976	49,150	\$113	7,100	\$113	\$13,727,946	63,790	66,200	\$63,266,586	\$480	
2009	137,400	34,310	5,500	\$1,033	20,000	\$664	59,810	\$54,472,596	31,390	\$109	10,000	\$0	41,390	\$3,424,511	2,410	\$109	\$262,920	7,540	\$1,033	49,150	\$118	7,100	\$118	\$14,427,562	63,790	66,200	\$72,592,590	\$528	
2010	143,000	39,710	5,500	\$1,097	20,000	\$708	63,210	\$63,758,026	31,590	\$113	10,000	\$0	41,590	\$3,584,184	2,410	\$113	\$273,437	7,540	\$1,085	49,150	\$122	7,100	\$122	\$15,069,509	63,790	66,200	\$82,685,156	\$578	
Total Volume	1,719,000	385,349	66,000		240,000		691,349		373,145				157,855				97,200		554,251		85,200			736,651	894,506				
Fraction of Total		22%	4%		14%		40%		22%				9%				6%		32%		5%								
Total Cost							\$451,919,843						\$33,889,189				\$11,807,430								\$141,763,865		\$639,380,327		
Fraction of Total							71%						5%				2%												
Percent Value																													

\$384,636,284



TABLE 8-4 (revised 9/7/94)  
 PRELIMINARY ESTIMATE OF COST OF WATER SUPPLY PLAN FOR THE WEST SAN JACINTO GROUNDWATER BASIN MANAGEMENT AREA  
 ALTERNATIVE 4 - AGRICULTURAL EXCHANGE, BLENDING, DEMINERALIZATION AND  
 50,000 ACRE-FT CONJUNCTIVE USE (80% RECHARGE THROUGH SPREADING, 20% RECHARGE THROUGH INJECTION)

Year	Demand (ac-ft/yr)	Impaired Water										Reclaimed Water										Total Groundwater Use (ac-ft/yr)	Total Cost (\$)	Composite Unit Cost (\$/ac-ft)						
		Treated Base Water		Use Seasonal Water		Treated Seasonal Water		Total Volume (ac-ft)	Imported Cost (\$/ac-ft)	Direct Use (ac-ft/yr)	Rate (\$/ac-ft)	Conj. Use (ac-ft/yr)	Rate (\$/ac-ft)	Total Recl. Water Use (ac-ft/yr)	Cost (\$/ac-ft)	Agricultural Groundwater		Demineralization		Direct + Conj. Use					Municipal Use of Groundwater		Total Use of Groundwater (ac-ft/yr)	Total Cost (\$/ac-ft)	Composite Unit Cost (\$/ac-ft)	
		Volume	Cost	Volume	Cost	Volume	Cost									Volume	Cost	Volume	Cost	Volume	Cost				Volume	Cost				Volume
1995	80,000	44,500	0	\$434	0	\$234	5309	44,500	\$20,203,000	8,900	\$43	0	\$0	8,900	\$340,700	24,100	\$43	\$1,218,300	0	\$0	2,500	\$48	0	\$68	\$170,000	2,500	\$4,400	\$22,152,000	\$281	
1996	83,000	47,500	0	\$463	0	\$276	5332	47,500	\$22,942,500	11,009	\$66	0	\$0	11,009	\$723,241	21,911	\$64	\$1,416,919	0	\$0	2,500	\$71	0	\$71	\$176,800	2,500	\$4,411	\$23,261,460	\$303	
1997	86,000	47,140	0	\$513	0	\$304	5357	47,140	\$24,277,100	13,238	\$64	0	\$0	13,238	\$901,048	19,742	\$64	\$1,348,358	3,360	\$376	2,500	\$74	0	\$74	\$2,119,232	5,860	\$2,622	\$28,644,978	\$333	
1998	89,000	30,140	0	\$343	0	\$319	5381	30,140	\$27,326,300	13,407	\$71	0	\$0	13,407	\$1,091,839	17,293	\$71	\$1,244,753	3,360	\$399	2,500	\$74	0	\$74	\$2,180,347	5,860	\$2,453	\$31,643,239	\$358	
1999	92,000	0	5,500	\$378	21,343	\$338	1,342	3408	28,224	\$16,854,700	17,574	\$74	10,000	\$0	27,374	\$1,293,370	15,424	\$74	\$1,126,766	7,540	\$427	38,860	\$90	7,100	\$80	\$4,247,996	33,300	\$4,924	\$21,834,911	\$233
2000	95,000	0	5,500	\$413	21,777	\$361	1,778	3436	29,835	\$12,012,205	19,743	\$77	10,000	\$0	29,743	\$1,313,437	13,255	\$77	\$1,013,984	7,540	\$427	41,660	\$83	7,100	\$83	\$4,774,158	34,360	\$4,755	\$23,319,784	\$245
2001	99,000	0	5,500	\$449	22,693	\$389	2,493	3465	30,886	\$13,652,783	21,914	\$80	10,000	\$0	31,914	\$1,746,877	11,066	\$80	\$883,722	7,540	\$449	45,860	\$84	7,100	\$84	\$9,450,228	40,500	\$7,384	\$25,733,610	\$260
2002	103,000	0	5,500	\$488	23,809	\$417	3,609	3496	32,717	\$15,422,341	24,083	\$83	10,000	\$0	34,083	\$1,996,370	9,817	\$83	\$739,251	7,540	\$488	49,860	\$89	7,100	\$89	\$10,284,492	44,500	\$7,417	\$28,442,875	\$276
2003	107,000	0	5,500	\$530	24,324	\$447	4,324	3529	34,348	\$17,368,898	26,252	\$86	10,000	\$0	36,252	\$2,263,444	6,748	\$86	\$581,812	7,540	\$530	53,860	\$93	7,100	\$93	\$11,177,302	48,300	\$7,244	\$31,391,455	\$293
2004	111,000	0	5,500	\$573	25,439	\$477	5,440	3564	36,379	\$19,457,314	28,421	\$90	10,000	\$0	38,421	\$2,548,473	4,379	\$90	\$610,393	7,540	\$573	57,860	\$97	7,100	\$97	\$12,115,587	52,500	\$7,079	\$34,231,966	\$311
2005	115,000	0	5,500	\$620	26,355	\$511	6,355	3601	38,210	\$21,764,477	30,390	\$93	10,000	\$0	40,390	\$2,852,641	2,410	\$93	\$224,793	7,540	\$620	61,860	\$101	7,100	\$101	\$13,124,060	56,300	\$7,910	\$37,967,965	\$330
2006	120,000	0	5,500	\$669	29,855	\$545	8,855	3641	41,610	\$24,423,415	30,390	\$97	10,000	\$0	40,390	\$3,096,187	2,410	\$97	\$233,733	7,540	\$669	67,260	\$105	7,100	\$105	\$14,334,479	61,900	\$4,310	\$41,979,616	\$345
2007	124,200	3,310	5,500	\$921	30,000	\$582	10,000	3682	49,010	\$32,388,451	30,390	\$101	10,000	\$0	40,990	\$3,123,807	2,410	\$101	\$243,063	7,540	\$921	69,130	\$109	7,100	\$109	\$15,245,692	63,790	\$4,300	\$45,203,233	\$360
2008	131,800	8,910	5,500	\$976	30,000	\$621	10,000	3724	54,410	\$39,970,938	31,190	\$105	10,000	\$0	41,190	\$3,271,819	2,410	\$105	\$232,806	7,540	\$976	69,130	\$113	7,100	\$113	\$15,992,444	63,790	\$4,200	\$49,448,012	\$451
2009	137,400	14,310	5,500	\$1,033	30,000	\$664	10,000	3773	59,810	\$48,148,719	31,390	\$109	10,000	\$0	41,390	\$3,424,311	2,410	\$109	\$242,970	7,540	\$1,033	69,130	\$118	7,100	\$118	\$16,782,641	63,790	\$4,200	\$58,418,794	\$499
2010	143,000	19,710	5,500	\$1,097	30,000	\$708	10,000	3823	65,210	\$57,129,234	31,590	\$113	10,000	\$0	41,590	\$3,584,184	2,410	\$113	\$273,437	7,540	\$1,063	69,130	\$122	7,100	\$122	\$17,518,792	63,790	\$4,200	\$78,305,787	\$549
Total Volume	1,719,000	233,720	64,000		314,814		74,818		691,349		373,143				157,853			157,853		97,200		703,880		83,200		886,380	1,044,133			
Fracture of Total		14%	4%		18%		4%		40%		22%				9%			9%		6%		41%		5%		86%	104%			
Total Cost									\$409,664,993						\$33,849,189			\$33,849,189		\$11,700,273		\$157,700,273				\$413,064,847				
Fracture of Total									87%						6%			6%		3%		41%				86%	104%			
Present Value																											\$371,114,039			

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evaluation purposes, all the plan elements are assumed on line in 1999, that is, all elements would be implemented in five years. Actual implementation could take place over a longer period of time ranging from five to fifteen years. This analysis assumes an amortization period of 20 years, amortization rate of six percent and an inflation rate of four percent. Capital, operations and maintenance costs for recharge facilities, and blending facilities are not included. Salvage costs are not included for the wells and desalters.

Tables 8-1 through 8-4 list the annual cost of water supply and the total present value cost of the water supply plan with the implementation of a groundwater management plan. Similar costs are presented in Table 5-6 for a case without a groundwater management plan. The groundwater management plan alternatives are compared to the *no groundwater management plan case* in Table 8-5. The difference in costs between the *with management plan cases* and *without management plan case* occurs in years 1999 through 2010.

*Alternative 1 - Agricultural Exchange and Blending* groundwater management plan case has a present value savings of about \$108,000,000 over the no groundwater management plan case illustrated in Table 5-6. The saving comes from the exchange of up to 17,500 acre-ft/yr of agricultural groundwater production to municipal uses and the reduction in the use of a like amount of imported water.

*Alternative 2 - Agricultural Exchange, Blending and Demineralization* groundwater management plan is identical to Alternative 1 except that the agricultural exchange of groundwater production to municipal uses has been expanded to about 21,700 acre-ft/yr and municipal groundwater production has been expanded by about 4,200 acre-ft/yr through construction of a demineralization facility. Alternative 2 has a present value savings of about \$104,000,000 over the *no groundwater management plan case* illustrated in Table 5-6 and is comparable to the cost of Alternative 1. The cost savings over the *no groundwater management plan case* come from the exchange of up to 21,600 acre-ft/yr of agricultural groundwater production to municipal uses and the reduction in the use of a like amount of imported water. The cost of Alternative 2 is slightly higher than Alternative 1 because the demineralization costs are higher than the cost of imported water prior to 2010. After 2010 demineralization costs will be less than imported water. Alternative 2 would have costs savings greater than Alternative 1 if the economic analysis were extended beyond 2010.

**TABLE 8-5 (revised 9/7/94)**  
**COMPARISON OF GROUNDWATER MANAGEMENT PLAN ALTERNATIVES**

Alternative	----- Percentage of Total Supply -----			----- Size of Groundwater Management Plan Elements -----				Present Value Cost of Supply	Reduction in Present Value Cost of Supply from Groundwater Management Plan
	Non Interruptible Treated Imported Water	Seasonal Treated Imported Water	Untreated Imported Water	Agricultural Exchange  (acre-ft/yr)	Blending  (acre-ft/yr)	Demineralization  (acre-ft/yr)	Conjunctive Use  (acre-ft/yr)		
No Groundwater Management Plan	64%	0%	0%	0	0	0	0	\$557,000,000	na
1 Agricultural Exchange and Blending	49%	0%	0%	17,510	7,100	0	0	\$449,000,000	\$108,000,000
2 Agricultural Exchange, Blending and Demineralization	46%	0%	0%	21,690	7,100	4,180	0	\$453,000,000	\$104,000,000
3 Agricultural Exchange, Blending, Demineralization and 30,000 acre-ft/yr Conjunctive Use (all recharge through spreading)	26%	0%	14%	21,690	7,100	4,180	30,000	\$385,000,000	\$172,000,000
4 Agricultural Exchange, Blending, Demineralization and 50,000 acre-ft/yr Conjunctive Use (80 recharge through spreading, 20 % through injection)	18%	4%	18%	21,690	7,100	4,180	50,000	\$371,000,000	\$186,000,000

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*Alternative 3 - Agricultural Exchange, Blending, Demineralization and 30,000 acre-ft/yr Conjunctive Use* management plan has all the elements contained in Alternative 2 plus the incorporation of 30,000 acre-ft/yr of conjunctive use. The source water for conjunctive use is 20,000 acre-ft of state project water and 10,000 acre-ft/yr of reclaimed water. The demand for treated non-interruptible water from Metropolitan has dropped from 64 percent for the *no management plan case* to 26 percent. The demand for untreated seasonal water has risen to 14 percent. Treated non-interruptible and seasonal untreated imported water make up 40 percent of municipal supplies. Alternative 3 has a present value savings of about \$172,000,000 over the *no groundwater management plan case* illustrated in Table 5-6 and about \$66,000,000 over Alternatives 1 and 2. About 62 percent of the cost savings comes from the agricultural exchange, blending and demineralization elements included in Alternatives 1 and 2; the remaining cost savings are due to conjunctive use.

*Alternative 4 - Agricultural Exchange, Blending, Demineralization and 50,000 acre-ft/yr Conjunctive Use* management plan has all the elements contained in Alternative 3 except that conjunctive use has been expanded from 30,000 to 50,000 acre-ft. The source water for conjunctive use is 40,000 acre-ft of state project water and 10,000 acre-ft/yr of reclaimed water. The demand for treated non-interruptible water from Metropolitan has dropped from 64 percent for the *no management plan case* to 18 percent. Untreated seasonal water has risen to 18 percent and treated seasonal water to 4 percent. Treated non-interruptible, treated seasonal and seasonal untreated imported water make up 40 percent of municipal supplies. Treated seasonal water would be used for recharge by injection. Alternative 4 has a present value savings of about \$186,000,000 over the *no groundwater management plan case* illustrated in Table 5-6 and about \$80,000,000 over Alternatives 1 and 2. About 57 percent of the cost savings comes from the agricultural exchange, blending and demineralization elements included in Alternatives 1 and 2; the remaining cost savings are due conjunctive use.

The groundwater management plan development costs and the costs of recharge of basins and blending facilities are not included in Tables 8-1 through 8-4. These costs could have a present value ranging from \$50,000,000 to \$70,000,000. The cost savings from implementation of any of these alternatives far exceed the cost of implementation. The projected cost savings from the groundwater management plan illustrated in Tables 8-1 through 8-4 are for the 15-year period of 1999 to 2010 in which the capital-intensive facilities, such as spreading basins, have been in operation (and amortized) for 11 years. If these analyses were extended to the period of time

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over which capital-intensive facilities were to be financed, say 20 years, the cost saving would be significantly greater.

There are two additional significant benefits from a groundwater management plan. First, imported water for direct use has been reduced by half, which will improve overall water supply reliability. The volumetric impact of water shortages in the imported water supply could be reduced by half. Second, the recharge of state project water into the Lakeview, Perris North and Perris South subbasins will improve the quality of the groundwater in these subbasins.

The groundwater management alternatives illustrated in Tables 8-1 through 8-4 clearly show that the economic benefits, water supply reliability benefits and water quality benefits of a groundwater management plan are very significant. Tables 8-1 through 8-4 assume that the conjunctive use elements are operational in 1999. As mentioned above, it could take an additional five years (till 2004) to implement the large scale conjunctive use projects described in these examples. Other management elements, yield augmentation in particular, should also be included in the management plan. Cooperative efforts among the water users in the management area, and results of future engineering and economic studies will define which elements will ultimately be used in the management plan.

### FINANCING THE GROUNDWATER MANAGEMENT PLAN

The primary beneficiaries of the plan are municipal water users in the West San Jacinto Groundwater Basin management area. Private groundwater producers such as farmers, dairy operators and individuals with small domestic wells will either be beneficially impacted or have no impacts. It is the intent of the plan to mitigate all significant adverse groundwater impacts to private groundwater producers. The types of beneficial impacts that private well owners could experience will be stabilized or increased groundwater levels where overdraft is currently occurring, such as the Lakeview subbasin, and reduced supply cost for those groundwater producers that can use reclaimed water in lieu of groundwater.

The cost of implementing and operating the West San Jacinto Groundwater Basin management plan should be born by municipal water users in the management area. The cost savings experienced by the local private groundwater users should be their incentive to participate in the groundwater management plan. There could be some cost to local groundwater producers if

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groundwater replenishment is necessary due to groundwater overdraft. In the event of continued overdraft, an equitable cost sharing plan should be developed to correct the overdraft.

EMWD, acting as manager of the West San Jacinto Basin Groundwater Basin, will not levy and/or collect any rate, fee or charge from any groundwater producer unless authorized by law or contract with the producer, or in the event a producer extracts water stored in a basin by entities participating in the management plan. The plan will not require financial participation by any producer unless there is a consideration provided to such producer in the form of a quantifiable benefit to the producer.

The benefits and costs associated with the groundwater management plan should be accounted for locally, that is, by subbasin or some other geographic unit, to insure the benefits and costs are equitably distributed. The benefits to municipal users in the management area are essentially uniform throughout the management area and thus, the costs associated with those benefits should be distributed uniformly to all municipal water users in the management area. Localized benefits or costs to the Nuevo Water Company and the Edgemont Gardens Mutual Water Company should be estimated when the projects implemented by the groundwater management plan are better defined. EMWD and these agencies may need to develop adjustments in the cost of water supplied to these agencies by EMWD to compensate for localized benefits and costs to these agencies that are caused by the management plan.

Some of the elements of the management plan are capital intensive such as recharge facilities, wells, treatment plants, pipelines, etc. EMWD will need to develop a plan to finance these elements of the groundwater management plan with cost recovery based on the sale of water developed by the plan, or some other method as appropriate. The economic analysis presented previously in this section show that the management plan should easily pay for itself.

**IMPLEMENTATION OF THE GROUNDWATER MANAGEMENT PLAN**

Upon adoption of the groundwater management plan, EMWD will form the Advisory Committee and implement the groundwater management plan. The implementation of the groundwater management plan will occur in phases and consist of the following:

Phase I            Short Term Implementation

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- Phase 2        Refine the Ultimate Groundwater Management Plan
- Phase 3        Ultimate Groundwater Management Plan Implementation

**Phase 1 Short Term Implementation**

The goals of the short term implementation phase are to: implement those elements of the groundwater management plan that are easy to implement, where existing information is adequate for implementation; and to develop and implement demonstration projects that will provide engineering information necessary for design of management elements in the ultimate plan. This phase consists of five tasks that are described below.

**Task 1-1 Groundwater Resources Evaluation.** Section 4 described what is currently known about the groundwater resources in the management area, based on available reports and data. Most of the water quality data and groundwater elevation data is fifteen to twenty years old. There are no definitive studies evaluating the feasibility of surface water recharge. A complete groundwater resource evaluation should be done to define the groundwater resources in the management area. This effort will include the following sub tasks.

Define the Hydrogeologic Characteristics of the basin including: geology; flow controlling features such as faults, barriers, aquicludes, effective base of the aquifer, and hydraulic conductivity. This will involve: review of existing well logs, new aquifer tests, drilling new test holes, and geophysical studies.

Describe Groundwater Quality Conditions Historical groundwater quality data will be mapped and reviewed. EMWD has recently collected and entered these data into a data base, which will greatly facilitate this effort. A completely new groundwater quality monitoring program will be conducted evaluating the groundwater quality for constituents described in Title 22, plus other constituents that could be regulated and constituents that can be used to understand the groundwater hydrology, such as isotopes of oxygen and hydrogen.

Describe the Occurrence of Groundwater including: groundwater levels, groundwater hydrology, volume of groundwater in storage, unused groundwater storage, and groundwater production and use. This will involve an extensive

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groundwater level survey, and review/estimation of historical and future groundwater production.

**Task 1-2 Develop Groundwater Management Policies.** In this task EMWD, in cooperation with the Advisory Committee and participating groundwater producers, will develop policies for monitoring of groundwater production, monitoring groundwater level and quality, monitoring of well construction, well construction, well abandonment and destruction. Policies for the exchange of agricultural and other non-potable groundwater production to municipal use will be developed in this Task.

**Task 1-3 Construct and Operate Demonstration Projects for Blending, Demineralization and Conjunctive Use.** EMWD will evaluate the technical feasibility of blending, demineralization, irrigation with reclaimed water, and conjunctive use through small scale demonstration projects. The experience and data developed in this task will be used in subsequent tasks for design of large scale projects. The demonstration projects described in Section 7, or similar projects, will be constructed and operated. The feasibility of water harvesting will be evaluated.

**Task 1-4 Develop Water Resources Planning Model.** A water resources planning model will be used to evaluate the groundwater level response, groundwater quality response, water supply reliability, water supply quality and wastewater quality responses of the management plan. This model will be used to evaluate management plan alternatives in Phase 1 and in subsequent phases.

**Task 1-5 Develop and Evaluate Feasibility Level Plans for the Management Plan Elements.** The management elements and new management elements that arise from Tasks 1-1 and 1-2 efforts, will be combined and developed into alternatives. The capacity, size and operational characteristics of the management elements will be defined and analyzed using the data from Tasks 1-1, 1-3 and 1-4. An initial environmental study will be done to assess probable environmental impacts and help develop the scope of work for environmental studies in Phase 2.



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**Phase 2 Refine the Ultimate Groundwater Management Plan**

*Phase 1 Short Term Implementation* will develop policies and data necessary for defining the ultimate groundwater management plan. Phase 2 consists of the detailed engineering, environmental and financial work to describe and implement the ultimate management plan. The complexity and cost for the analyses described below are dependent on the management plan elements included in the management plan. Phase 2 consists of four tasks that are described below.

**Task 2-1 Prepare Facility and Operation Plans.** This task will produce an initial set of facility and operational plans. The initial plans will be based on the results of Phase 1 and will be used in *Task 2-2 Prepare Project Specific Environmental Impact Report*. The initial facility and operational plans will include plans and cost opinions. The facility and operational plans will be modified in this task, based on the Task 2-2 effort to minimize undesirable environmental impacts and to include mitigation measures. The facility and operational plan will be finalized with the EIR prepared in Task 2-2. An optimum management plan will be developed that is consistent with the management plan goal and its constraints.

**Task 2-2 Prepare Project Specific Environmental Impact Reports (EIR).** EIR's will be prepared for the implementation of specific groundwater management elements that are developed in Phase 1. This Task consists of the following sub tasks.

Prepare and Distribute Notice of Preparation (NOP). The NOP will be prepared based on the results of the initial environmental study prepared in Task 1-5 and the facility and operational plans developed in Task 2-1. The final scope of work for the EIR studies will be based on the NOP and comments received on the NOP.

Estimate Environmental Impacts and Develop Mitigation Plans. This work will include: biological assessments, archaeological assessments, impact assessments and development of mitigation plans. This Task includes the evaluation of other environmental impacts such as construction related impacts, growth inducing impacts and cumulative impacts. Alternative facility and operational plans and mitigation measures will be developed in coordination with *Task 2-1 Prepare*

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*Facility and Operation Plans.* This task includes the development of mitigation and mitigation monitoring plans.

Prepare and Distribute Draft EIR(s).

Conduct Meetings, Public Hearings and Respond to Comments.

Finalize EIR(s).

**Task 2-3 Prepare Engineering Report for a Planned Recharge Project.** California Department of Health Services is requiring that new projects that involve planned recharge of reclaimed water follow the proposed regulations for planned recharge projects. This has recently occurred in the Los Angeles Central Basin, the Chino Basin and in the Riverside-Colton Basins. The data and models developed in Phase 1 will be used to evaluate the hydraulic and water quality response from reclaimed water recharge. This task consists of the following subtasks.

Describe the Impacts from Reclaimed Water Recharge. This subtask includes estimating the impacts of wastewater recharge at the regional and local levels. The data and models developed in Phase I will be used to estimate the regional and local impacts. If warranted, the facility and operational plans will be revised and the impact analysis repeated.

Develop a Groundwater Production Management and Monitoring Plan. A groundwater production management and monitoring plan will be developed consistent with proposed DHS regulations. The implementation of this plan will be included in the EIR's developed in Task 2-2 and the institutional plan developed in Task 2-4.

Prepare Engineering Report.

**Task 2-4 Institutional Planning.** This task consists of institutional planning necessary for implementation of the groundwater management plan. The work will be iterative with the institutional plans and agreements evolving throughout Phase 2. This task consists of the following subtasks.

Describe Powers and Limitations of Entities Involved in Groundwater Management Plan. This subtask consists of identifying and describing the

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statutory responsibilities, powers and limitations of participants, regulatory agencies and third party interests.

Describe Regulatory and Water Rights Implications of Groundwater Management Plan. This task consists of describing the existing and proposed regulatory limits and water rights implications of the groundwater management plan; and the development of institutional arrangements and agreements necessary for implementation of plan elements.

Conduct Economic Analysis of Groundwater Management Plan. The capital and operating costs of the groundwater management plan will be evaluated and updated throughout Phase 2. Using Task 2-1 results, the economic benefits and costs for participating entities and third parties will be evaluated. The results of the economic analysis will feed back to Task 2-1, providing the opportunity to optimize the groundwater management plan.

Develop Preliminary Financing Plan. Financing alternatives will be developed throughout the Phase 2 effort that will be consistent with the facilities described in Task 2-1 and the financing capabilities of the participating agencies.

Describe Institutional Arrangements Necessary to Implement Groundwater Management Plan. This subtask consists of finalizing alternative institutional arrangements for participation, facility construction, ownership and management, payment and collection of fees, etc..

Develop Agreements. This subtask consists of preparing draft agreements for all the agreements that will be necessary to implement the ultimate groundwater management plan.

### **Phase 3 Ultimate Groundwater Management Plan Implementation**

The facility plans, environmental documentation and draft agreements developed in Phase 2 will be converted to construction documents, project-specific environmental documentation and final agreements. These projects will then be constructed and operated. The sequencing and sizing of the management elements will depend on actual future water demands and the availability of

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funds for construction. It is premature to speculate on the magnitude of the effort required by most of these tasks because of uncertainties in what facilities and operating plans will be included in the groundwater management plan and the timing of the tasks.

**Task 3-1 Prepare Final Design and Bid Documents.** This task consists of final engineering, design and preparation of bid documents. The types of facilities that will be included are wells, pipelines, reservoirs, treatment facilities, and spreading basins.

**Task 3-2 Prepare Project Specific Supplemental EIR's and Negative Declarations.** This task consists of the preparation of supplemental project-specific EIR's and negative declarations (if applicable). These documents will be for specific elements in groundwater management plan projects that will include wells, pipelines and recharge facilities.

**Task 3-3 Prepare Final Agreements.** This task consists of developing and finalizing the agreements that allow the groundwater management plan to be constructed and operated.

**Construction and Operation.** Several series of tasks will need to be developed to describe the construction and operational process for the groundwater management plan elements that will actually be constructed.

## MANAGEMENT AND MONITORING

The management and monitoring of the groundwater management plan will occur while the elements of ultimate groundwater management plan are being implemented. The management and monitoring activities developed in Phase 1 will be adopted by EMWD board action. Future modifications to management and monitoring programs will be incorporated as warranted by change conditions.

## SCHEDULE AND COST

The Phase 1 work should take about two years to complete. Phase 2 will take about two years to complete and will overlap Phase 1 by about one year. The cumulative time required to complete phases 1 and 2 will be about three years. Phase 3 could take up to 10 years to complete with

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some projects (e.g., blending) coming on line within a couple of years and other projects (e.g., large scale surface recharge) taking 10 years to implement.

The cost to complete Phases 1 and 2 is estimated to range between 2 to 3 million dollars. The cost to complete Phase 3 cannot be estimated until the ultimate plan is described at the conclusion of Phase 2.

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(continued)

Water Resources Engineers, "Groundwater Model Development and Verification for San Jacinto Groundwater Basin", prepared for Santa Ana Waterhsed Project Authority, June 1973

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*APPENDIX A*

**A-1**

*AB 3030 with AB 1152 Amendments*

**PART 2.75**  
**GROUNDWATER MANAGEMENT**

<b>Chapter</b>		<b>Section</b>
1. <b>General Provisions</b> .....		10750
2. <b>Definitions</b> .....		10751
3. <b>Groundwater Management Plans</b> .....		10752
4. <b>Finances</b> .....		10753
5. <b>Miscellaneous</b> .....		10754

*Part 2.75 was added by Stats.1992, c. 947 (A.B.3030), § 2.*

*Former Part 2.75, Groundwater Resources, consisting of §§ 10750 to 10767, was added by Stats.1991, c. 903 (A.B.255), § 1, and repealed by Stats.1992, c. 947 (A.B.3030), § 1.*

**CHAPTER 1**

**GENERAL PROVISIONS**

<b>Section</b>		<b>Section</b>	
10750.	Legislative findings, declarations and intent.		ny without agreement prohibited application of section.
10750.2.	Application of part.	10750.8.	Management by local agencies within service area of another agency without agreement prohibited; application of section.
10750.4.	Adoption of groundwater management plan or program not required.	10750.9.	Groundwater management program procedures to establish commence prior to January 1, 1993; completion amendment.
10750.6.	Authority of local agencies or water-master to manage groundwater not affected.	10750.10.	Other powers.
10750.7.	Management by local agencies within service area of another agency, water corporation or mutual water compa-		

*Chapter 1 was added by Stats.1992, c. 947 (A.B.3030), § 2.*

**§ 10750. Legislative findings, declarations and intent**

The Legislature finds and declares that groundwater is a valuable natural resource in California, and should be managed to ensure both its safe production and its quality. It is the intent of the Legislature to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions.

(Added by Stats.1992, c. 947 (A.B.3030), § 2.)

**Additions or changes indicated by underline; deletions by asterisks \* \* \***

(a) Subject to subdivision (b), this part applies to all groundwater basins in the state.

(b) This part does not apply to any portion of a groundwater basin that is subject to groundwater management by a local agency or a watermaster pursuant to other provisions of law or a court order, judgment, or decree, unless the local agency or watermaster agrees to the application of this part. (Added by Stats.1992, c. 947 (A.B.3030), § 2.)

#### Historical and Statutory Notes

**Derivation:** Former § 10750, added by Stats.1991, c. 903 (A.B.255), § 1.

#### § 10750.4. Adoption of groundwater management plan or program not required

Nothing in this part requires a local agency overlying a groundwater basin to adopt or implement a groundwater management plan or groundwater management program pursuant to this part. (Added by Stats.1992, c. 947 (A.B.3030), § 2.)

#### § 10750.6. Authority of local agencies or watermaster to manage groundwater not affected

Nothing in this part affects the authority of a local agency or a watermaster to manage groundwater pursuant to other provisions of law or a court order, judgment, or decree. (Added by Stats.1992, c. 947 (A.B.3030), § 2.)

#### § 10750.7. Management by local agencies within service area of another agency, water corporation or mutual water company without agreement prohibited; application of section

(a) A local agency may not manage groundwater pursuant to this part within the service area of another local agency, a water corporation regulated by the Public Utilities Commission, or a mutual water company without the agreement of that other entity.

(b) This section applies only to groundwater basins that are not critically overdrafted. (Added by Stats.1992, c. 947 (A.B.3030), § 2.)

#### Historical and Statutory Notes

**Derivation:** Former § 10762, added by Stats.1991, c. 903 (A.B.255), § 1.

#### § 10750.8. Management by local agencies within service area of another agency without agreement prohibited; application of section

(a) A local agency may not manage groundwater pursuant to this part within the service area of another local agency without the agreement of that other entity.

(b) This section applies only to groundwater basins that are critically overdrafted. (Added by Stats.1992, c. 947 (A.B.3030), § 2.)

#### Historical and Statutory Notes

**Derivation:** Former § 10762, added by Stats.1991, c. 903 (A.B.255), § 1.

#### § 10750.9. Groundwater management program; procedures to establish commenced prior to January 1, 1993; completion; amendment

(a) A local agency that commences procedures, prior to January 1, 1993, to adopt an ordinance or resolution to establish a program for the management of groundwater pursuant to Part 2.75 (commencing **Additions or changes indicated by underline; deletions by asterisks \* \* \***

§ 10750.9

WATER CODE

with Section 10750), as added by Chapter 903 of the Statutes of 1991, may proceed to adopt the ordinance or resolution pursuant to \* \* \* Part 2.75, and the completion of those procedures is deemed to meet the requirements of this part.

(b) A local agency that has adopted an ordinance or resolution pursuant to Part 2.75 (commencing with Section 10750), as added by Chapter 903 of the Statutes of 1991, may amend its groundwater management program by ordinance or resolution of the governing body of the local agency to include any of the plan components set forth in Section 10753.7.

(Added by Stats.1992, c. 947 (A.B.3030), § 2. Amended by Stats.1993, c. 320 (A.B.1152), § 1.)

§ 10750.10. Other powers

This part is in addition to, and not a limitation on, the authority granted to a local agency pursuant to other provisions of law.

(Added by Stats.1992, c. 947 (A.B.3030), § 2.)

Historical and Statutory Notes

Derivation: Former § 10766, added by Stats.1991, c. 903 (A.B.255), § 1.

§ 10751. Repealed by Stats.1992, c. 947 (A.B.3030), § 1

Historical and Statutory Notes

The repealed section, added by Stats.1991, c. 903 (A.B. 255), § 1, set forth definitions. See, now, § 10752.

CHAPTER 2

DEFINITIONS

Section 10752. Definitions.

*Chapter 2 was added by Stats.1992, c. 947 (A.B.3030), § 2.*

§ 10752. Definitions

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

(a) "Groundwater" means all water beneath the surface of the earth within the zone below the water table in which the soil is completely saturated with water, but does not include water which flows in known and definite channels.

(b) "Groundwater basin" means any basin identified in the department's Bulletin No. 118, dated September 1975, and any amendments to that bulletin, but does not include a basin in which the average well yield is less than 100 gallons per minute.

(c) "Groundwater extraction facility" means any device or method for the extraction of groundwater within a groundwater basin.

(d) "Groundwater management plan" or "plan" means a document that describes the activities intended to be included in a groundwater management program.

(e) "Groundwater management program" or "program" means a coordinated and ongoing activity undertaken for the benefit of a groundwater basin, or a portion of a groundwater basin, pursuant to a groundwater management plan adopted pursuant to this part.

(f) "Groundwater recharge" means the augmentation of groundwater, by natural or artificial means, with surface water or recycled water.

(g) "Local agency" means any local public agency that provides water service to all or a portion of its service area, and includes a joint powers authority formed by local public agencies that provide water service.

(h) "Recharge area" means the area that supplies water to an aquifer in a groundwater basin and includes multiple wellhead protection areas.

Additions or changes indicated by underline; deletions by asterisks \* \* \*



**Historical and Statutory Notes**

Derivation: Former § 10753, added by Stats.1991, c. 903 (A.B.255), § 1.

**§ 10753.3. Publication of resolution of intention**

(a) After the conclusion of the hearing, and if the local agency adopts a resolution of intention, the local agency shall publish the resolution of intention in the same manner that notice for the hearing held under Section 10753.2 was published.

(b) Upon written request, the local agency shall provide any interested person with a copy of the resolution of intention.

(Added by Stats.1992, c. 947 (A.B.3030), § 2.)

**Historical and Statutory Notes**

Derivation: Former § 10754, added by Stats.1991, c. 903 (A.B.255), § 1.

**§ 10753.4. Preparation of plan; adoption; expiration of resolution of intention**

The local agency shall prepare a groundwater management plan within two years of the date of the adoption of the resolution of intention. If the plan is not adopted within two years, the resolution of intention expires, and no plan may be adopted except pursuant to a new resolution of intention adopted in accordance with this chapter.

(Added by Stats.1992, c. 947 (A.B.3030), § 2.)

**§ 10753.5. Second hearing; notice; protests to adoption of plan**

(a) After a groundwater management plan is prepared, the local agency shall hold a second hearing to determine whether to adopt the plan. Notice of the hearing shall be given pursuant to Section 6066 of the Government Code. The notice shall include a summary of the plan and shall state that copies of the plan may be obtained for the cost of reproduction at the office of the local agency.

(b) At the second hearing, the local agency shall consider protests to the adoption of the plan. At any time prior to the conclusion of the second hearing, any landowner within the local agency may file a written protest or withdraw a protest previously filed.

(Added by Stats.1992, c. 947 (A.B.3030), § 2.)

**Historical and Statutory Notes**

Derivation: Former § 10755, added by Stats.1991, c. 903 (A.B.255), § 1.

**§ 10753.6. Written protest; contents; majority protest**

(a) A written protest filed by a landowner shall include the landowner's signature and a description of the land owned sufficient to identify the land. A public agency owning land is deemed to be a landowner for the purpose of making a written protest.

(b) The secretary of the local agency shall compare the names and property descriptions on the protest against the property ownership records of the county assessors.

(c) (1) A majority protest shall be determined to exist if the governing board of the local agency finds that the protests filed and not withdrawn prior to the conclusion of the second hearing represent more than 50 percent of the assessed value of the land within the local agency subject to groundwater management pursuant to this part.

(2) If the local agency determines that a majority protest exists, the groundwater plan may not be adopted and the local agency shall not consider adopting a plan for the area proposed to be included within the program for a period of one year after the date of the second hearing.

(3) If a majority protest has not been filed, the local agency, within 35 days after the conclusion of the second hearing, may adopt the groundwater management plan.

(Added by Stats.1992, c. 947 (A.B.3030), § 2.)

Additions or changes indicated by underline; deletions by asterisks \* \* \*



## Historical and Statutory Notes

Derivation: Former §§ 10756, 10757, added by Stats. 1991, c. 903 (A.B.255), § 1.

### § 10753.7. Plan components

A groundwater management plan may include components relating to all of the following:

- (a) The control of saline water intrusion.
- (b) Identification and management of wellhead protection areas and recharge areas.
- (c) Regulation of the migration of contaminated groundwater.
- (d) The administration of a well abandonment and well destruction program.
- (e) Mitigation of conditions of overdraft.
- (f) Replenishment of groundwater extracted by water producers.
- (g) Monitoring of groundwater levels and storage.
- (h) Facilitating conjunctive use operations.
- (i) Identification of well construction policies.
- (j) The construction and operation by the local agency of groundwater contamination cleanup, recharge, storage, conservation, water recycling, and extraction projects.
- (k) The development of relationships with state and federal regulatory agencies.
- (l) The review of land use plans and coordination with land use planning agencies to assess activities which create a reasonable risk of groundwater contamination.

(Added by Stats.1992, c. 947 (A.B.3030), § 2.)

### § 10753.8. Rules and regulations to implement and enforce plan

(a) A local agency shall adopt rules and regulations to implement and enforce a groundwater management plan adopted pursuant to this part.

(b) Nothing in this part shall be construed as authorizing the local agency to make a binding determination of the water rights of any person or entity.

(c) Nothing in this part shall be construed as authorizing the local agency to limit or suspend extractions unless the local agency has determined through study and investigation that groundwater replenishment programs or other alternative sources of water supply have proved insufficient or infeasible to lessen the demand for groundwater.

(Added by Stats.1992, c. 947 (A.B.3030), § 2.)

### § 10753.9. Potential impact of rules and regulations on business activities; consideration

In adopting rules and regulations pursuant to Section 10753.8, the local agency shall consider the potential impact of those rules and regulations on business activities, including agricultural operations, and to the extent practicable and consistent with the protection of the groundwater resources, minimize any adverse impacts on those business activities.

(Added by Stats.1992, c. 947 (A.B.3030), § 2.)

## CHAPTER 4

### FINANCES

Section		Section	
10754.	Local agencies; water replenishment district powers; fees and assessments.		payment of costs; remediation program excluded.
10754.2.	Annual fees and assessments based on amount of groundwater extracted;	10754.3.	Elections to authorize assessments or fees.

*Chapter 4 was added by Stats.1992, c. 947 (A.B.3030), § 2.*

### § 10754. Local agencies; water replenishment district powers; fees and assessments

For purposes of groundwater management, a local agency that adopts a groundwater management plan pursuant to this part has the authority of a water replenishment district pursuant to Part 4 (commencing

**Additions or changes indicated by underline; deletions by asterisks \* \* \***

with Section 60220) of Division 18 and may fix and collect fees and assessments for groundwater management in accordance with Part 6 (commencing with Section 60300) of Division 18.

(Added by Stats.1992, c. 947 (A.B.3030), § 2.)

**Historical and Statutory Notes**

**1992 Legislation**

Former § 10754 was repealed by Stats.1992, c. 947 (A.B.3030), § 1. See, now, § 10753.3.

Derivation: Former §§ 10759, 10760 added by Stats. 1991, c. 903 (A.B.255), § 1.

**§ 10754.2. Annual fees and assessments based on amount of groundwater extracted; payment of costs; remediation program excluded**

(a) Subject to Section 10754.3, except as specified in subdivision (b), a local agency that adopts a groundwater management plan pursuant to this part, may impose equitable annual fees and assessments for groundwater management based on the amount of groundwater extracted from the groundwater basin within the area included in the groundwater management plan to pay for costs incurred by the local agency for groundwater management, including, but not limited to, the costs associated with the acquisition of replenishment water, administrative and operating costs, and costs of construction of capital facilities necessary to implement the groundwater management plan.

(b) The local agency may not impose fees or assessments on the extraction and replacement of groundwater pursuant to a groundwater remediation program required by other provisions of law or a groundwater storage contract with the local agency.

(Added by Stats.1992, c. 947 (A.B.3030), § 2. Amended by Stats.1993, c. 320 (A.B.1152), § 4.)

**Historical and Statutory Notes**

Derivation: Former §§ 10759, 10760 added by Stats. 1991, c. 903 (A.B.255), § 1.

**§ 10754.3. Elections to authorize assessments or fees**

Before a local agency may levy a water management assessment pursuant to Section 10754.2 or otherwise fix and collect fees for the replenishment or extraction of groundwater pursuant to this part, the local agency shall hold an election on the proposition of whether or not the local agency shall be authorized to levy a groundwater management assessment or fix and collect fees for the replenishment or extraction of groundwater. The local agency shall be so authorized if a majority of the votes cast at the election is in favor of the proposition. The election shall be conducted in the manner prescribed by the laws applicable to the local agency or, if there are no laws so applicable, then as prescribed by laws relating to local elections. The election shall be conducted only within the portion of the jurisdiction of the local agency subject to groundwater management pursuant to this part.

(Added by Stats.1992, c. 947 (A.B.3030), § 2.)

**Historical and Statutory Notes**

Derivation: Former § 10761, added by Stats.1991, c. 903 (A.B.255), § 1.

**CHAPTER 5**

**MISCELLANEOUS**

**Section**

10755. Annexed land; compliance with plan.  
10755.2. Coordinated plans for local agencies within same groundwater basin; joint

**Section**

powers agreements; agreements with public entities or private parties.  
10755.3. Meetings to coordinate plans.  
10755.4. Limitation on application of part.

*Chapter 5 was added by Stats.1992, c. 947 (A.B.3030), § 2.*

**§ 10755. Annexed land; compliance with plan**

(a) If a local agency annexes land subject to a groundwater management plan adopted pursuant to this part, the local agency annexing the land shall comply with the groundwater management plan for the annexed property.

Additions or changes indicated by underline; deletions by asterisks \* \* \*

(b) If a local agency subject to a groundwater management plan adopted pursuant to this part annexes land not subject to a groundwater management plan adopted pursuant to this part at the time of annexation, the annexed territory shall be subject to the groundwater management plan of the local agency annexing the land.

(Added by Stats.1992, c. 947 (A.B.3030), § 2.)

**Historical and Statutory Notes**

1992 Legislation  
Former § 10755 was repealed by Stats.1992, c. 947 (A.B.3030), § 1. See, now, § 10753.5.  
Derivation: Former § 10764, added by Stats.1991, c. 903 (A.B.255), § 1.

**§ 10755.2. Coordinated plans for local agencies within same groundwater basin; joint powers agreements; agreements with public entities or private parties**

(a) It is the intent of the Legislature to encourage local agencies, within the same groundwater basin, that are authorized to adopt groundwater management plans pursuant to this part, to adopt and implement a coordinated groundwater management plan.

(b) For the purpose of adopting and implementing a coordinated groundwater management program pursuant to this part, a local agency may enter into a joint powers agreement pursuant to Chapter 5 (commencing with Section 6500) of Division 7 of Title 1 of the Government Code with public agencies, or a memorandum of understanding with public or private entities providing water service.

(c) A local agency may enter into agreements with public entities or private parties for the purpose of implementing a coordinated groundwater management plan.

(Added by Stats.1992, c. 947 (A.B.3030), § 2. Amended by Stats.1993, c. 320 (A.B.1152), §5.)

**Historical and Statutory Notes**

Derivation: Former §§ 10758, 10763 added by Stats. 1991, c. 903 (A.B.255), § 1.

**§ 10755.3. Meetings to coordinate plans**

Local agencies within the same groundwater basin that conduct groundwater management programs within that basin pursuant to this part shall, at least annually, meet to coordinate those programs.

(Added by Stats.1992, c. 947 (A.B.3030), § 2.)

**§ 10755.4. Limitation on application of part**

Except in those groundwater basins that are subject to critical conditions of groundwater overdraft, as identified in the department's Bulletin 118-80, revised on December 24, 1982, the requirements of a groundwater management plan that is implemented pursuant to this part do not apply to the extraction of groundwater by means of a groundwater extraction facility that is used to provide water for domestic purposes to a single-unit residence and, if applicable, any dwelling unit authorized to be constructed pursuant to Section 65852.1 or 65852.2 of the Government Code.

(Added by Stats.1992, c. 947 (A.B.3030), § 2.)

§§ 10756 to 10767. Repealed by Stats.1992, c. 947 (A.B.3030), § 1

**Historical and Statutory Notes**

Sections 10756 and 10757, see, now, § 10753.6.  
Section 10758, see, now, § 10755.2.  
Sections 10759 and 10760, see, now, §§ 10754 and 10754.2.  
Section 10761, see, now, § 10754.3.  
Section 10762, see, now, §§ 10750.7 and 10750.8.  
Section 10763, see, now, § 10755.2.  
Section 10764, see, now, § 10755.  
Section 10766, see, now, § 10750.10.

A-2

*Proposed Regulation: Title 22, California Code of Regulations  
Division 4. Environmental Health, Chapter 3 Reclamation Criteria*

**PROPOSED REGULATION:**

**Title 22, CALIFORNIA CODE OF REGULATIONS**

**DIVISION 4. ENVIRONMENTAL HEALTH**

**CHAPTER 3. RECLAMATION CRITERIA**

**ARTICLE 1. DEFINITIONS**

**Section 60301. Definitions.**

(a) **Reclaimed Water.** Reclaimed water means water which, as a result of treatment of domestic wastewater, is suitable for a direct beneficial use or a controlled use that would not otherwise occur.

(b) **Reclamation Plant.** Reclamation plant means an arrangement of devices, structures, equipment, processes and controls which produce a reclaimed water suitable for the intended reuse.

(c) **Regulatory Agency.** Regulatory agency means the California Regional Water Quality Control Board in whose jurisdiction the reclamation plant is located.

(d) **Direct Beneficial Use.** Direct beneficial use means the use of reclaimed water which has been transported from the point of production to the point of use without an intervening discharge to waters of the State.

(e) **Food Crops.** Food crops mean any crops intended for human consumption.

(f) **Spray Irrigation.** Spray irrigation means application of reclaimed water to crops by spraying it from orifices in piping.

(g) **Surface Irrigation.** Surface irrigation means application of reclaimed water by means other than spraying such that contact between the edible portion of any food crop and reclaimed water is prevented.

(h) **Restricted Recreational Impoundment.** A restricted recreational impoundment is a body of reclaimed water in which recreation is limited to fishing, boating, and other non-body-contact water recreation activities.

(i) **Nonrestricted Recreational Impoundment.** A nonrestricted recreational impoundment is an impoundment of reclaimed water in which no limitations are imposed on body-contact water sport activities.

(j) **Landscape Impoundment.** A landscape impoundment is a body of reclaimed water which is used for aesthetic enjoyment or which otherwise serves a function not intended to include public contact.

(k) **Approved Laboratory Methods.** Approved laboratory methods are those specified in the latest edition of "Standard Methods for the Examination of Water and Wastewater," prepared and published jointly by the American Public Health Association, the American Water Works Association, and the Water Pollution Control

Federation and which are conducted in laboratories approved by the State Department of Health.

(l) **Unit Process.** Unit process means an individual stage in the wastewater treatment sequence which performs a major single treatment.

(m) **Primary Effluent.** Primary effluent is the effluent from a wastewater treatment process which provides removal of sewage solids so that it contains not more than 0.5 milliliter per liter per hour of settleable solids as determined by an approved laboratory method.

(n) **Oxidized Wastewater.** Oxidized wastewater means wastewater in which the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen.

(o) **Biological Treatment.** Biological treatment means methods of wastewater treatment in which bacterial or biochemical action is intensified as a means of producing an oxidized wastewater.

(p) **Secondary Sedimentation.** Secondary sedimentation means the removal by gravity of settleable solids remaining in the effluent after the biological treatment process.

(q) **Coagulated Wastewater.** Coagulated wastewater means oxidized wastewater in which colloidal and finely divided suspended matter have been destabilized and agglomerated by the addition of suitable floc-forming chemicals or by an equally effective method.

(r) **Filtered Wastewater.** Filtered wastewater means an oxidized, coagulated, clarified wastewater which has been passed through natural undisturbed soils or filter media, such as sand or diatomaceous earth, so that the turbidity as determined by an approved laboratory method does not exceed an average operating turbidity of 2 turbidity units and does not exceed 5 turbidity units more than 5 percent of the time during any 24-hour period.

(s) **Disinfected Wastewater.** Disinfected wastewater means wastewater in which the pathogenic organisms have been destroyed by chemical, physical or biological means.

(t) **Multiple Units.** Multiple units means two or more units of a treatment process which operate in parallel and serve the same function.

(u) **Standby Unit Process.** A standby unit process is an alternate unit process or an equivalent alternative process which is maintained in operable condition and which is capable of providing comparable treatment for the entire design flow of the unit for which it is a substitute.

(v) **Power Source.** Power source means a source of supplying energy to operate unit processes.

(w) **Standby Power Source.** Standby power source means an automatically actuated self-starting alternate energy source maintained in immediately operable condition and of sufficient



capacity to provide necessary service during failure of the normal power supply.

(x) **Standby Replacement Equipment.** Standby replacement equipment means reserve parts and equipment to replace broken-down or worn-out units which can be placed in operation within a 24-hour period.

(y) **Standby Chlorinator.** A standby chlorinator means a duplicate chlorinator for reclamation plants having one chlorinator and a duplicate of the largest unit for plants having multiple chlorinator units.

(z) **Multiple Point Chlorination.** Multiple point chlorination means that chlorine will be applied simultaneously at the reclamation plant and at subsequent chlorination stations located at the use area and/or some intermediate point. It does not include chlorine application for odor control purposes.

(aa) **Alarm.** Alarm means an instrument or device which continuously monitors a specific function of a treatment process and automatically gives warning of an unsafe or undesirable condition by means of visual and audible signals.

(bb) **Person.** Person also includes any private entity, city, county, district, the State or any department or agency thereof.

(cc) Direct Injection. The controlled subsurface addition of water directly into the groundwater basin that results in the

replenishment of groundwater used or suitable for use as a source of domestic water supply.

(dd) General Mineral. Water analyses for bicarbonate, carbonate, and hydroxide alkalinity, calcium, chloride, copper, foaming agents, iron, magnesium, manganese, pH, sodium, sulfate, specific conductance, total dissolved solids, total hardness, and zinc.

(ee) General Physical. Water analyses for color and odor.

(ff) Initial Percolative Capacity. The rate (unit volume per unit area per unit time or unit length per unit time) at which water moves through the soil prior to recharge conditions.

(gg) Organics Removal. Granular activated carbon adsorption or reverse osmosis treatment designed to remove organic compounds from the reclaimed water.

(hh) Planned Groundwater Recharge Project. Any water reclamation project designed for the purpose of recharging groundwater suitable for use as a source of domestic water supply.

(ii) Project Category I. A surface spreading recharge project which uses reclaimed water that has been oxidized, filtered, disinfected, and subjected to organics removal.

(id) Project Category II. A surface spreading recharge project which uses reclaimed water that has been oxidized, filtered, and disinfected.

(kk) Project Category III. A surface spreading recharge project which uses reclaimed water that has been oxidized and disinfected.

(ll) Project Category IV. A direct injection recharge project which uses reclaimed water that has been oxidized, filtered, disinfected, and subjected to organics removal.

(mm) Project Sponsor. An agency or agencies that receives from a Regional Water Quality Control Board water reclamation requirements for a planned groundwater recharge project.

(nn) Surface Spreading. The controlled application of water to the ground surface for the purpose of replenishing groundwater used or suitable for use as a source of domestic water supply.

(oo) Total Organic Carbon (TOC). The oxidizable organic carbon present in the reclaimed water measured by the methods prepared and published jointly by the American Public Health Association, the American Water Works Association, and the Water Pollution Control Federation in Section 5310 of the 17th edition of Standard Methods for the Examination of Water and Wastewater and which are conducted in laboratories approved by the State Department of Health Services.

NOTE: Authority cited: Section 208, Health and Safety Code and Section 13521, Water Code. Reference: Section 13520, Water Code.

ARTICLE 5.1. GROUNDWATER RECHARGE

~~Section 60320. Groundwater Recharge.~~

~~(a) Reclaimed water used for groundwater recharge of domestic water supply aquifers by surface spreading shall be at all times of a quality that fully protects public health. The State Department of Health Services' recommendations to the Regional Water Quality Control Boards for proposed groundwater recharge projects and for expansion of existing projects will be made on an individual case basis where the use of reclaimed water involves a potential risk to public health.~~

~~(b) The State Department of Health Services' recommendations will be based on all relevant aspects of each project, including the following factors: treatment provided, effluent quality and quantity, spreading area operations, soil characteristics, hydrogeology, residence time, and distance to withdrawal.~~

~~(c) The State Department of Health Services will hold a public hearing prior to making the final determination regarding the public health aspects of each groundwater recharge project. Final recommendations will be submitted to the Regional Water Quality Control Board in an expeditious manner.~~

Section 60320.01. Planned Groundwater Recharge Projects.

(a) This article shall apply only to planned groundwater recharge projects using reclaimed water. The creation or operation of recharge facilities to cause the infiltration or

injection of reclaimed water into a groundwater basin is evidence of a planned groundwater recharge project.

(b) A wastewater disposal project which is not designed for groundwater recharge, but which incidentally results in portions of the treated wastewater reaching groundwater or discharging to an ephemeral stream, is not covered by this article.

NOTE: Authority cited: Section 208, Health and Safety Code and Section 13521, Water Code. Reference: Section 13520, Water Code.

Section 60320.02. Source Control.

All reclaimed water used for planned groundwater recharge projects shall be from a wastewater collection system operating under a comprehensive program for the control of discharge of toxic wastes from point sources, which is approved by the Regional Water Quality Control Board.

NOTE: Authority cited: Section 208, Health and Safety Code and Section 13521, Water Code. Reference: Section 13520, Water Code.

Section 60320.03. Treatment Requirements and Performance Standards.

(a) Reclaimed water used for planned groundwater recharge projects shall comply with the following treatment requirements and treatment performance standards. Monitoring requirements and the basis for determining compliance with treatment performance standards are specified in Section 60320.06.

(1) Oxidized Wastewater.

Oxidized wastewater is required for all project categories.  
The oxidized wastewater prior to recharge shall not exceed  
20 milligrams per liter (mg/L) total organic carbon (TOC),  
30 mg/L suspended solids (SS), and 30 mg/L biochemical  
oxygen demand (BOD).

(2) Filtered Wastewater.

(A) Filtered wastewater is required for project categories  
I, II, and IV.

(B) The turbidity of the filtered wastewater prior to  
recharge shall not exceed an average of 2 turbidity units.

(C) The turbidity of the filtered wastewater prior to  
recharge shall not exceed 5 turbidity units more than 5  
percent of the time during any 24-hour period.

(3) Disinfected Wastewater.

(A) Disinfected wastewater is required for all project  
categories.

(B) For project categories I, II, and IV, the median number  
of total coliform organisms in the disinfected wastewater  
shall not exceed 2.2 per 100 milliliters (mL). The number  
of total coliform organisms shall not exceed 23 per 100 ml  
in more than one sample within any 30-day period.

(C) For project category III, the median number of total coliform organisms in the disinfected wastewater shall not exceed 23 per 100 mL. The number of total coliform organisms shall not exceed 240 per 100 mL in more than one sample within any 30-day period.

(4) Organics Removal.

Reclaimed water used for project categories I and IV shall be subjected to organics removal. The TOC in the wastewater prior to recharge shall be reduced to the concentration specified in Table 1 as identified by the reclaimed water contribution to any affected domestic water supply well and by project category. The entire reclaimed water stream used for project category IV shall be subjected to organics removal.

Table 1. Maximum Allowable TOC after Organics Removal

<u>Reclaimed Water Contribution (%)</u>	<u>Maximum TOC (mg/L)</u>	
	<u>Surface Spreading (Category I)</u>	<u>Direct Injection (Category IV)</u>
<u>0-20</u>	<u>20</u>	<u>5</u>
<u>21-25</u>	<u>16</u>	<u>4</u>
<u>26-30</u>	<u>12</u>	<u>3</u>
<u>31-35</u>	<u>10</u>	<u>3</u>
<u>36-45</u>	<u>8</u>	<u>2</u>
<u>46-50</u>	<u>6</u>	<u>2</u>

NOTE: Authority cited: Section 208, Health and Safety Code and Section 13521, Water Code. Reference: Section 13520, Water Code.



Section 60320.04. Reclaimed Water Quality Requirements.

(a) The level of general physical characteristics, radioactivity, and the concentration of general mineral, inorganic chemicals (except nitrogen compounds), and organic chemicals in the reclaimed water prior to recharge shall not exceed the maximum contaminant levels specified in Chapter 15, Sections 64435, 64443, 64444.5, and 64473.

(b) The total nitrogen concentration of the reclaimed water shall not exceed a standard of 10 mg/L as nitrogen unless the project sponsor demonstrates that the standard can be consistently met prior to reaching the groundwater level.

NOTE: Authority cited: Section 208, Health and Safety Code and Section 13521, Water Code. Reference: Section 13520, Water Code.

Section 60320.05. Recharge Site Requirements.

(a) Maximum Reclaimed Water Contribution.

(1) For project categories II and III, all the water of reclaimed water origin extracted from any domestic water supply well shall not exceed 20 percent of the total flow.

(2) For project categories I and IV, all the water of reclaimed water origin extracted from any domestic water supply well shall not exceed 50 percent of the total flow.

(3) Calculation of the percent in section 60320.05(a) (1 and 2) shall be based upon the reclaimed water contribution of all planned groundwater recharge projects affecting the basin.

(b) Minimum Depth-To-Groundwater Requirement.

(1) Planned groundwater recharge projects using surface spreading shall meet the minimum depth-to-groundwater requirements specified in Table 2 by project category and initial percolative capacity.

(2) Planned groundwater recharge projects shall not be allowed where the initial percolative capacity exceeds 0.3 in/min.

(3) The initial percolative capacity shall be determined once by representative testing of the spreading area prior to the start of groundwater recharge and shall reflect conditions throughout the required depth to groundwater. The testing procedure and results shall be described in the engineering report submitted pursuant to Section 60320.07.

(A) For existing surface spreading basins using reclaimed water or other waters, the initial percolative capacity shall be determined at least 14 days after the basins which make up a spreading area have been drained and at least 24 hours after pre-recharge conditions have been restored in the bottom of the basin.

(B) For proposed surface spreading basins, the initial percolative capacity shall be determined in a prototype basin or basins.

Table 2. Minimum Required Depth-to-Groundwater for Surface Spreading Groundwater Recharge Projects

<u>Initial Percolative Capacity (in/min)</u>	<u>Minimum Depth-to-Groundwater (ft)</u>		
	<u>Project Category</u>		
	<u>I</u>	<u>II</u>	<u>III</u>
<u>&lt;0.2</u>	<u>10</u>	<u>10</u>	<u>20</u>
<u>&lt;0.3</u>	<u>20</u>	<u>20</u>	<u>50</u>

(c) Minimum Retention Time Underground and Horizontal Separation Requirements.

(1) Reclaimed water shall be retained underground a minimum of 6 months prior to being withdrawn at a domestic water supply well for project categories I and II.

(2) Reclaimed water shall be retained underground a minimum of 12 months prior to being withdrawn at a domestic water supply well for project categories III and IV.

(3) The minimum horizontal separation between an area where reclaimed water is applied by surface spreading and a domestic

water supply well shall be 500 feet for project categories I and II.

(4) The minimum horizontal separation between an area where reclaimed water is applied by surface spreading and a domestic water supply well shall be 1000 feet for project category III.

(5) The minimum horizontal separation between the point where reclaimed water is applied by direct injection and a domestic water supply well shall be 2000 feet for project category IV.

(6) The project sponsor shall prevent the use of groundwater for drinking water within the area required to achieve the minimum retention time and minimum horizontal separation pursuant to Section 60320.05 (c)(1-5).

(d) Monitoring Wells.

Monitoring wells shall be provided to detect the influence of the recharge operation. As a minimum, monitoring wells shall be located at points one-quarter and one-half of the distance (plus or minus 10%) from the recharge area to the nearest domestic water supply well. The number and location of the proposed monitoring wells shall be described in the engineering report submitted pursuant to Section 60320.07.

NOTE: Authority cited: Section 208, Health and Safety Code and Section 13521, Water Code. Reference: Section 13520, Water Code.

Section 60320.06. Monitoring and Compliance.

(a) Treatment Performance Standards.

(1) Oxidized Wastewater. For all project categories, the BOD, SS, and TOC concentration of the oxidized wastewater shall be determined from 24-hour composite samples. Compliance with Section 60320.03(a)(1) shall be determined monthly for each constituent by averaging the results of all samples collected during the month and comparing the average to the standard in Section 60320.03(a)(1).

(A) The BOD samples for all project categories shall be collected at least weekly.

(B) The SS samples for all project categories shall be collected at least daily.

(C) The TOC samples for project categories II and III shall be collected at least daily.

(D) The TOC samples for project categories I and IV shall be collected at least weekly.

(2) Filtered Wastewater. For project categories I, II, and IV, the turbidity of the filtered wastewater shall be continuously measured and recorded.

(A) Turbidity measurements shall be read at least once every 4 hours. Compliance with the average operating turbidity pursuant to Section 60320.03(a)(2)(B) shall be

determined monthly by averaging the results of all turbidity samples read during the month and comparing the average to the turbidity standard in Section 60320.03(a)(2)(B).

(B) The turbidity record shall be read daily. Compliance with the high turbidity duration standard pursuant to Section 60320.03(a)(2)(C) shall be determined monthly by determining the highest percent of a day during the month that the filtered wastewater exceeded 5 turbidity units and comparing that percent to the standard in Section 60320.03(a)(2)(C).

(3) Disinfected Wastewater. For all project categories, bacteriological samples shall be collected and tested for coliform to monitor the performance of the disinfection process each day reclaimed water is produced for planned groundwater recharge projects. Compliance with the disinfected wastewater requirements pursuant to Section 60320.03(a)(3) shall be determined daily by determining the median coliform result of the last 7 days for which analyses have been completed and comparing that median to the appropriate coliform standard in Section 60320.03(a)(3).

(4) Organics Removal. For project categories I and IV the TOC concentration in the wastewater after the organics removal process shall be determined daily from 24-hour composite samples. Compliance with the organics removal requirement pursuant to Section 60320.03(a)(4) shall be determined daily:

by averaging daily TOC concentrations for the last 90 days of operation and comparing that average to the appropriate maximum TOC concentration in Section 60320.03(a)(4).

(b) Reclaimed Water Quality.

(1) On a quarterly basis, grab or 24-hour composite samples of reclaimed water shall be collected and analyzed for the general mineral and general physical constituents listed in subsections 64433(1) and (2), for the inorganic chemicals (except nitrogen compounds) listed in Section 64435 (Table 2), and for gross alpha and gross beta. Compliance with Section 60320.04(a) shall be determined annually by averaging the results of all samples collected during the previous 12 months and comparing the average to the standards in Section 64473 (Table 6), Section 64435 (Table 2), and Section 64443 (Table 4).

(2) On a quarterly basis, grab samples of reclaimed water shall be collected and analyzed for the organic chemicals in Table 5, Section 64444.5. Compliance with Section 60320.04(a) shall be determined annually by averaging the results of all samples collected during the previous 12 months and comparing the average to the standards in Section 64444.5 (Table 5).

(3) On a weekly basis, grab or 24-hour composite samples shall be collected and analyzed for total nitrogen. Compliance with Section 60320.04(b) shall be determined annually by averaging the results of all samples collected

during the previous 12 months and comparing the average to the total nitrogen standard in Section 60320.04(b).

(c) Recharge Site Requirements.

(1) Maximum Reclaimed Water Contribution.

(A) The reclaimed water contribution, pursuant to Sections 60320.03(a)(4) and 60320.05(a), shall be determined annually and at the domestic water supply well which receives the highest percentage of reclaimed water. The method used for the annual determination shall be described in the engineering report pursuant to Section 60320.07. Compliance with the maximum reclaimed water contribution shall be determined by averaging the last five annual determinations of reclaimed water contribution and comparing that average to the appropriate maximum percent contribution in Section 60320.05(a).

(B) The project sponsor shall demonstrate and document, once every five years, in a complete engineering report to the Regional Water Quality Control Board and the Department of Health Services that the maximum reclaimed water contribution pursuant to Section 60320.05(a) will not be exceeded.

(2) Minimum Depth-to-Groundwater Requirement.

(A) The depth-to-groundwater shall be measured every day reclaimed water is present in the spreading basin.



Compliance with Section 60320.05(b) shall be determined daily by averaging the previous 30 daily depth-to-groundwater measurements taken when reclaimed water was present in the spreading basin and comparing the result to the appropriate standard in Table 2.

(B) When the average depth-to-groundwater is less than the depth-to-groundwater requirement pursuant to Section 60320.05(b), the discharge of reclaimed water onto the spreading basin shall be halted until the depth-to-groundwater measurement exceeds the required depth-to-groundwater pursuant to Section 60320.05(b).

(C) The depth-to-groundwater shall be measured at at least one monitoring well located at each spreading basin. The location of this well shall be specified in the engineering report pursuant to Section 60320.07. The monitoring well shall be sited so that the groundwater level is measured at a point where it is closest to the bottom of the spreading basin.

(3) Minimum Retention Time Underground and Horizontal Separation Requirements.

(A) The retention time underground, pursuant to Section 60320.05(c), shall be determined annually and at the domestic water supply well in which the reclaimed water has the shortest retention time underground. The method used for the annual determination shall be described in the

engineering report pursuant to Section 60320.07. Compliance with the minimum retention time underground shall be determined by averaging the last five annual determinations of retention time and comparing that average to the appropriate retention time in Section 60320.05(c).

(B) The project sponsor shall demonstrate and document, once every five years, in a complete engineering report to the Regional Water Quality Control Board and Department of Health Services that the minimum retention time underground pursuant to Section 60320.05(c) will not be exceeded.

(C) Compliance with the horizontal separation requirement pursuant to Section 60320.05(c) for surface spreading and direct injection projects shall be determined by taking field measurements of the shortest distance between a point of recharge and a domestic water supply well. In no case shall the distance be less than the horizontal separation requirement pursuant to Section 60320.05(c).

(d) Monitoring Well Requirements.

Samples shall be collected from monitoring wells at least quarterly and analyzed for TOC and total nitrogen.

NOTE: Authority cited: Section 208, Health and Safety Code and Section 13521, Water Code. Reference: Section 13520, Water Code.

Section 60320.07. Engineering Report.

(a) Any project sponsor proposing a groundwater recharge project using reclaimed water shall submit an engineering report on the proposed groundwater recharge project to the regulatory agency. The report shall be prepared by an engineer registered in California and experienced in the fields of wastewater treatment and public water supply, in conjunction with a geologist, experienced in hydrogeology and registered in California.

(b) Groundwater recharge projects not in operation by January 1, 1993, shall not recharge reclaimed water until the project sponsor submits a complete engineering report to the Regional Water Quality Control Board and the Department of Health Services. For direct injection projects, the Department will not schedule a hearing pursuant to section 13540, Article 6, until a complete engineering report has been received by the Department.

(c) For existing groundwater recharge projects, project sponsors have five years from January 1, 1993 to submit a completed engineering report to the Regional Water Quality control Boards and Department of Health Services.

(d) For existing and proposed groundwater recharge projects, the engineering report shall consist of a thorough investigation and evaluation of the groundwater recharge project, impacts on the existing and potential uses of the impacted groundwater basin, and proposed means for achieving compliance with Sections

60320.01 to 60320.06. The engineering report shall include, but not be limited to the following:

(1) An engineering plan of the reclamation plant, transmission facilities, spreading basins/direct injections wells, and monitoring wells.

(2) A physical description of the proposed groundwater recharge project.

(3) A hydrogeologic study on the impacted groundwater basin. The study shall describe the impact of the recharge project on domestic groundwater sources. The study shall describe the source, area of recharge, quantity, quality, and groundwater flow patterns of all basin recharge waters. The study shall identify all quantities and sources of water used to determine the percent reclaimed water contribution. The study shall identify the aquifer zone in which the maximum allowed reclaimed water contribution is not met pursuant to Section 60320.05(a). The study shall identify the aquifer zone in which the provided organics removal is not sufficient for the reclaimed water contribution to the groundwater pursuant to Section 60320.03(a)(4). The study shall identify all wells that will be impacted by the proposed project and describe the groundwater quality in the impacted basin. The study shall identify the well(s) subject to the highest reclaimed water contribution and shortest reclaimed water retention time. The study shall also include quantitative

descriptions of the soil, soil layers, infiltration rates, aquifer transmissivity, groundwater movement, historic depth-to-groundwater, safe yield of the basin, and usable storage capacity of the basin.

(4) A description of the operational and management personnel, their qualifications, experience, and responsibilities.

(5) A description of how the project will be operated to comply with the recharge site requirements of maximum reclaimed water contribution, minimum depth-to-groundwater, horizontal separation, and retention time underground pursuant to Section 60320.05 (b and c).

(6) Identification of the agency responsible for preventing the use of groundwater for drinking water within certain areas pursuant to Section 60320.05 (c)(6), and the mechanism that will be used.

(7) A contingency plan for redirection of reclaimed water when treatment performance standards or depth-to-groundwater requirements are not met.

(8) A description of the methods of determination and results for initial percolative capacity, maximum reclaimed water contribution, minimum retention time underground, and horizontal separation.

(9) The number and location of monitoring wells in the spreading basin and groundwater basin.

(10) A plan for the monitoring well network to monitor groundwater flow and water quality in the impacted groundwater basin.

(11) A water quality monitoring plan for the treated wastewater, reclaimed water, and monitoring wells.

NOTE: Authority cited: Section 208, Health and Safety Code and Section 13521, Water Code. Reference: Section 13520, Water Code.

Section 60320.08. Alternatives.

(a) Alternatives to the recharge site requirements specified in Section 60320.05 (b) and (c) (2, 4, and 5), or the treatment performance standards specified in Section 60320.03 (a) (1 to 4) may be allowed if the project sponsor demonstrates to the regulating agency that the proposed alternative reliably achieves an equal degree of public health protection. Alternatives may not be used to reduce the retention time below 6 months in Section 60320.05 (c) (2) or the horizontal separation below 500 feet in Section 60320.05 (c) (4 and 5). Alternatives to Sections 60320.01 to 60320.07, inclusive, shall not be allowed, unless the planned groundwater recharge projects meet the requirements of Section 60320.08 (b to e) or 60320.09

(b) Alternatives to achieve a disinfected and filtered wastewater pursuant to Section 60320.03 (a) (2) and (a) (3) (B and C)

shall be accepted if the project sponsor demonstrates to the regulating agency that the alternatives reliably provide an equal degree of public health protection. Such a demonstration shall be based on the results from a prior equivalency demonstration, pilot-plant testing, or full-scale testing on an installation that is treating a wastewater with similar flow and wastewater quality characteristics as the wastewater proposed for treatment.

(c) Alternatives to the granular activated carbon or reverse osmosis treatment processes shall be accepted if the project sponsor demonstrates to the regulating agency that the organics removal treatment performance standards pursuant to Section 60320.03 (4) can be reliably met. Such a demonstration shall be based on the results from a prior equivalency demonstration, pilot-plant testing, or full-scale testing on an installation that is treating a wastewater with similar flow and wastewater quality characteristics as the wastewater proposed for treatment.

(d) The results of any alternative demonstration shall be presented in a complete report prepared and signed by an engineer registered in California and experienced in the fields of wastewater treatment and public water supply. Such alternatives shall not be accepted until the Regional Water Quality Control Boards and the Department of Health Services have reviewed the reports.

(e) Within 60 days following the first full year of operation of any alternative approved by the regulating agency, the project

sponsor shall submit an report, prepared by an engineer registered in California and experienced in the fields of wastewater treatment and public water supply, describing the effectiveness of the plant operation. The report shall include results of all water quality tests performed and shall evaluate compliance with established performance standards under actual operating conditions. It shall also include an assessment of problems experienced, corrective actions needed, and a schedule for providing needed improvements.

NOTE: Authority cited: Section 208, Health and Safety Code and Section 13521, Water Code. Reference: Section 13520, Water Code.

Section 60320.09. Research and Demonstration Projects.

The maximum percentage reclaimed water contribution in the total flow extracted from any domestic water supply well pursuant to Section 60320.05(a)(2) shall not apply to a project which the Department has designated as a research and demonstration project for the purpose of conducting special monitoring, treatment, health effects, or other research studies.

NOTE: Authority cited: Section 208, Health and Safety Code and Section 13521, Water Code. Reference: Section 13520, Water Code.



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*Drinking Water Standards  
and Health Advisories Table*



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DRINKING WATER STANDARDS AND HEALTH ADVISORIES TABLE

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DRINKING WATER AND GROUNDWATER PROTECTION BRANCH

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## REGION 9 DRINKING WATER STANDARDS AND HEALTH ADVISORIES TABLE

The USEPA Region 9 Drinking Water Standards and Health Advisories Table is a compendium of numerical standards, advisories and related information for chemicals and other contaminants which may be found in ground and surface waters. It provides a comprehensive listing of all current and proposed National Primary Drinking Water Regulations (NPDWRs), specific Maximum Contaminant Levels (MCLs) for California, Arizona and Hawaii, and California Drinking Water Action Levels. Where available, it includes USEPA Integrated Risk Information System (IRIS) cancer risk levels and oral reference dose (RfD) values, and USEPA Office of Ground Water and Drinking Water (OGWDW) Health Advisories for drinking water contaminants.

In order to make this table a manageable size, very few explanations or caveats for the values are included in the body of the table. Because of this, and the fact that background documentation and understanding of the derivation of specific values are critical to the proper use of this information, this table should not be used as a sole source of information for decision making. While the Appendix contains brief explanations of the different standards, criteria and advisories, consideration must be given to the context in which these numbers will be used. The appropriate reference materials should be consulted to determine the applicability of the number being considered. Some references are listed in the Appendix.

The values in this table are current to the publication date, but are subject to change. The user is advised to contact Bruce Macler, Regional Toxicologist, USEPA Region 9, at (415) 744-1884, if questions arise regarding current values.

### INFORMATION IN THIS TABLE

The information for specific contaminants in this table is arranged by contaminant type. Inorganic chemicals are listed first, followed by radionuclides, organic chemicals, microbial contaminants and water quality factors.

For each contaminant, any applicable or proposed USEPA National Primary Drinking Water Regulation is listed. These include the enforceable Maximum Contaminant Levels (MCLs), the health-based Maximum Contaminant Level Goals (MCLGs), and the aesthetics-based Secondary MCLs. A given contaminant may have both a MCL and a Secondary MCL, as well as a MCLG. The regulatory status of these values is indicated. Proposed MCLs or MCLGs have been formally proposed by USEPA, but not promulgated. Final MCLs or MCLGs have been promulgated, but are not yet effective as of the

publication date. The effective date, if available, is indicated. Current MCLs or MCLGs are in effect.

In addition to regulatory information, health risk information is provided in the table. Data from IRIS for cancer and non-cancer health effects associated with drinking water contaminants is listed. The RfD is the daily oral intake (on a body weight basis) that is below the level USEPA believes to be without adverse, non-cancer health risks (i.e., zero risk). The IRIS  $10^{-6}$  risk level is that contaminant concentration (in ug/liter) in drinking water that might yield no greater than an additional risk of one-in-a-million ( $10^{-6}$ ) after a lifetime of drinking that water. The USEPA OGWDW Health Advisories provide information on acceptably safe levels of exposures to contaminants in drinking water. The Acute 10-day values apply specifically to acute toxic effects on children, but should be protective for adults. The chronic (lifetime) values for non-cancer health effects should be protective of health even with a lifetime exposure. In most cases, this value will be the same as the MCLG, if one has been established. The chronic (lifetime) values for cancer are set at a level that should yield no greater than an additional  $10^{-6}$  risk over a lifetime exposure. EPA cancer weight of evidence determinations are listed to provide additional information on EPA's judgement of carcinogenicity for each chemical. The weight of evidence classifications are as follows:

- A known human carcinogen
- B1 probable human carcinogen based on human data
- B2 probable human carcinogen based on animal data
- C possible human carcinogen based on animal data
- D insufficient data to classify chemical
- E not a human carcinogen

#### APPLICABILITY AND USES OF THIS TABLE

The different types of standards and advisories contained in this table are based upon approaches and assumptions that are specific to each and consequently may have varying applications depending on their derivation. Use of specific types of information should be guided by the relevant legal requirements and an understanding of the meaning of the information itself.

MCLs and treatment techniques are the only federally enforceable NPDWRs. They are set to be health protective as well as feasible. More stringent state-specific MCLs are enforceable in the indicated state. MCLGs are not enforceable, but provide health-based guidance for decision making. MCLGs for chemicals causing non-carcinogenic health effects are based on the RfD and set at a level believed to be safe. MCLGs for chemicals believed to be carcinogens are set at zero, from the perspective that no level of carcinogen is safe. Feasibility is not considered in setting MCLGs. Secondary MCLs are not enforceable, but provide information on aesthetics and palatability.

Health advisories and criteria are not formally promulgated in regulations and are subject to change as new data and analyses become available. MCLGs, values in IRIS and health advisories are developed by different offices and on different schedules. Therefore, values for similar effects from a given chemical may not be consistent throughout the table. The derivations of MCLGs and chronic (lifetime) health advisories for non-carcinogenic chemicals are based on the same assumptions regarding endpoints of toxicity. In theory, the MCLG and lifetime health advisory should be the same for a specific contaminant. Slight differences in the table are due to rounding of numbers.

When considering a value to use for determining an acceptable level of contaminant in drinking water, the MCL should be selected first. In the absence of existing or proposed MCLs, users may have to decide which criteria are most appropriate. USEPA recommends a priority ranking to first consider any proposed MCLG (if other than zero), followed by the IRIS RfD or cancer risk level, and finally the chronic health advisory values.

Under the Superfund Program, remedial actions must comply with the **Applicable or Relevant and Appropriate Requirements (ARARs)**. For actions involving contamination of drinking water supplies, the ARARs under the Safe Drinking Water Act are the MCLs. Where there are no MCLs, or where the MCLs are determined to be insufficiently protective because of multiple contaminants, reference should be made to Superfund guidance documents to determine clean-up policy. For remedial actions impacting aquatic organisms and waters regulated under the Clean Water Act, consult the National Ambient Water Quality Criteria (NAWQC).

#### SYMBOLS USED IN THE TABLE

mg/l = milligrams per liter, equivalent to parts per million (ppm)  
ug/l = micrograms per liter, equivalent to parts per billion (ppb)

Note: values in table are in ug/l unless otherwise stated

IRIS = USEPA Integrated Risk Information System  
RfD = Reference dose for daily oral ingestion in micrograms per kilogram body weight per day (ug/kg-d)  
 $10^{-6}$  = one in a million excess lifetime cancer risk  
TT = treatment technique, set in lieu of numeric MCL  
+ = value from USEPA Final Draft Health Advisory  
td = temperature dependent value  
LOQ = Limit of quantification  
T&O = taste and odor refers to a value based upon organoleptic data for controlling undersirable taste and odor qualities

INORGANIC Chemicals	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California		Arizona MCL
		MCL	MCLG	RfD µg/kg-d	10 <sup>-6</sup> Risk	Acute 10 Day	Chronic(Lifetime) Non-Cancer	Cancer		MCL	Action Level	
Aluminum	Secondary	50-200								1000		
Ammonia								30,000	D			
Antimony	Current	6	6	0.4		15	3		D			
Arsenic	Current	50		0.3	0.02			0.02	A	50		50
Asbestos	Current	7E+6 long fi	7E+6 bers						A			
Barium	Current	2,000	2,000	70			2,000+		D	1,000		1000
Beryllium	Current	4	4	5	.008	30,000		0.008	B2			
Boron				90		900	600		D			
Cadmium	Current	5	5	.5		40+	5+		D	10		10
Chloramine				100		1000	2600		D			
Chlorate									D			
Chloride	Secondary	250ppm										
Chlorine									D			
Chlorine Dioxide				3			80		D			

Values are indicated in micro grams per liter (µg/l) [ equivalent to parts per billion (ppb) ] unless otherwise stated  
 Oral Referenced Doses (RfD) are in micrograms per kilogram per day (µg/kg-d), 10<sup>-6</sup> risk levels are in micrograms per liter.

INORGANIC Chemicals	Standard	EPA		IRIS -6		Health Advisories			Wt. of Evid.	California		Arizona MCL
		MCL	MCLG	RfD µg/kg-d	10 <sup>-6</sup> Risk	Acute 10 Day	Chronic(lifetime) Non-Cancer	Cancer		MCL	Action Level	
Chlorite												
Chromium(Total)	Current	100	100	5		1,000+	100+		D	50		50
Copper	Current Secondary	TT## 1,000	1,300						D			
Cyanide	Current	200	200	22		200+	200+		D			
Fluoride	Current Proposed secondary	4,000 2,000	4,000	120					D	1400- 2400td		
Iron	Secondary	300										
Lead	Current	TT#	0						B2	50		
Manganese	Secondary	50		140								
Mercury (inorganic)	Current	2	2	0.3			2+		D	2		
Molybdenum				5		80	35		D			
Nickel	Current	100	100	20		1,000+	100+		D			
Nitrate (as N)	Current	10ppm	10ppm	1600		10,000+***			D	45ppm as NO3		10ppm (as N)
Nitrite (as N)	Current	1,000	1,000	160		1,000+***			D			
Selenium	Current	50	50	5						10		50

Values are indicated in micro grams per liter (µg/l) [ equivalent to parts per billion (ppb) ] unless otherwise stated

Oral Referenced Doses (RfD) are in micrograms per kilogram per day (µg/kg-d), 10<sup>-6</sup> risk levels are in micrograms per liter.

TT - Treatment technique in lieu of numeric MCL

## - Treatment technique triggered at Action Level of 1300 ppb

td - td- temperature dependent value

# - Treatment technique and public notification triggered at Action Level of 15 ppb

\*\*\* - 10-day HA for nitrate/nitrite for 4kg child (protective of 10kg child & adults); also used for chronic (lifetime)

Chemicals	Standard	EPA		IRIS -6		Health Advisories			Wt. of Evid.	California		Arizona MCL
		MCL	MCLG	RfD $\mu\text{g}/\text{kg-d}$	10 <sup>-6</sup> Risk	Acute 10 Day	Chronic (lifetime) Non-Cancer	Cancer		MCL	Action Level	
Silver	Secondary	100		5		200	100		D	50		50
Strontium				600		25,000	17,000		D			
Sulfate	Secondary	250 ppm										
Thalium	Current	2	0.5	0.07		7	0.4					
Vanadium				7					D			
Zinc	Secondary	5,000		300		6,000	2,000		D			5,000
Acrylonitrile					0.06	20+		0.06+	B1			10
<b>RADIONUCLIDES</b>												
Gross Alpha, excl. Uranium & Radon	Current	15pCi/l						.15pCi/l	A	15pCi/l		
Gross Beta	Current	4mrem per yr						0.04mrem per year	A	50pCi/l		
Radium 226	Current Proposed	5 pCi/l (+228) 20pCi/l						.22-.26 pCi/l	A	5 pCi/l (+Ra 22)		
Radium 228	Current Proposed	5 pCi/l (+226) 20pCi/l						.22-.26 pCi/l	A	5 pCi/l (+Ra 22)		
Radon	Proposed	300 pCi/l	0					1.5pCi/l	A			
Strontium 90									A	8pCi/l		

Values are indicated in micro grams per liter ( $\mu\text{g}/\text{l}$ ) [ equivalent to parts per billion (ppb) ] unless otherwise stated  
 Oral Referenced Doses (RfD) are in micrograms per kilogram per day ( $\mu\text{g}/\text{kg-d}$ ), 10<sup>-6</sup> risk levels are in micrograms per liter.



Chemicals	RADIOISOTOPES		EPA		IRIS -6		Health Advisories			Wt. of Evid.	California		Arizona MCL
	Standard	MCL	MCLG	RfD $\mu\text{g}/\text{kg-d}$	$10^{-6}$ Risk	Acute 10 Day	Chronic (lifetime) Non-Cancer	Cancer	MCL		Action Level		
Tritium										A	20nCi/l		
Uranium	Proposed	20 ppb	0						0.7 ppb	A	20pCi/l		35pCi/L
ORGANIC													
Acenaphthylene (acenaphthene)				60									
Acephate				4						C			
Acetone				100						D			
Acetophenone				100									
Acifluorfen				13	1.0	2,000+		1.0+		B2			
Acrolein										C			320
Acrylamide	Current	TT	0	0.2	.01	30+		0.01+		B2			
Adipates (di(ethylhexyl)-adipate)	Current	400	400	600	0.03	20,000	400	0.03		C			
Alachlor	Current	2	0	10	0.4	100+		0.4+		B2		LOQ (.2)	0.2
Aldicarb	Final(a)	3	1	1.0				7+		D		10	9
Aldicarb Sulfone	Final(a)	2	1	1.0				7+		D			

Values are indicated in micro grams per liter ( $\mu\text{g}/\text{l}$ ) [ equivalent to parts per billion (ppb) ] unless otherwise stated

Oral Referenced Doses (RfD) are in micrograms per kilogram per day ( $\mu\text{g}/\text{kg-d}$ ),  $10^{-6}$  risk levels are in micrograms per liter.

TT - Treatment technique in lieu of numeric MCL

a - Effective date postponed

ORGANIC Chemicals	Standard	EPA		IRIS -6		Health Advisories			Wt. of Evid.	California		Arizona MCL
		MCL	MCLG	Rfd µg/kg-d	10 <sup>-6</sup> Risk	Acute 10 Day	Chronic(lifetime) Non-Cancer	Cancer		MCL	Action Level	
Aldicarb Sulfoxide	Final(a)	4	1	1.0			7+		D			
Aldrin				0.03	.002	0.3		0.002	B2		100 (0.05)	
Allyl alcohol				5								
Ametryn				9		9,000+	60+		D			
Ammonium Sulfamate				280		20,000+	2,000+		D			
Anthracene (PAH)				300					D			
Atrazine	Current	3	3	35	0.16	100+	3+		C	3		(HI 3)
Baygon (Propoxur)				4		40+	3+		C		90	
Benfenoxin				300								
Bentazon (Basagran)				2.5		300+	20+		D	18		
Benzene	Current	5	0		1	200+		1.0+	A	1		5
Benzene hexachloride α, β isomers (BHC)											0.7 α 0.3 β	
Benz(a)anthracene (PAH)	Proposed	0.1	0						B2			
Benzo(a)pyrene (PAH)	Current	0.2	0						B2			

Values are indicated in micro grams per liter (µg/l) [ equivalent to parts per billion (ppb) ] unless otherwise stated

Oral Referenced Doses (Rfd) are in micrograms per kilogram per day (µg/kg-d), 10<sup>-6</sup> risk levels are in micrograms per liter.  
HI - State of Hawaii MCL

ORGANIC Chemicals	Standard	EPA		IRIS -6		Health Advisories			Wt. of Evid.	California		Arizona MCL
		MCL	MCLG	RfD µg/kg-d	10 <sup>-6</sup> Risk	Acute 10 Day	Chronic (lifetime) Non-Cancer	Cancer		MCL	Action Level	
Benzo(b)fluoranthene (PAH)	Proposed	0.2	0						B2			
Bolero (thiobencarb)										70		
Bromacil				130		5,000+	90+		C			
Bromochloromethane				13		1,000	90					
Bromodichloro- methane (THM)	Current	100 a		20	0.6	7,000+		0.6	B2			
Bromoform (THM)	Current	100 a		20	4	2,000		4	B2			
Bromomethane (Methyl Bromide)				1		100+	10+		D			2.5
Butyl benzyl- phthlate (PAE)	Proposed	100	0	200					C			
Butylate				50		2,000+	350+		D			
Captafol				2	4				C			
Captan				130					B2		350	
Carbaryl				100		1,000+	700+		D		60	
Carbofuran	Current	40	40	5		50+	40+		E	18		36
Carbon Disulfide				100								830

Values are indicated in micro grams per liter (µg/l) [ equivalent to parts per billion (ppb) ] unless otherwise stated

Oral Referenced Doses (RfD) are in micrograms per kilogram per day (µg/kg-d), 10<sup>-6</sup> risk levels are in micrograms per liter.  
 a - Total Trihalomethanes MCL includes 4 compounds: chloroform, bromodichloromethane, dibromochloromethane, bromoform

ORGANIC Chemicals	Standard	MCL	EPA		IRIS 10 <sup>-6</sup>		Health Advisories			Wt. of Evid.	California		Arizona MCL
			MCLG		Rfd µg/kg-d	10 <sup>-6</sup> Risk	Acute 10 Day	Chronic(lifetime) Non-Cancer	Cancer		MCL	Action Level	
Carbon Tetrachloride	Current	5	0		0.7	0.3	200+		0.3+	B2	0.5		5
Carboxin					100		1,000+	700+		D			
Chloral Hydrate					0.2		1,400	60		D			
Chloramben					15		3,000+	100+		D			
Chlordane	Current	2	0		0.06	0.03	60+		0.03+	B2	0.1		
2,4-Dinitrotoluene					2	50	500		50	B2			
Chlorobenzene (Monochlorobenzene)	Current	100	100		20		2,000+	100+		D	30		
Chlorodibromomethane (THM)	Current	100 a			20		7,000	60		C			
Chloroform (trichloromethane) (THM)	Current	100 a			10	6	4,000		6.0	B2			
bis-2-Chloroisopropyl ether					40		4,000+	300+		D			
Chloromethane					4		400	3		C			
2-Chlorophenol					5		50	40		D			
Chloropicrin												50(37 T&O)	
Chlorothalonil					15	1.5	200+		1.5+	B2			

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Oral Referenced Doses (Rfd) are in micrograms per kilogram per day (µg/kg-d), 10<sup>-6</sup> risk levels are in micrograms per liter.  
 a - Total Trihalomethanes MCL includes 4 compounds: chloroform, bromodichloromethane, dibromochloromethane, bromoform

ORGANIC Chemicals	Standard	EPA		IRIS -6		Health Advisories			Wt. of Evid.	California MCL	California Action Level	Arizona MCL
		MCL	MCLG	RfD µg/kg-d	10 <sup>-6</sup> Risk	Acute 10 Day	Chronic(lifetime) Non-Cancer	Cancer				
Chlorotoluene(o,p)				20		2,000+	100+		D			
CIPC (Chlorpropham) (isopropylN(3chloro- phenyl) carbamate)				200							350	
Chlorpyrifos				3		30+	20+		D			
Cresol(o,m)				500					C			
Cyanazine				2		100+	1		C			
DDT				0.5	0.1				B2			
Dalapon	Current	200	200	26		3,000+	200+		D			
DCPA (Dacthal)				500		80,000+	4,000+		D			
Di(ethylhexyl)- adipate (Adipates)	Current	400	400	600	0.03	20,000	400+	0.03	C			
Diazinon				0.09		20+	0.6+		E		14	
Dibromochloro- methane (THM)	Current	100 @		20		7,000	60		C			
1,2-Dibromo-3-chloro propane (DBCP)	Current	0.2	0		0.03	50+		0.03	B2	0.2		(HI.04)
Dibutyl phthalate (PAE)				100					D			
Dicamba				30		300+	200+		D			

Values are indicated in micro grams per liter (µg/l) [ equivalent to parts per billion (ppb) ] unless otherwise stated

Oral Referenced Doses (RfD) are in micrograms per kilogram per day (µg/kg-d), 10<sup>-6</sup> risk levels are in micrograms per liter.

@ - Total Trihalomethanes MCL includes 4 compounds: chloroform, bromodichloromethane, dibromochloromethane, bromoform

HI - State of Hawaii MCL

ORGANIC Chemicals	Standard	EPA		IRIS <sup>-6</sup>		Health Advisories			Wt. of Evid.	California		Arizona MCL
		MCL	MCLG	Rfd $\mu\text{g}/\text{kg}\cdot\text{d}$	10 <sup>-6</sup> Risk	Acute 10 Day	Chronic (lifetime) Non-Cancer	Cancer		MCL	Action Level	
Dichloroacetic Acid				8		50,000+			B2			
Dichloroacetonitrile				8		1000+	6+		C			
1,2-Dichlorobenzene (o-Dichlorobenzene)	Current Proposed secondary	600 10	600	90		9,000+	600+		D		130 *** (10T&O)	
1,3-Dichlorobenzene (m-Dichlorobenzene)	Current	600	600	90		9,000+	600+		D		130 *** (20T&O)	
1,4-Dichlorobenzene (p-Dichlorobenzene)	Current Proposed secondary	75 5	75	100		10,000+	75+		C	5		750
Dichlorodifluoromethane (Freon 12)				200		40,000+	1,000+		D			1.0
1,1-Dichloroethane										5		
1,2-Dichloroethane	Current	5	0		0.4	700+		0.4	B2	0.5		5.0
1,1-Dichloroethylene	Current	7	7	9		1,000+	7+		C	6		7.0
cis-1,2-Dichloroethylene	Current	70	70	10		3,000+	70+		D	6		
trans-1,2-Dichloroethylene	Current	100	100	20		2,000+	100+		D	10		
Dichloromethane (Methylene chloride)	Current	5	0	60		2,000+		5+	B2		40	
2,4-Dichlorophenol				3		30+	20+		D			
2,4-Dichlorophenoxy-acetic acid (2,4-D)	Current	70	70	10		300+	70+		D	100		100

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Oral Referenced Doses (Rfd) are in micrograms per kilogram per day ( $\mu\text{g}/\text{kg}\cdot\text{d}$ ),  $10^{-6}$  risk levels are in micrograms per liter.  
 \*\*\* - Action Level is for a single isomer or sum isomers

ORGANIC Chemicals	Standard	EPA		IRIS -6		Health Advisories			Wt. of Evid.	California		Arizona MCL
		MCL	MCLG	RfD µg/kg-d	10 <sup>-6</sup> Risk	Acute 10 Day	Chronic(lifetime) Non-Cancer	Cancer		MCL	Action Level	
1,2-Dichloropropane	Current	5	0		0.5	90+		0.5+	B2	5		
1,3-Dichloropropene				0.3	0.2	30+		0.2+	B2	0.5		
Dieldrin				0.05	.002	0.5+		0.002+	B2		LOQ- (0.05)	
Diethylphthalate (PAE)				800			5000+		D			
Diisopropylmethyl- phosphonate				80		8,000+	600+		D			
Dimethoate				0.2							140	
Dimethrin				300		10,000+	2,000+		D			
Dimethylaniline				20	0.05				C			
2,4-Dimethylphenol				200							400 (T&O)	
2,6-Dinitrotoluene				1.0	50 (tg)	400		50 (tg)	B2 (TG)			
1,3 Dinitrobenzene				0.1		40	1		D			
Dinoseb	Current	7	7	1		300+	7+		D			
1,4-Dioxane (p-Dioxane)					7	400+		7+	B2			
Dioxin (2,3,7,8-TCDD)	Current	3E-5	0	1E-6	2E-7	1E-4		2E-7+	B2			

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 Oral Referenced Doses (RfD) are in micrograms per kilogram per day (µg/kg-d), 10<sup>-6</sup> risk levels are in micrograms per liter.  
 tg - technical grade dinitrotoluene only

ORGANIC Chemicals	Standard	EPA		IRIS <sup>-6</sup>		Health Advisories			Wt. of Evid.	California		Arizona MCL
		MCL	MCLG	Rfd µg/kg-d	10 <sup>-6</sup> Risk	Acute 10 Day	Chronic(lifetime) Non-Cancer	Cancer		MCL	Action Level	
Diphenamid(e)				30		300+	200+		D		40	
Di(ethylhexyl)- phthalate (PAE) (Phthalates)	Current	6	0	20	3			3+	B2	4		
Diquat	Current	20	20	2.2			20+		D			
Disulfoton				0.04		10+	0.3+		E			
Diuron				2		1,000+	10+		D			
Endothall	Current	100	100	20		800+	100+		D			
Endrin	Current	2	2	0.3		20+	2+		D	.2		0.2
Epichlorohydrin	Current	TT	0	2	4	100+		4	B2			
hion				0.5							35	
Ethylbenzene	Current Proposed secondary	700 30	700	100		3,000+	700+		D	680		
Ethylene Dibromide (dibromoethane) (EDB)	Current	0.05	0		4E-4	8		0.0004	B2	0.02		(HI.04)
Ethylene Glycol				2,000		6,000+	7,000+		D			
Ethylene Thiourea (ETU)				0.08	0.3	300+		0.3	B2			
Fenamiphos				0.25		9+	2+		D			

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Oral Referenced Doses (Rfd) are in micrograms per kilogram per day (µg/kg-d), 10<sup>-6</sup> risk levels are in micrograms per liter.

TT - Treatment technique in lieu of numeric MCL

HI - State of Hawaii MCL



ORGANIC Chemicals	Standard	EPA		IRIS -6		Health Advisories			Wt. of Evid.	California		Arizona MCL
		MCL	MCLG	RfD µg/kg-d	10 <sup>-6</sup> Risk	Acute 10 Day	Chronic(lifetime) Non-Cancer	Cancer		MCL	Action Level	
Fluometuron				13		2,000+	90+		D			
Fluorotrichloro- methane				300		7,000+	2,000+		D			
Folpet				100					B2			
Fonofos				2		20+	10+		D			
Formaldehyde				150		5,000+	1,000+		B1		30	
Glycidaldehyde				4					B2			
Glyphosate	Current	700	700	100		20,000+	700+		D	700		
HMX				50		5,000+	400+		D			
Heptachlor	Current	0.4	0	0.5	.008	10+		0.008+	B2	0.01		
Heptachlor epoxide	Current	0.2	0	0.013	.004			0.004	B2	0.01		
Hexachlorobenzene (Perchlorobenzene) (HCB)	Current	1	0	0.8	0.02	50+		0.02+	B2			
Hexachlorobutadiene				2		300+	1+		C			
Hexachlorocyclo- pentadiene (HEX)	Current Proposed secondary 8	50	50	7					D			
n-Hexane						4,000+			D			

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 Oral Referenced Doses (RfD) are in micrograms per kilogram per day (µg/kg-d), 10<sup>-6</sup> risk levels are in micrograms per liter.

ORGANIC Chemicals	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California		Arizona MCL
		MCL	MCLG	RfD µg/kg-d	10 <sup>-6</sup> Risk	Acute 10 Day	Chronic(Lifetime) Non-Cancer	Cancer		MCL	Action Level	
Hexazinone				33		3,000+	200+		D			
Isophorone				200		15,000+	100+		C			
Lindane (gamma-HCH) (gamma-BHC)	Current	0.2	0.2	0.3		1,000+	0.2+	0.03	C	4		
Linuron				2					C			
MCPA				1.5		100+	11+		E			
Malathion				20		200+	200+		D		160	
Maleic Hydrazide				500		10,000+	4,000+		D			
Cresol(p)				5					C			
terphos				0.3								
Methomyl (Lannate)				25		300+	200+		D			
Methoxychlor	Current	40	40	5		50	40		D	100		
Methylene Chloride (Dichloromethane)	Current	5	0	60	5	2,000+		5+	B2		40	
Methyl ethyl ketone (MEK, 2-Butanone)				600					D			
Methyl Parathion				.25		300+	2+		D		30	

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 Oral Referenced Doses (RfD) are in micrograms per kilogram per day (µg/kg-d), 10<sup>-6</sup> risk levels are in micrograms per liter.

ORGANIC Chemicals	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California		Arizona
		MCL	MCLG	RfD µg/kg-d	10 <sup>-6</sup> Risk	Acute 10 Day	Chronic(lifetime) Non-Cancer	Cancer		MCL	Action Level	
Methyl t-butyl ether				5		3,000+	40+		D			
Metolachlor				150		2,000+	100+		C			
Metribuzin				25		5,000+	200+		D			
Mirex				0.2	.02				B2			
Molinate				2						20		
Naphthalene				4		500+	20+		D			
Nitroguanidine				100		10,000+	700+		D			
Oxamyl (Vydate)	Current	200	200	25		200+	200+		E			
Paraquat				4.5		100+	30+		E			
Parathion (Ethyl Parathion)				6					C		30	
Pentachloronitro- benzene (Terrachlor)				3	0.1				C		0.9	
Pentachlorophenol	Current	1	0	30	0.3	300+		0.3	B2		30	
Phenol				600		6,000+	4,000+		D		5(T&O) Cl2Syst	
Phthalates (di(ethylhexyl)- phthalate)	Current	6	0	20	3			3+	B2	4		

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 Oral Referenced Doses (RfD) are in micrograms per kilogram per day (µg/kg-d), 10<sup>-6</sup> risk levels are in micrograms per liter.

ORGANIC Chemicals	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California		Arizona MCL
		MCL	MCLG	RfD µg/kg-d	10 <sup>-6</sup> Risk	Acute 10 Day	Chronic Non-Cancer	(lifetime) Cancer		MCL	Action Level	
Picloram	Current	500	500	70		20,000+	500+		D			
Polychlorinated Biphenyls (PCBs)	Current	0.5	0		.005			0.005	B2			
Polynuclear Aromatic Hydrocarbons (PAHs) (benzo(a)pyrene)	Current	0.2	0						B2			
Prometon				15		200+	100+		D			
Pronamide				75		800+	50+		C			
Propachlor				13		500+	90+		D			
Propazine				20		1,000+	10+		C			
Propham				20		5,000+	100+		D			
DX				3	0.3	100+	2+	.3	C			
Simazine	Current	4	4	5		70	4+		C	10		
Styrene	Current Proposed secondary	100 10	100	200		2,000+	100+		C			
Tebutiuron				70		3,000+	500+		D			
Terbacil				13		300+	90+		E			
Terbufos				.13		5+	0.9+		D			

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 Oral Referenced Doses (RfD) are in micrograms per kilogram per day (µg/kg-d), 10<sup>-6</sup> risk levels are in micrograms per liter.

ORGANIC Chemicals	Standard	EPA		IRIS -6		Health Advisories			Wt. of Evid.	California		Arizona MCL
		MCL	MCLG	Rfd µg/kg-d	10 <sup>-6</sup> Risk	Acute 10 Day	Chronic(Lifetime) Non-Cancer	Cancer		MCL	Action Level	
Tetrachlor (pentachloro- nitrobenzene)				3	0.1				C		0.9	
1,1,1,2-Tetrachloro- ethane				30	1	2,000+	70+	1+	C			
1,1,2,2-Tetrachloro- ethane									C	1		
Tetrachloroethylene (Perchloroethylene)	Current	5	0	10	0.7	2,000+		0.7+	B2	5		
2,3,7,8-Tetrachloro- dibenzo-p-dioxin (Dioxin)	Current	3E-5	0	1E-6	2E-7	1E-4+		2E-7+	B2			
Thiobencarb										70		
Toluene	Current Proposed secondary	1,000 40	1,000	200		2,000+	1,000+		D		100	
Toxaphene	Current	3	0	100	0.03	40+		0.03+	B2	5		5
Tribromomethane (Bromoform)(THM)	Current	100 a		20	4	2,000+		4	B2			
1,1,2-Trichloro-1,2, 2-Trifluoroethane (Freon 113)										1200		
Trichloroacetic acid				40		2000	1000		C			
1,2,4-Trichloro- benzene	Current	70	70	10		100+	70		D			
1,3,5-Trichloro- benzene				6		600+	40+		D			
1,1,1-Trichloro- ethane	Current	200	200	35		40,000+	200+		D	200		200

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Oral Referenced Doses (Rfd) are in micrograms per kilogram per day (µg/kg-d), 10<sup>-6</sup> risk levels are in micrograms per liter.  
 a - Total Trihalomethanes MCL includes 4 compounds: chloroform, bromodichloromethane, dibromochloromethane, bromoform

ORGANIC Chemicals	Standard	EPA		IRIS <sup>-6</sup>		Health Advisories			Wt. of Evid.	California		Arizona MCL
		MCL	MCLG	RfD µg/kg-d	10 <sup>-6</sup> Risk	Acute 10 Day	Chronic(lifetime) Non-Cancer	Cancer		MCL	Action Level	
1,1,2-Trichloroethane	Current	5	3	4		400+	3+		C	32		
Trichloroethylene	Current	5	0		3			3	B2	5		5
Trichlorofluoromethane (Freon 11)				700						150	150	
2,4,6-Trichlorophenol					3			3	B2			
2,4,5,-Trichlorophenoxyacetic acid (2,4,5-T)				10		800+	70+		D			
2,4,5 Trichlorophenoxypropionic acid (2,4,5-TP) (Silvex)	Current	50	50	7.5		200+	50+		D	10		10
1,2,3-Trichloropropane				6		600+	40+		B2			(HI .8)
Trifluralin				7.5		80+	5+	5+	C			
Trihalomethanes (THM) (See Chloroform)	Current	100 a							B2	100		
Trinitroglycerol						5	5					
Trinitrotoluene				0.5	1	20	2	1	C			
Trithion											7	
Vinyl Chloride	Current	2	0		.015	3,000+		0.015+	A	0.5		
Xylenes- sum of isomers	Current Proposed secondary	10ppm 20	10ppm	2000		40,000+	10,000+		D	1750		

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Oral Referenced Doses (RfD) are in micrograms per kilogram per day (µg/kg-d), 10<sup>-6</sup> risk levels are in micrograms per liter.

HI - State of Hawaii MCL

a - Total Trihalomethanes MCL includes 4 compounds: chloroform, bromodichloromethane, dibromochloromethane, bromoform

TT - Treatment technique in lieu of numeric MCL

MICROB.-TURBIDITY				IRIS		Health Advisories			Wt.	California		Arizona
Chemicals	Standard	EPA MCL	EPA MCLG	RfD $\mu\text{g}/\text{kg}\cdot\text{d}$	$10^{-6}$ Risk	Acute 10 Day	Chronic (lifetime) Non-Cancer	Cancer	of Evid.	MCL	Action Level	MCL
MICROB.-TURBIDITY												
Giardia Lamblia	Current	TT	0									
Heterotrophic Plate Count	Current	TT $\beta$	NA									
Legionella	Current	TT $\beta$	0									
Total Coliforms	Current	P/A $\alpha\alpha$	0									
Turbidity	Current	1/5 NTU	NA									
Viruses	Current	TT $\beta$	0									
WATER QLTY. SECONDARY MAX. CONT. LEV												
Color	Secondary	15 color units										
Corrosivity	Secondary	Noncorrosive										
Foaming Agents	Secondary	500										
Odor (Odor threshold)	Secondary	3.0 OT#										
Total Dissolved Solids (TDS)	Secondary	500 ppm										
pH	Secondary	6.5-8.5										

Values are indicated in micro grams per liter ( $\mu\text{g}/\text{l}$ ) - [ equivalent to parts per billion (ppb) ] unless otherwise stated

Oral Referenced Doses (RfD) are in micrograms per kilogram per day ( $\mu\text{g}/\text{kg}\cdot\text{d}$ ),  $10^{-6}$  risk levels are in micrograms per liter.

TT - Treatment technique in lieu of numeric MCL

$\beta$  - Surface waters and groundwater under the direct influence of surface water only.

$\alpha\alpha$  - P/A - MCL is based on the presence/absence of total coliforms

$\alpha$  - 1 NTU Monthly average, 5 NTU two-day consecutive average

# - Odor Threshold Numbers

TABLE 2

PRIORITY LIST OF CONTAMINANTS WHICH MAY REQUIRE REGULATION  
UNDER THE SDWA (1991 VERSION)

**Microorganisms**

Cryptosporidium

**Inorganics**

Aluminum

Boron

Chloramines

Chlorate

Chlorine

Chlorine dioxide

Chlorite

Cyanogen chloride

Hypochlorite ion

Manganese

Molybdenum

Strontium

Vanadium

Zinc

**Pesticides**

Asulan

Bentazon

Bromacil

Cyanazine

Cyromazine

DCPA (and acid metabolites)

Dicamba

Ethylenethiourea

Fomesafen

Latofen/Acifluorfen

Metalaxyl

Methomyl

Metolachlor

Metribuzin

Parathion degradation product  
(4-nitrophenol)

Prometon

2,4,5-T

Thiodicarb

Trifluralin

**Synthetic Organic Chemicals**

Acrylonitrile

Bromobenzene

Bromochloroacetonitrile

Bromodichloromethane

Bromoform

Bromomethane

Chloroethane

Chloroform

Chloromethane

Chloropicrin

o-Chlorotoluene

p-Chlorotoluene

Dibromoacetonitrile

Dibromochloromethane

Dibromomethane

Dichloroacetonitrile

1,3-Dichlorobenzene

Dichlorodifluoromethane

1,1-Dichloroethane

2,2-Dichloropropane

1,3-Dichloropropane

1,1-Dichloropropene

1,3-Dichloropropene

2,4-Dinitrophenol



Synthetic Organic Chemicals (con't)

2,4-Dinitrotoluene	Methyl t-butyl ether
2,6-Dinitrotoluene	Naphthalene
1,2-Diphenylhydrazine	Nitrobenzene
Fluorotrichloromethane	1,1,1,2-Tetrachloroethane
Hexachlorodutadiene	1,1,2,2-Tetrachloroethane
Hexachloroethane	Tetrahydrofuran
Isophorone	Trichloroacetonitrile
Methyl ethyl ketone	1,2,3-Trichloropropane
Methyl isobutyl ketone	

Chlorination/ chloramination byproducts (misc.):  
haloacetic acids, haloketones, chloral hydrate, 3-chloro-4-  
(dichloromethyl)-5-hydroxy-2(5H)-furanone (MX-2), N-  
organochloramines

Ozonation byproducts: aldehydes, epoxides, peroxides,  
nitrosamines, bromate, iodate

## APPENDIX

### DESCRIPTION OF STANDARDS AND ADVISORIES

#### Authority

Under the authority of the Safe Drinking Water Act (SDWA, Public Law 93-523), the USEPA is mandated to establish National Primary Drinking Water Regulations for contaminants occurring in drinking water. Primary NPDWRs are established and enforced to protect the public from adverse health effects resulting from a drinking water contaminant. Included in these regulations are the drinking water standards which set either 1) treatment techniques to control a contaminant, or 2) the Maximum Contaminant Level (MCL) allowable for the contaminant in drinking water. An MCL is set when an appropriate method of detection for the contaminant exists. A treatment technique approach is used when it is not possible to quantify the contaminant at the level necessary to protect public health. Secondary standards are established based on non-health related aesthetic qualities of appearance, taste and odor. These secondary standards are not federally enforceable.

States may choose to accept responsibility (Primacy Status) for the oversight and enforcement of US drinking water regulations. States which have primacy status from USEPA must adopt State drinking water standards that are at least as stringent as federal standards. A state may choose to enforce secondary standards as well as primary standards.

#### USEPA Maximum Contaminant Level Goals (MCLGs)

MCLGs are developed by the Office of Science and Technology in the USEPA Office of Water as a required first step toward promulgation of NPDWRs. MCLGs are non-enforceable health goals which are to be set at levels at which no known or anticipated adverse effects on the health of persons occur, and which allow for an adequate margin of safety. Prior to the SDWA Amendments of 1986, these levels were called Recommended Maximum Contaminant Levels (RMCLs). MCLGs are strictly health-based levels and are derived from relevant toxicological data.

For chemicals that produce adverse health effects and are not believed to be carcinogenic (non-carcinogens), the MCLG is based on the Reference Dose (RfD). A RfD is calculated from toxicological data to represent a contaminant level that should be without risk of adverse health effects even with a lifetime exposure. USEPA assumes that a threshold exists for non-cancer health effects from chemical contaminants, below which the effect will not occur. Thus the MCLG will be a non-zero number. The RfD, which is based on the

total daily amount of contaminant taken up by a person on a body weight basis, is converted to a Drinking Water Equivalent Level (DWEL) concentration and adjusted for the percentage contribution of other sources (relative source contribution, RSC) of the contaminant besides drinking water (air, food, etc) to arrive at the MCLG. This calculation assumes a lifetime consumption of 2 liters of drinking water per day by a 70 kg adult. Unless otherwise noted, the RSC from drinking water for organic and inorganic compounds is respectively 20% and 10%.

USEPA assumes that no threshold exists for cancer and thus, there is no absolutely safe level of contamination. For chemicals that are known (Group A) or probable (Group B) human carcinogens, USEPA policy directs that the MCLG be set at zero, in accordance with a recommendation by the US Congress. For contaminants believed to be possible human carcinogens (Group C), the MCLG may be derived based on relevant non-cancer health effects as described above. In this case, the RfD is divided by an additional uncertainty factor of 10. In some cases, Group C chemicals will have MCLGs set based on calculated maximum lifetime cancer risks of between 1/10,000 and 1/million.

#### **Maximum Contaminant Levels (MCLs)**

MCLs are federally enforceable limits for contaminants in drinking water established as NPDWRs. The MCL for a given contaminant is set as close to the corresponding MCLG as is feasible. "Feasible" is defined in the 1986 SDWA Amendments as "feasible with the use of the best technology, treatment techniques and other means which the Administrator finds, after examination for efficacy under field conditions and not solely under laboratory conditions, are available (taking cost into consideration)." To promulgate a MCL for a contaminant requires that a method of detection for that contaminant is available suitable for the level desired and a Best Available Technology is identified that can feasibly remove the contaminant to the desired level.

#### **Secondary Maximum Contaminant Levels**

Secondary MCLs are established under the SDWA to protect the public welfare. Such regulations apply to contaminants in drinking water that adversely affect its odor, taste or appearance and consequently cause a substantial number of persons to discontinue its use. Secondary MCLs are not based on direct adverse health effects associated with the contaminant, although some contaminants may have both a MCL and a SMCL. SMCLs are considered as desirable goals and are not federally enforceable. However, states may choose to promulgate and enforce SMCLs at the state level.

## Health Advisories

Health Advisories (HAs) for drinking water contaminants are levels considered to be without appreciable health risk for specific durations of exposure. HAs should be considered guidance and are not enforceable drinking water standards. HAs were previously known as Suggested No Adverse Response Levels (SNARLs).

USEPA HAs are developed and published initially as External Review Drafts, and then as a Final Draft. This designation indicates that the HA will be always subject to change as additional information becomes available. HAs are developed for one-day, 10-day, longer-term (approximately 7 years) and lifetime (70 year) exposures based on data describing non-carcinogenic health effects resulting from the contaminant. One-day and 10-day HAs use parameters which reflect exposures and effects for a 10 kg child consuming 1 liter of water per day. Lifetime HAs consider a 70 kg adult consuming 2 liters of water per day. Longer-term HAs can incorporate either child or adult parameters. A relative source contribution from water is also factored into the lifetime HA calculation to account for exposures from other sources (air, food, soil, etc) of the contaminant.

For known or probably human carcinogens, the lifetime HA level is based on an upper-bound excess lifetime cancer risk of 1/million. This means that USEPA considers that the risk from a lifetime consumption of water at the given level is unlikely to be greater than 1/million, is most likely substantially less and may be zero.

## Reference Dose (RfD) and Drinking Water Equivalent Level (DWEL)

The RfD is a daily exposure level which is believed to be without appreciable health risk to humans over a lifetime. The RfD is usually derived from an experimental "no observed adverse effect level" (NOAEL); identified as the highest dose in the most relevant study that did not result in a known adverse effect. The NOAEL is divided by various uncertainty factors to derive the RfD. These uncertainty factors account for the variation in human response, extrapolation to human responses if animal experiments were used, data quality and relevance. The RfD takes the form of dose ingested per unit body weight per day (ug/kg-d).

The DWEL is the conversion of the RfD into an equivalent water concentration. It assumes that a 70 kg adult consumes two liters of water per day and that the total dose to a person results solely from drinking water. It is important to remember that actual exposures in the environment may occur through other routes, such as inhalation or dermal contact, or from other sources, such as from food or soil.

## California Action Levels

California Department of Health Services Action Levels are health-based criteria derived much in the same way as EPA Health Advisories. Specific approaches to determining cancer risks and exposure assumptions may differ in some ways from those used by USEPA. California Action Levels are not enforceable drinking water standards, but are levels at which CA DOHS strongly urges water purveyors to take corrective action to reduce the level of contamination in the water they supply. Action Levels cease to exist when CA State MCLS are promulgated.

## Integrated Risk Information System (IRIS)

IRIS is an EPA catalogue of Agency risk assessment and risk management information for chemical substances. It is available electronically in several formats. The risk assessment information contained in IRIS, unless specifically noted, has been reviewed and agreed upon by intra-agency work groups and represents Agency consensus. Chemical contaminants listed in IRIS may have descriptions of relevant toxicological experiments and risk assessment approaches used in the determination of RfDs, cancer risks and health advisories. Extensive bibliographies are included. Regulations and regulatory status for different media may be presented.

## REFERENCES

EPA MCLs: Code of Federal Regulations, Title 40, Part 141.

EPA Final Rule and Proposed Rule, Fluoride: Federal Register Vol. 50, No. 220, November 14, 1985.

EPA Final Rule and Proposed Rule, Volatile Synthetic Organic Chemicals: Federal Register Vol. 50, No. 219, November 13, 1985.

EPA Final Rule, Fluoride National Primary and Secondary Drinking Water Regulations: Federal Register Vol. 51, No. 63, April 2, 1986.

EPA Final Rule, Volatile Organic Chemicals Drinking Water Regulations: Federal Register Vol. 52, No. 130, July 8, 1987.

EPA Proposed Rule, National Primary and Secondary Drinking Water Regulations; Synthetic Organic Chemicals and Inorganic Chemicals Federal Register, Vol. 55, No. 143, July 25, 1990.

EPA Final Rule, National Primary Drinking Water Regulations; Federal Register, Vol. 56, No. 20, January 30, 1991.

EPA Final Rule, Maximum Contaminant Level Goals and National Primary Drinking Water Regulations for Lead and Copper; Federal Register, Vol. 56, No. 110, June 7, 1991.

EPA Final Rule, National Primary Drinking Water Regulations; Federal Register, Vol. 56, No. 126, July 1, 1991.

NAS Health Advisories: Drinking Water and Health, National Academy Press, Volumes 1 (1977), 3 (1980), 4 (1982), 5 (1983), 6 (1986), and 7 (1988).

EPA Health Advisories: are from the EPA Office of Drinking Water. These are published and are available from the National Technical Information Service (NTIS).

IRIS, Integrated Risk Information System, EPA, Office of Health and Environmental Assessment, Office of Research and Development, Washington, D.C. 20460.

Arizona Department of Health Services, Office of Risk Assessment and Investigation, 3008 N. 3rd Street, Phoenix, Arizona 85012.

California Department of Health Services, Office of Drinking Water, 2151 Berkeley Way, Berkeley, CA 94704.

**APPENDIX B**

**TABLE B-1**  
**AVAILABILITY OF GROUNDWATER QUALITY DATA FOR WELLS**  
**IN THE WEST SAN JACINTO AREA**

State Well Number	Period of Record	Types of Analysis				
		TDS	NO3	Gen Min	Other	Other Type
T2S/3W 31N1	1955 - 1983			21	4	metals, organics
31R1	1957 - 1963			12		
_36E1	1949			1		
T2S/4W 36R1	1956 - 1960			2		
T3S/2W 7R	1985 - 1993	1	1	1		
7P1	1953 - 1967			29		
_8E1	1973			1		
18R1	1963 - 1973			3		
18R2	1973 - 1992			2		
21A1	1969			1		
21A2	1973			1		
21B1	1963			1		
21C1	1949			1		
26L1	1973			1		
26M1	1963 - 1973			3		
27G1	1963 - 1993	1	1	4		
28L	1992	1	1			
28Q1	1975 - 1992	1	1	2		
29R1	1952			1		
30C1	1963			1		
32C1	1967			1		
32G1	1959 - 1964			2		
32R1	1963 - 1965			2		
33A	1967			1		
34E	1992	1	1			
34M	1967			2		
34Q	1967			1		
34Q1	1967			1		
35M	1967 - 1992			2		
35M1	1965 - 1967			2		
35Q2	1973			2		
32E	1985			1		
32D1	1985			1		
T3S/3W 2H1						
2L1	1973			1		
2L2	1973 - 1991	2	2	2	2	metals, pesticides
6D	1970 - 1985			6		
6D2	1991			2	2	metals
6M1	1967 - 1970			2		
6N3	1967 - 1983			6	1	metals
7F1	1968			1		
7Q1	1977	1				
12K1	1973 - 1991	1		10		



**TABLE B-1 (Continued)**  
**AVAILABILITY OF GROUNDWATER QUALITY DATA FOR WELLS**  
**IN THE WEST SAN JACINTO AREA**

State Well Number	Period of Record	Types of Analysis				
		TDS	NO3	Gen Min	Other	Other Type
18A1	1977			1		
20A	1958 - 1960			2		
20G2	1977	1				
21A1	1977	1				
21A2	1965 - 1977			3		
21C	1958			1		
21C1	1950 - 1977	1		5		
22D1	1960 - 1976			9		
22D	1977	1				
29E1	1958 - 1978	1		21		
29M1	1953 - 1983			24		
30H1	1977	1		1		
30J1	1977	1		1		
30Q1	1977	1		1		
31B1	1993	1	1			
32M1	1958 - 1959			1		
T3S/4W1J1	1974 - 1982			5		
4W10	1981 - 1983			3		
4W10	1981 - 1983				3	metals
24C1	1976 - 1982			2		
24D1	1976 - 1983			3		
24D2	1976 - 1983			3	1	pesticides
T4S/2W 2C	1953 - 1973			6		
2D1	1963 - 1967			2		
2D2	1965			1		
2K1	1973			1		
2N2	1949			1		
3P	1967			1		
7J	1991	1	1			
7P	1992	1	1			
7Q	1991	1	1			
8B	1991	1	1			
8E1	1967			1		
8G	1993	1	1			
8Q	1967			1		
8R	1967 1993		1	1		
8K	1993		1			
8Q	1993		1			
9M1	1973 - 1979			8		
10A	1993	1	1			
10A1	1975 - 1993	1	1	1		
10B1	1975			1		

**TABLE B-1 (Continued)**  
**AVAILABILITY OF GROUNDWATER QUALITY DATA FOR WELLS**  
**IN THE WEST SAN JACINTO AREA**

State Well Number	Period of Record	Types of Analysis				
		TDS	NO3	Gen Min	Other	Other Type
10C1	1963 - 1967			2		
10E	1964 - 1993		1	2		
11B1	1964 - 1974			10		
11B2	1972 - 1974			4		
11C1	1963 - 1979			19		
11C2	1993	1	1			
11D1		1	1			
11E1	1964			1		
11E2	1963 - 1967			3		
11F	1964			1		
11F1	1972			1		
12N	1967			1		
12N1	1958			1		
17D2	1965 1976			10		
18A1	1965 1989		1	18		
18B1	1965 1989			13		
18D	1990	1	1			
18D1	1977	1				
18G1	1987		1			
18G3	1939 1979			13		
24H1	1957 1984		1	13	2	metals
24J1	1972 1973			2		
27H2	1974 1979			9		
36E1	1993	1	1			
36J1	1954 1958			7		
36J2	1963			1		
36M	1985			1		
36N	1983 1991				2	bacteriological
T4S/3W 6A3	1975 - 1981	1		3		
6C	1991			3	1	organics
6C1	1994	1	1			
6C2	1975 - 1977	1		2		
6F1	1977	1		1		
6H1	1970 - 1979			6	2	pesticides
6H2	1973 - 1983			5		
6Q1	1954 - 1993	2	1	32	1	organics
6Q2	1986				2	organics
6Q3	1967 - 1988			15	5	organics,metals radiological
7G2	1953 - 1977	1		1		
7H1	1977	1		1		
7J1	1955 - 1977	1		28		

**TABLE B-1 (Continued)**  
**AVAILABILITY OF GROUNDWATER QUALITY DATA FOR WELLS**  
**IN THE WEST SAN JACINTO AREA**

State Well Number	Period of Record	Types of Analysis				
		TDS	NO3	Gen Min	Other	Other Type
7J2	1993	1	1			
8E1	1969 - 1977	1		2		
8N1	1963			1		
9N2	1966			1		
9N3	1966 - 1977	1		4		
9P	1993	1	1			
10E	1981			2		
10E1	1980 - 1983			2		
10E3	1967			1		
13Q1	1955 - 1969			25		
16B				1		
16C	1985 - 1993			1	1	organics & metals
16N1	1958 - 1977	1		22		
17A1	1959 - 1968			18		
17C1	1954 - 1965			24		
17J1	1956 - 1978			11		
17J3	1977	1		1		
18	1970			1		
18J	1972			1		
18J2	1975 - 1988			7	4	organics & metals
19A1	1953 - 1993	2	1	3		
19A3	1977	1				
20P1	1954			1		
21F	1956 - 1976	1		28		
21D	1958 -			1		
24B	1990		1			
24B1	1963 - 1977	1		1		
24N	1969			1		
24P1	1943 - 1976			29		
25D2	1965 - 1977	1		3		
26J1	1958 - 1973			4		
26K	1989 - 1991	3	5	3		
28C1	1954					
28H1	1965 - 1968			13		
29C3	1977			2		
29G2	1970 - 1977	1		5		
29K1	1963 - 1977	1		2		
29Q	1969			1		
29Q1	1959 - 1969			2		
32B	1965			1		
4S/4W 1A1	1993	1	1			
4S/4W 1G1	1993	2	1			
T5S/1W 30D	1992			1		

**TABLE B-1 (Continued)**  
**AVAILABILITY OF GROUNDWATER QUALITY DATA FOR WELLS**  
**IN THE WEST SAN JACINTO AREA**

State Well Number	Period of Record	Types of Analysis				
		TDS	NO3	Gen Min	Other	Other Type
30D2	1977			1		
30E2	1992			1		
30M1	1957 - 1960			8		
T5S/2W 7E	1990		1			
14R	1980 - 1981			2		
15A1	1958 - 1960			6		
15E1	1953 - 1956			4		
15F1	1963			1		
15G1	1982 - 1985			2		
15H	1982	1	1			
16F	1982			1		
16F1	1993	1	1			
16G	1983			1		
17B	1982 - 1985	2	2	2		
17B	1982			1		
17B1	1969 - 1978			18		
17C	1982			1		
17C1	1953 - 1967			27		
17F	1982 - 1985			2		
19N1	1953 - 1979			49		
21M2	1993	1				
2.20E+03	1993	1				
23J	1972			1		
23P1	1989				4	bacteriological
23P1	1989		2			
23Q	1986			1		
23R	1989				3	bacteriological
23R	1986			1		
23R1	1973			1		
24B	1981			1		
24B1	1993	1	1			
25C	1979			1		
25C1	1965 - 1977			3		
25E1	1959 - 1963			2		
25J	1991	1	1			
26B	1987			1		
26G1	1968			1		
26G2	1957			1		
26H2	1963			1		
26H3	1964			1		
26L1	1963			2		
27N1	1988		1	1	1	bacteriological
30D	1991			1	1	radiological
30J1	1975			1		
31N1	1975			1		

**TABLE B-1 (Continued)**  
**AVAILABILITY OF GROUNDWATER QUALITY DATA FOR WELLS**  
**IN THE WEST SAN JACINTO AREA**

State Well Number	Period of Record	Types of Analysis				
		TDS	NO3	Gen Min	Other	Other Type
31R	1987			1		
31R	1987				1	metals
33E	1981	1				
35A	1991			1		
35A1	1993	1				
35B1	1969 - 1993	1		1		
35D2	1993	1	1			
36D	1991			3		
36D4	1993		1			
TSS/3W 2Q1	1993	1	1			
3Q2	1975			1		
3R1	1963 - 1968			3		
3R1	1977	1				
3R2	1977	1				
7B1	1975			1		
10H1	1975			1		
11M1	1953			1		
11M2	1955 - 1981			23		
13A	1977 - 1981			2		
13A1	1993	1	1			
13H1	1993	1	1			
14P1	1985			1		
14P1	1977	1				
14P1	1975			1		
15H1	1993	1	1			
16D1	1993	1	1			
16F1	1993	1	1			
16P1	1955 - 1958			6		
16P2	1977 - 1981			2		
17R1	1991			1		
21C1	1975			1		
21C1	1977	1				
21D1	1962 - 1971			17		
21D2	1960 - 1975			16		
21D2	1977	1				
21K	1993	1	1			
24C1	1993	1	1			
27L1	1975			1		
28M1	1993	1	1			
28M2	1993	1	1			
28M3	1993	1	1			
28M4	1993	1	1			
29H1	1955 - 1959			8		
29Q1	1958			1		
32G	1976			1		

**TABLE B-1 (Continued)**  
**AVAILABILITY OF GROUNDWATER QUALITY DATA FOR WELLS**  
**IN THE WEST SAN JACINTO AREA**

State Well Number	Period of Record	Types of Analysis				
		TDS	NO3	Gen Min	Other	Other Type
33R2	1991			1		
33R2	1991				1	organics
35N	1992			1		
35P1	1956 - 1968			4		
35Q	1977 - 1993	2	1			
36D1	1963 - 1968			4		
36K1	1962 - 1963			2		
36N	1977	1				
36N1	1991			1		
36P	1992			5		
36P1	1953 - 1956			3		
36Q1	1958 - 1965			11		
T6S/2W 1A2	1976			1		
2G1	1963			1		
2N1	1963			1		
3R2	1962 - 1970			5		
4R1	1988			1		
4R2	1988		1			
7A	1988		1			
7A1	1993	1	1			
7N	1975			1		
7R2	1993	1	1			
T6S/3W 1	1991			4		
1D1	1965			1		
1D2	1975			1		
1E1	1977	1				
1J1	1975			1		
1J2	1993	1	1			
2A	1993	1	1			
2F1	1963 - 1968			4		
2C1	1975			1		
2D	1993	1	1			
2E	1993	1	1			
2G	1991	2	2	5	2	organics
2H	1991	1	1	2	2	organics
3C	1967			1		
3C1	1975 - 1991			3		
3C2	1975			1		
3H2	1977 - 1991	1		1		
3L1	1993	1	1			
3L2	1993	1	1			
4K1	1953 - 1963			2		
9B1	1975			1		
Totals		106	79	1015	48	

**TABLE B-1 (Continued)**  
**AVAILABILITY OF GROUNDWATER QUALITY DATA FOR WELLS**  
**IN THE WEST SAN JACINTO AREA**

	Statistics			
	Total	Average	Maximum	Minimum
Length of Record (years)		5.18	40	1
Number of Samples per Well		4.14	49	1
Samples per Year		1	11	0
Year of Last Sample		1979	1994	1949
Total Number of Wells with Data	301			
Fraction of Wells with Only One Sample	63%			

# F

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## Appendix F: Hemet/San Jacinto Groundwater Management Area Water Management Plan



# Hemet/San Jacinto Groundwater Management Area



## Water Management Plan

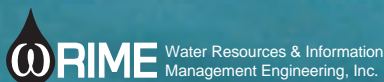
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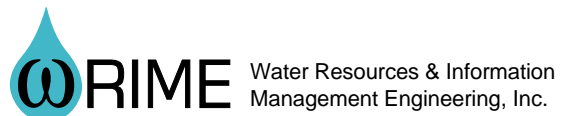


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November 7, 2007



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# Hemet/San Jacinto Groundwater Management Area Water Management Plan

November 7, 2007

**Prepared for:**

Eastern Municipal Water District  
Lake Hemet Municipal Water District  
City of Hemet  
City of San Jacinto

**in coordination with**  
California Department of Water Resources

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## SELECTED ACRONYMS, ABBREVIATIONS, AND TERMINOLOGY

Advisor	independent engineering firm or a qualified individual
AF	acre-foot
AFY	acre-feet per year
Agreement	Settlement Agreement
Association	Hemet/San Jacinto Groundwater Association
CAM	Consultants-Attorneys-Managers
CEQA	California Environmental Quality Act
cfs	cubic feet per second
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EMWD	Eastern Municipal Water District
FMWC	Fruitvale Mutual Water Company
GIS	Geographic Information System
Hemet North	Hemet North portion of the Lakeview/Hemet North
IRRP	Integrated Recharge and Recovery Program
JPA	Joint Powers Authority
JUDGMENT	Stipulated Judgment
Legal Counsel	independent attorney or legal firm
LHMWD	Lake Hemet Municipal Water District
Management Area	Hemet/San Jacinto Groundwater Management Area
MGD	million gallons per day
MOU	Memorandum of Understanding
MWD	Metropolitan Water District of Southern California
PC	Policy Committee
Plan	Hemet/San Jacinto Water Management Plan
Plan Participants	EMWD, LHMWD, Private Water Producers, and Cities of Hemet and San Jacinto (collectively)
Principles	Principles for Water Management
Private Water Producers	Property owners who are pumping groundwater pursuant to overlying water rights
Public Agencies	EMWD, LHMWD, and Cities of Hemet and San Jacinto (collectively)
RCFC&WCD	Riverside County Flood Control and Water Conservation District
RWQCB	Santa Ana Regional Water Quality Control Board
RWRD	Regional Water Resources Database
S.A.A.	Settlement Agreement Approval
S.J.A.	Stipulated Judgment Approval
Soboba Tribe	Soboba Band of Luiseno Indians
TC	Technical Committee
TDS	Total Dissolved Solids

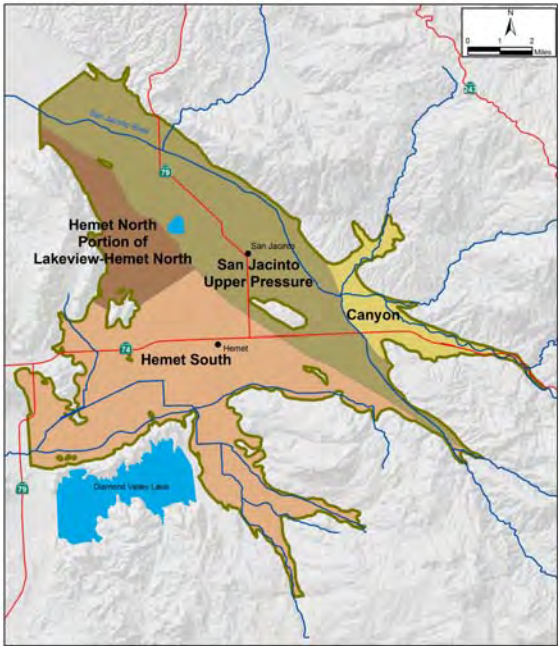
TM	Technical Memorandum
TMDL	Total Maximum Daily Load
Upper Pressure	San Jacinto - Upper Pressure Management Zone
USGS	United States Geological Survey
UWMP	Urban Water Management Plan
Watermaster	Watermaster Governing Board
WRIME	Water Resources & Information Management Engineering, Inc.

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**BACKGROUND AND GOALS**

The stakeholders in the Hemet/San Jacinto Groundwater Management Area (Figure ES.1) have developed the Hemet/San Jacinto Water Management Plan (Plan) to provide a foundation that guides and supports responsible water management into the future. The Participants in the Plan are Eastern Municipal Water District (EMWD), Lake Hemet Municipal Water District (LHMWD), Cities of Hemet and San Jacinto (Public Agencies), and Private Water Producers.



**Figure ES.1 Hemet/San Jacinto Groundwater Management Area and Management Zones**

Private Water Producers are those property owners who are pumping groundwater pursuant to overlying water rights, typically for agricultural or domestic uses. Private Water Producers may elect two levels of participation in the Plan, with varying levels of benefits and responsibilities, or may elect not to participate. The details on this matter are described in Section 2 of the Plan document.

The Plan, adopted by the governing bodies of the Plan Participants, has eight primary goals:

- Address pumping overdraft and declining groundwater levels,
- Provide for Soboba Tribe prior and paramount water rights,

- Ensure reliable water supply,
- Provide for planned urban growth,
- Protect and enhance water quality,
- Develop cost-effective water supply,
- Provide adequate monitoring for water supply and water quality, and
- Supersede the Fruitvale judgment and agreement.

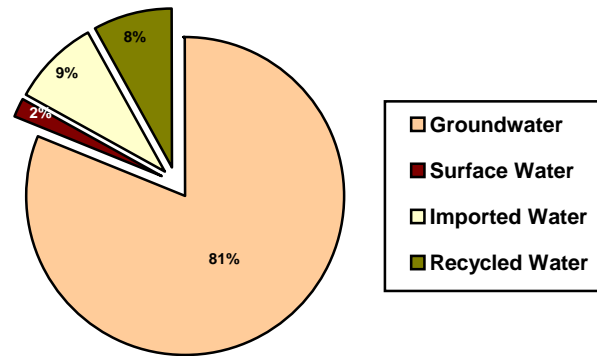
## **GROUNDWATER AS A CORNERSTONE FOR WATER MANAGEMENT**

The goals of the Plan are interrelated and begin with maintaining groundwater as a high-quality, low-cost, flexible source of water. Efforts are needed to make this happen, as historical groundwater pumping in excess of the Safe Yield of the groundwater basin has resulted in decreasing trends in water levels. In addition, historical land and water use practices for agricultural irrigation and dairy industry waste have raised the levels of nitrates and total dissolved solids in groundwater. Safe Yield, the long-term average quantity of water that can be pumped without causing undesirable results, has been estimated at 40,000 to 45,000 AFY, while average annual production exceeds this amount by approximately 10,000 to 15,000 AFY. The 10,000 to 15,000 AFY difference between the long-term average annual groundwater production and Safe Yield is known as overdraft, which can be responsible for creating undesirable conditions in the basin, including degradation of groundwater quality. The Plan assumes a pragmatic and economic approach in setting the target to reduce overdraft, and assumes an overdraft of 10,000 AFY. This will allow the Plan Participants and the Watermaster to initiate and adopt plans and policies to eliminate overdraft with implementation of economically feasible and cost-effective projects. The Plan intends to stabilize or reverse the decreasing trend in water levels through reducing groundwater production to a level that brings the basin production within the Safe Yield of the Management Area. Higher water levels will increase water in storage, decrease energy costs for pumping, and inhibit the migration of poor quality groundwater from surrounding basins, helping to protect groundwater quality in the Management Area.

## **INTEGRATION OF GROUNDWATER WITH OTHER WATER SOURCES AND DEMAND MANAGEMENT TO MEET FUTURE WATER NEEDS**

The Plan Participants have several options available to increase water supply and reliability in the Management Area. Water used in the Management Area for agricultural and domestic use comes from groundwater, surface water, imports, and recycled water. As shown on Figure ES.2, most of this water has historically been from groundwater, based on 2004 data. This allows significant opportunities for underutilized sources, particularly recycled water and

winter-time imported water, to replace or augment groundwater production. The regional cooperation developed over the years is also of importance as the supply mix varies between the different water users in the Management Area; by cooperating, the water users can fully utilize their available water resources.



**Figure ES.2 Components of Management Area Water Supply**

The high-quality groundwater basin also plays an important role in future water availability. Historical declines in groundwater levels are a concern and a major impetus for the development of this Plan. However, even the dewatered portion of the groundwater basin is a significant asset and allows for the full utilization of the available water supplies mentioned above. The new water supplies can be introduced into the system filling the empty portions of the groundwater basin by either substitution for pumping groundwater (in-lieu recharge) or by placing the water in the groundwater system through seepage from specially designed ponds or through injection from wells (direct recharge). Both these methods benefit the Management Area groundwater basin, which is composed of materials that can store large quantities of water and holds high quality groundwater that can be pumped for usage at a later time. A complex system of faults and other geologic features separate the groundwater system into four Management Zones (see Figure ES.1), which require some degree of individual attention in planning and designing recharge and extraction projects, based on each Management Zone's unique attributes.

The numerous water supply opportunities along with water conservation by both the Public Agencies and Private Water Producers will be utilized to meet the current and future water needs of the Management Area. Based on the latest data and information on land and water practices, general plans, urban water management plans, and other specific plans, water demand in the Management Area is projected to increase over the course of next 15-20 years (Figure ES.3). Based on these projections, there will also be a shift from agricultural water use

to urban water use, resulting in more stringent water quality requirements to meet drinking water standards.

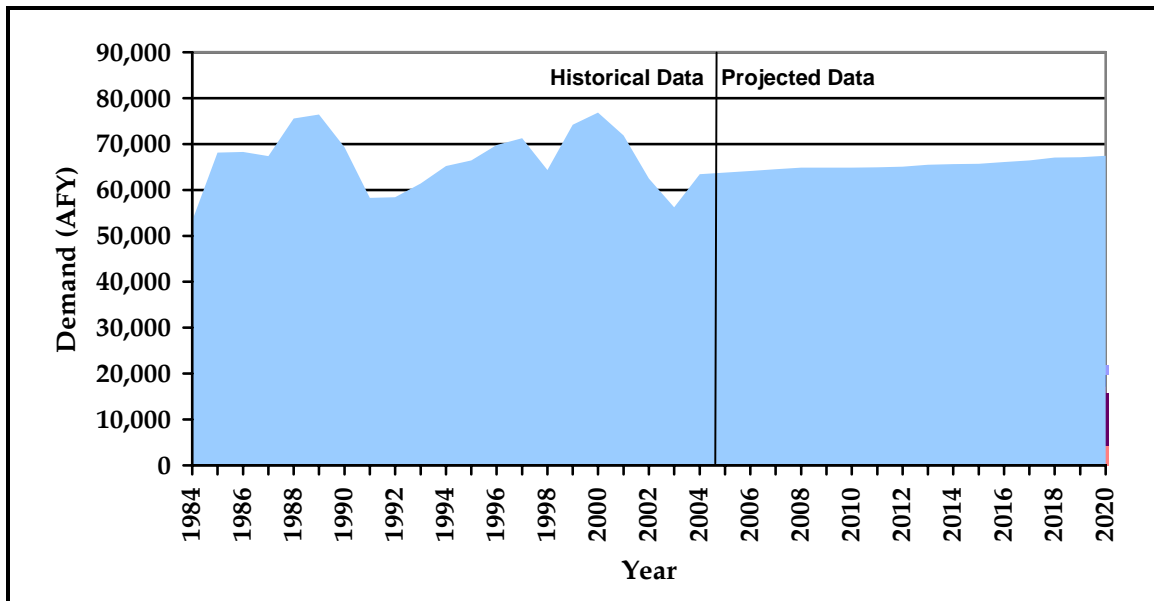


Figure ES.3 Historical and Projected Water Demand

## PHYSICAL SOLUTION IS THE BASIS OF WATER SUPPLY PROJECT IN THE MANAGEMENT AREA

As described in the Stipulated Judgment, the Physical Solution is the court decreed method of managing the water supply in the Management Area to maximize the reasonable and beneficial use of the waters, eliminate overdraft, protect the prior rights of the Soboba Tribe, and provide for the substantial enjoyment of all water rights by recognizing their priorities. The Physical Solution consists of numerous water supply and conjunctive use projects, including direct and in-lieu recharge, increased use of recycled water, increased conservation, and improved monitoring. The core project in the Physical Solution is the Hemet/San Jacinto Integrated Recharge and Recovery Program (IRRP). Phase I of the IRRP has been designed, funded, the necessary environmental permits have been acquired, and construction is currently underway. Phase II is in planning stages. The IRRP is a regional recharge and recovery program to meet the following goals:

- Satisfy Prior and Paramount Soboba Tribe water rights;
- Offset the estimated 10,000 AFY overdraft in the Management Area; and
- Provide an additional 15,000 AFY to help meet the projected demand increases.

In addition to IRRP, the Plan identifies other projects that can potentially meet the above goals. These include direct recharge, in-lieu recharge, and recycled water projects.

## A FIRM LEGAL AND INSTITUTIONAL ARRANGEMENT

Development of a comprehensive system of water management begins with the legal and institutional framework. To meet the goal of reducing groundwater production to eliminate overdraft, the Public Agencies agreed upon some basic principles as a basis for allocating Base Production rights. Base Production rights establish the initial amount that each Public Agency would be able to pump without the need to replenish the basin. The Base Production rights are calculated on the basis of actual production by Public Agencies during 1995-99 calendar years, and adjusted for specific historical operational activities, such as:

- Recharge Activities;
- MWD San Jacinto Tunnel Seepage;
- Fruitvale Entitlement Water Sold by EMWD to LHMWD, Hemet, and San Jacinto;
- Stream Diversions;
- Conveyance Water Deliveries; and
- Other Considerations.

The Public Agencies have, therefore, agreed to the following Base Production Rights:

**Table ES.1 Public Agency Base Production Rights**

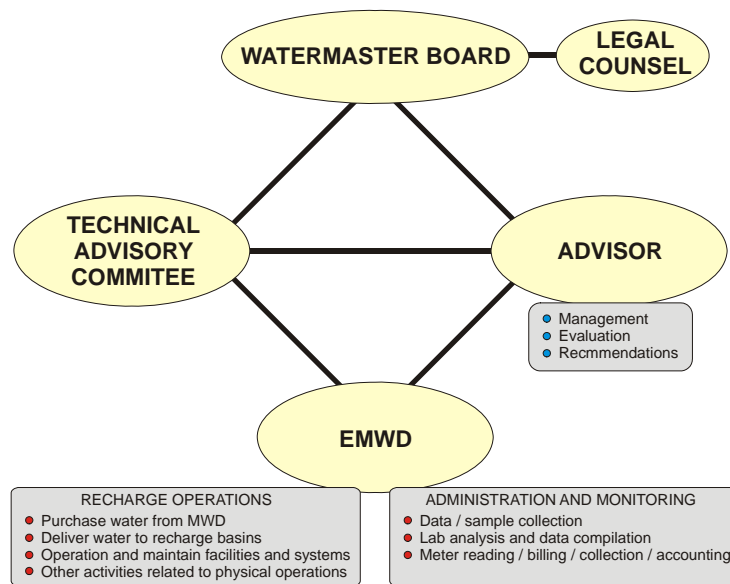
<b>Public Agency</b>	<b>Base Production Rights (AFY)</b>	<b>Base Production Rights (Percent)</b>
EMWD	10,869	33.7
LHMWD	11,063	34.2
City of Hemet	6,320	19.6
City of San Jacinto	4,031	12.5
<b>Total</b>	<b>32,283</b>	<b>100</b>

Surface water rights are not impacted and/or changed by the Plan or any other recent agreements. LHMWD diverts water from the San Jacinto River and its tributaries through its pre-1914 water rights to meet their irrigation and municipal water demands, and EMWD has a license to divert water from the San Jacinto River for recharge purposes.

Soboba Tribal water rights are recognized throughout the Plan, and details of the monetary, water quantity, water quality, and property requirements to meet the obligations set forth in the settlement agreement with the Soboba Tribe are discussed in Section 8 of the Plan.

The Institutional Plan, discussed in Section 9 of the document, assigns the administration,

implementation, and monitoring of the Plan to a Watermaster. The Watermaster will consist of one elected official representing each of the Public Agencies and one representative selected by the participating Private Water Producers. The Watermaster will utilize the counsel of legal advisor, as well as provide technical oversight through an Advisor and Technical Advisory Committee. The Watermaster will utilize services of EMWD for recharge operations and administration and monitoring of the projects and the Plan. The relationships and basic responsibilities of these entities are summarized in Figure ES.4. The Watermaster will also review, approve, and adopt the annual budget, which will be funded by administrative assessments and replenishment assessments. The details of Watermaster administration are discussed in Section 9 of the Plan document.



**Figure ES.4 Plan Institutional Setup**

## IMPLEMENTATION AND PLAN EVOLUTION

The implementation of the Plan, along with any additions or modifications as may become appropriate, and all financial matters relating to Plan activities are the responsibility of the Watermaster. The implementation process can be divided into two processes: implementation and ongoing activities. The schedules for these processes are shown in Table ES.2 and Table ES.3.

**Table ES.2 Implementation Schedule**

<b>Months after Approval of Stipulated Judgment</b>	<b>Implementation Item</b>
Month 1	Determine the method of selection for the Private Pumper representative.
Month 2	Select Public Agency and Private Pumper representatives.
Month 3	Hold first meeting of the Watermaster. Contract with EMWD for Watermaster services.
Month 4	none
Month 5	none
Month 6	Retain legal council and advisor. Prepare and adopt Rules and Regulations for its own operation as well as for the operation of the Water Management Plan and Judgment. Review and reissue agreements and MOUs, as needed.
Upon Settlement Agreement Implementation	Recognize Tribal water rights.

**Table ES.3 Ongoing Schedule**

<b>Timing</b>	<b>Frequency</b>	<b>Activity</b>	<b>Responsibility</b>
January 1	Annual	Propose Monitoring Program.	EMWD
End of January	Annual	Review Monitoring Program.	Advisor
End of February	Annual	Approve budget for Monitoring Program.	Watermaster
1 <sup>st</sup> Quarter	Annual	Advance payment of Administrative Assessments.	Public Agencies
1 <sup>st</sup> Quarter	Annual	Payment of Replenishment Assessments.	Public Agencies
Four months after completion of calendar year monitoring	Annual	Submit Annual Hemet/San Jacinto Water Management Area Report.	EMWD
As needed	As needed	Revise safe yield.	Advisor
TBD	Annual	Prepare, File, and Distribute Watermaster Annual Report.	Watermaster

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## 1.1 PROJECT BACKGROUND

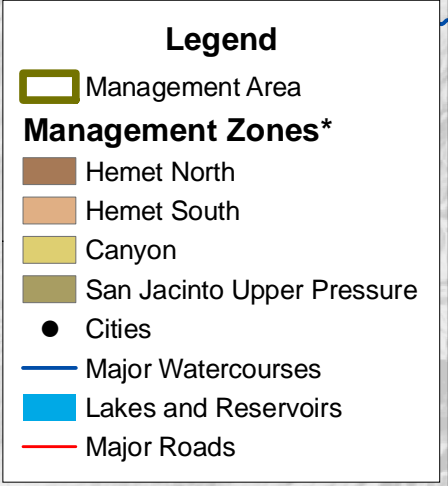
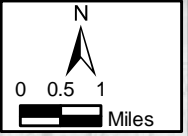
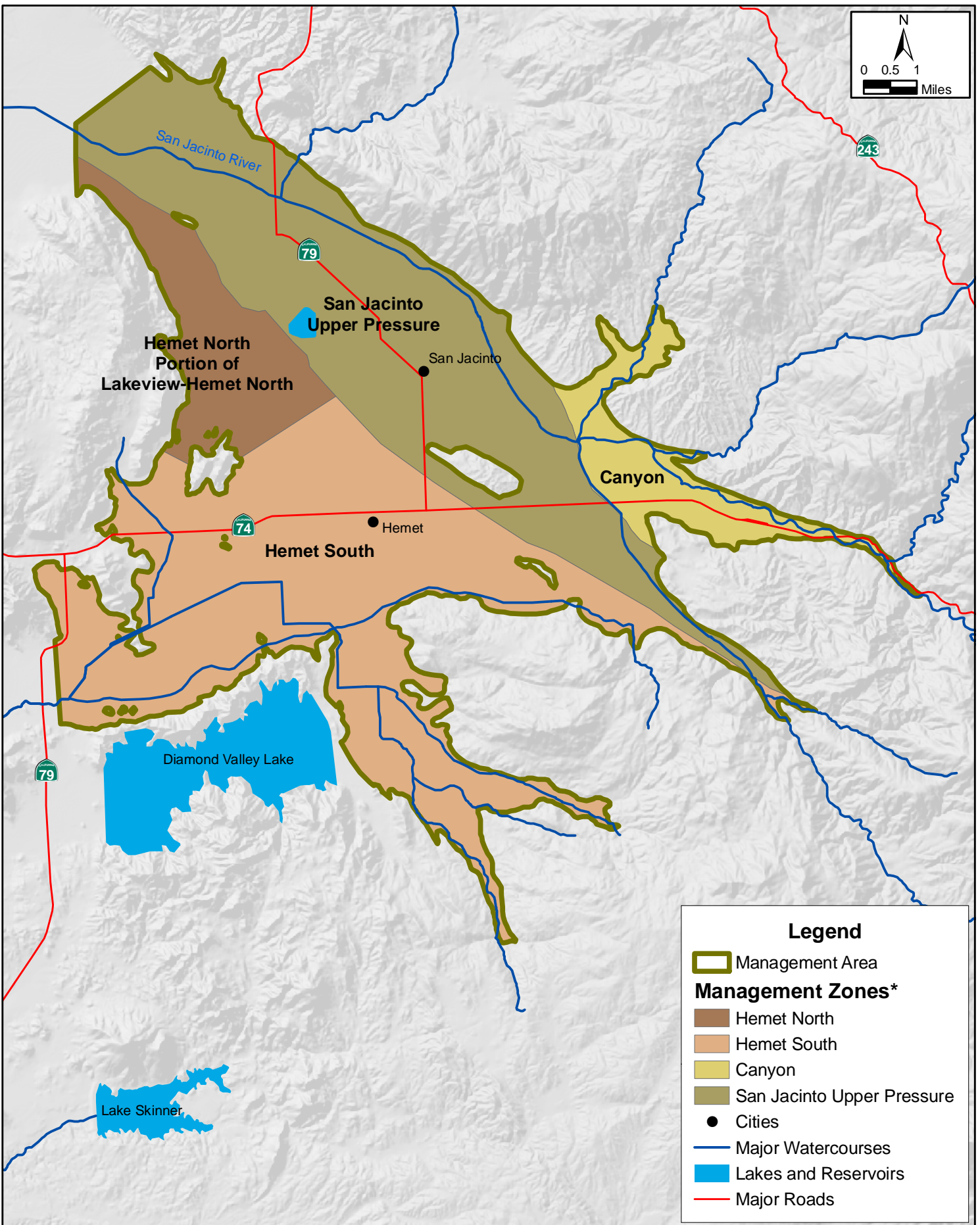
The stakeholders in the Hemet/San Jacinto Groundwater Management Area (Figure 1.1) (Management Area) have developed the Hemet/San Jacinto Water Management Plan (Plan) to provide a foundation that guides and supports responsible water management in the future. The local stakeholders involved in the Plan include Eastern Municipal Water District (EMWD), Lake Hemet Municipal Water District (LHMWD), Cities of Hemet and San Jacinto, and Private Water Producers, collectively referred to as “Plan Participants”. EMWD, LHMWD, and the Cities of Hemet and San Jacinto are collectively referred to as “Public Agencies”.

A Policy Committee (PC) of the Plan Participants developed and adopted the Principles for Water Management (Principles), which guide the management, development, and governance of local water supplies. The adopted Principles, along with a variety of technical analyses, guided development of the Plan. The PC established the Principles based on the historical data on the operation of the groundwater basin; historical and projected water demands; and existing and potential future facilities. The California Department of Water Resources (DWR) provided financial, facilitation, and technical support to the PC.

A Technical Committee (TC) supported the PC and served as the investigative and review body to ensure that proper technical analyses were conducted to provide a defensible technical foundation for the Plan. The TC provided technical input to support decisions by the Public Agencies, Private Water Producers, and other stakeholders. DWR also provided financial and technical support to the TC.

A Consultants-Attorneys-Managers (CAM) committee served as an interim body to develop and review technical, legal, institutional, and financial documents, plans, and standards. The CAM committee discussed the technical/policy/legal issues in anticipation of evolving documents and recommendations for action by the policy makers for the PC.

EMWD and LHMWD have also worked with the Soboba Band of Luiseño Indians (Soboba Tribe) and the Federal Government to develop a Settlement Agreement (Agreement) (Appendix A) that would resolve past issues with respect to Tribal water rights and the water management practices in the basin. The Agreement will be supported by two stipulated



judgments<sup>1</sup> that will provide the legal and technical basis for future water supplies for the Soboba Tribe.

## 1.2 WATER MANAGEMENT PLAN

The Plan, adopted by the governing bodies of the Plan Participants, will provide a roadmap for implementation of the Physical Solution, ensure adequate and reliable sources of future water supply for the Management Area, and meet the Prior and Paramount Soboba Tribe water rights requirements. The Plan may be modified and updated in the future based on, among other things, the availability of new data, updated technical analysis, and changes in the institutional/financial structure of the stakeholders.

## 1.3 PHYSICAL SOLUTION

As described in the Stipulated Judgment (Appendix B), the Physical Solution is the court decreed method of managing the water supply in the Management Area to maximize the reasonable and beneficial use of the waters, eliminate overdraft, protect the prior rights of the Soboba Tribe, and provide for the substantial enjoyment of all water rights by recognizing their priorities. Therefore, the Physical Solution is a group of water supply and conjunctive use projects that would serve this purpose.

The project that is considered to be the core of the Physical Solution is Phase I of the *Hemet/San Jacinto Integrated Recharge and Recovery Program (IRRP)*. Phase I of the IRRP has been designed, funded, and the necessary environmental permits are being acquired. Phase II is in planning stages. The complete project is designed to recharge (replenish) imported water and extract groundwater at a capacity such that the following goals are met:

1. Satisfy Prior and Paramount Soboba Tribe water rights;
2. Offset the estimated 10,000 acre-feet per year (AFY) overdraft in the Management Area; and
3. Provide an additional 15,000 AFY to help meet the projected demand increases.

Major elements of Phase I of the Project are:

- Modifications to Pump Stations (Warren and Commonwealth);
- Construction of Pipelines;

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<sup>1</sup> These judgments are in the case of *Soboba Tribe v. Metropolitan Water District, et. al.*; U.S. District Court in Los Angeles, Case No. 00-04208 GAF, and in a Riverside County Superior Court action, yet to be filed.

- Design and Construction of Recharge Basins;
- Drilling Three Extraction Wells;
- Installation of Pumps and Chlorination Equipment for Three Extraction Wells; and
- Design and Drilling of Three Monitoring Wells.

Additional details on Phase I of the IRRP are presented in Section 3.2.2 of this Plan, and details on Phase II are presented in Section 5.3.1.

In addition to the *San Jacinto River Integrated Recharge and Recovery Project*, there are other projects that the TC has identified as potential projects to be further considered in the future as part of the Physical Solution for the Management Area. These include *direct recharge* and *in-lieu recharge* projects and are described in Section 5.3 of this Plan.

## 1.4 WATER MANAGEMENT PLAN GOALS

The Principles include eight primary goals for the management of water resources in the Management Area. These are:

- Address pumping overdraft and declining groundwater levels,
- Provide for Soboba Tribe prior and paramount water rights,
- Ensure reliable water supply,
- Provide for planned urban growth,
- Protect and enhance water quality,
- Develop cost-effective water supply,
- Provide adequate monitoring for water supply and water quality, and
- Supersede the Fruitvale judgment and agreement.

This section briefly describes the geographic boundaries of the four divisions, or Management Zones, that make up the Management Area and provides a brief history and background on each of the primary stakeholder organizations. Past agreements and related activities leading to the Plan are discussed below, including the role of the state and public participation.

## **2.1 MANAGEMENT AREA**

The Management Area is divided into four Management Zones: The Canyon, San Jacinto Upper Pressure (Upper Pressure), Hemet South, and the Hemet North portion of the Lakeview/Hemet North (Hemet North). The locations of the Management Zones are shown in Figure 1.1. The delineation of the Management Zones is based on the recent update by the Santa Ana Regional Water Quality Control Board (RWQCB) in the *Water Quality Control Plan - Santa Ana River Basin (RWQCB, as amended 2004)*. The RWQCB defined these boundaries on the basis of hydrogeologic conditions to support implementation of specific water quality criteria. Additional descriptions of the basin hydrogeology are provided in Section 4.

## **2.2 MANAGEMENT PLAN PARTICIPANTS**

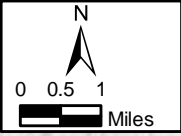
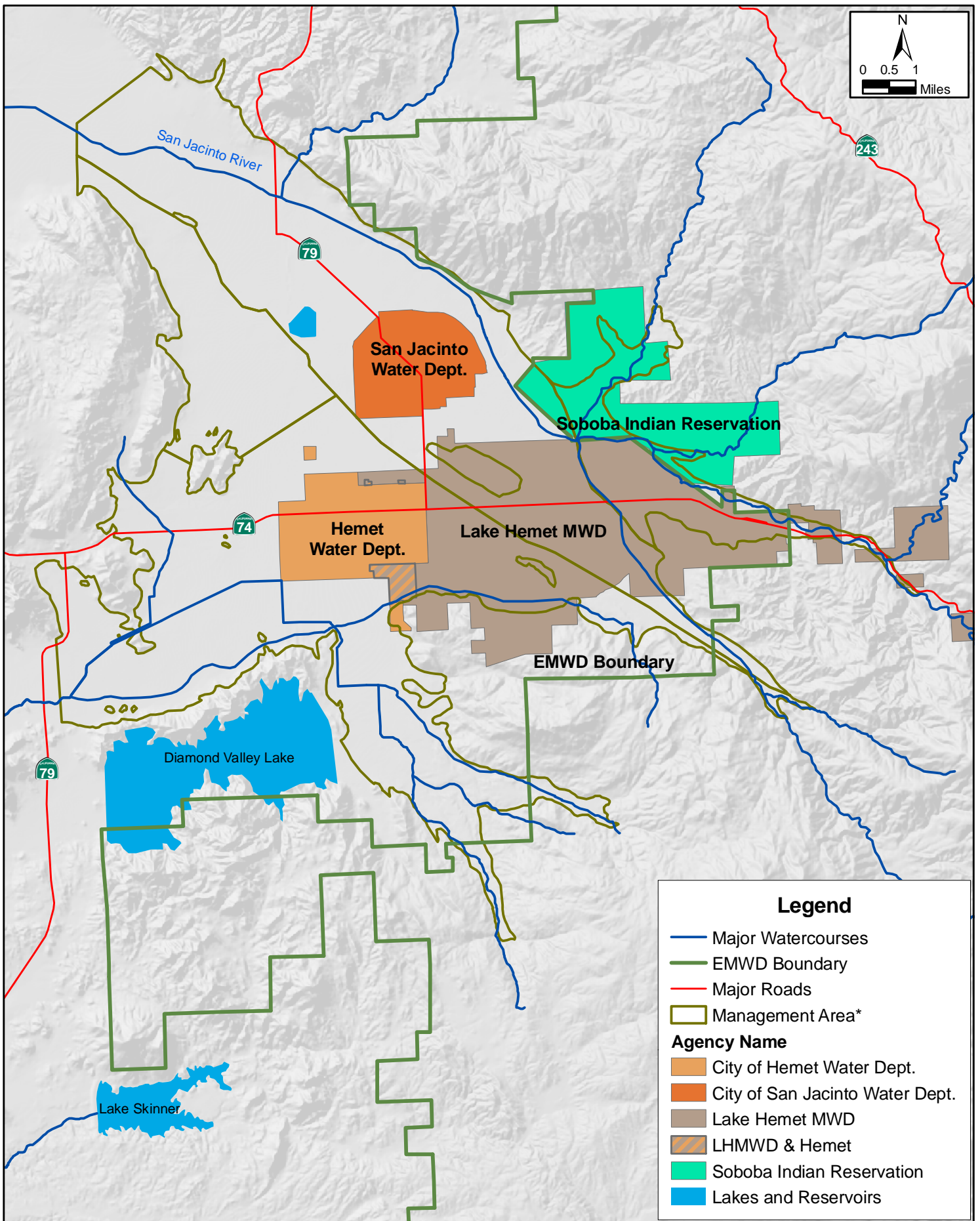
A map of the service areas of the Public Agencies near the Management Area and the Soboba Reservation is provided in Figure 2.1. The Plan Participants are briefly described below.

### **2.2.1 PUBLIC AGENCIES**

EMWD, LHMWD, the City of Hemet, and the City of San Jacinto provide water service in various areas of the Canyon, Upper Pressure, Hemet South, and Hemet North Management Zones. A list of governing bodies is provided in Appendix C. Additionally, there are a number of Private Water Producers extracting groundwater for agricultural and domestic use.

#### **2.2.1.1 Eastern Municipal Water District (EMWD)**

Since its formation in 1950, EMWD has matured from a small agency primarily serving agriculture to one whose major demands come from domestic customers. In 1951, EMWD annexed to the Metropolitan Water District of Southern California (MWD). With the purchase of the Fruitvale Mutual Water Company (FMWC) in 1971, EMWD acquired all of Fruitvale's



**Legend**

- Major Watercourses
- EMWD Boundary
- Major Roads
- Management Area\*

**Agency Name**

- City of Hemet Water Dept.
- City of San Jacinto Water Dept.
- Lake Hemet MWD
- LHMWD & Hemet
- Soboba Indian Reservation
- Lakes and Reservoirs



assets including appropriative, prescriptive, and riparian water rights; water system, wells, well sites, pumps, and storage; real property, easements, rights, and interests; and franchises, permits, and licenses. Over time, the agency has continued to grow. Today, in addition to providing retail service, EMWD provides wholesale water to the seven local water agencies within its service area, including the three remaining Public Agencies in the Management Area.

As of 2005, EMWD serves approximately 113,000 retail connections, including approximately 200 agricultural connections, in a service area with an estimated population of 567,000 within the 555-square-miles, including many areas outside the Management Area. The population within EMWD's boundaries is expected to grow to 830,000 by 2025 (EMWD, 2005a), not including the population of the Rancho California Water District.

In addition to wholesale and retail potable water supply, EMWD's services include wastewater collection and treatment as well as water recycling. The San Jacinto Valley Regional Water Reclamation Facility is an 11 million gallons per day (MGD) plant that provides most of the treatment and water recycling capability for the Management Area.

The five-member Board of Directors comprise the governing body of EMWD and are responsible for setting the policies guiding the operations of the District. Board members are elected to four-year terms by the registered voters from five geographic divisions, which are apportioned on the basis of population distribution. Terms of service are staggered to ensure continuity; public elections are held in at least two divisions every two years. Directors must reside within the division from which they are elected.

The 2004 water use in the portion of the EMWD service area within the Management Area was 13,900 AFY, and it is projected to increase to 21,000 AFY by the year 2020 (EMWD, 2005b).

### **2.2.1.2 Lake Hemet Municipal Water District (LHMWD)**

LHMWD was created in its present form in 1955, but its origins date back to the late 1880s. The service area covers 16,500 acres in the Hemet/San Jacinto Valley area with an additional 2,200 acres in Garner Valley. LHMWD provides water to residential and agricultural customers in its service area. All wastewater collection and treatment within the LHMWD area is performed by EMWD.

LHMWD operates the Hemet Dam and reservoir. The dam, an engineering marvel at the time of its construction in 1895, is a gravity-type, granite dam. LHMWD historically treated a portion of this surface water for domestic use, however since 1998 the surface water treatment plant has been offline and all surface water usage has been for untreated agricultural uses.

LHMWD usually maintains approximately 11.7 million gallons in storage in the Hemet/San Jacinto Valley.

LHMWD customers are represented by a publicly elected board of five directors from five divisions, representing approximately 13,700 domestic and 52 agricultural connections within a 21-square mile service area with a 2005 population of approximately 39,100. The population within the LHMWD service area is expected to grow to approximately 49,500 by 2025 (LHMWD, 2005).

The 2004 water use within the LHMWD service area was estimated to be 16,900 AFY. Due to the expected benefits of more robust conservation efforts, demand is projected to remain fairly constant over the next several years despite an increasing number of service connections. Demand in 2020 is expected to be 16,300 AFY before increasing above the 2004 demand level in years thereafter (LHMWD, 2005).

### **2.2.1.3 The City of Hemet**

The development of Hemet began in 1887 with the formation of the Lake Hemet Water Company and the Hemet Land Company by W. F. Whittier and E. L. Mayberry. The completion of the Hemet Dam in 1895, the formation of Lake Hemet behind the dam, and a water distribution system to and through the valley made future development of the Hemet area possible.

As of 2005, the city had a population of 78,600 with an area of approximately 26 square miles. City of Hemet anticipates a population growth to 154,000 by 2025 (Hemet, 2006).

The City of Hemet was incorporated on January 20, 1910 with a population of 992. The city government is a Council/Manager form of government with seven elected positions, which includes five Council Members, one City Treasurer, and one City Clerk. The Mayor is elected by the Council Members and serves a one-year term. All Council Members serve a four-year term.

The City of Hemet Water Department treats and distributes water to 9,500 connections, covering 5 square miles of the city area. The 2005 population of the Water Department's service area is 20,200 and is projected to grow to 22,300 by 2025. EMWD and LHMWD serve the remaining 21 square miles of the city, with 7,830 and 3,025 connections, respectively. All wastewater collection and treatment within the City of Hemet area is performed by EMWD.

The 2004 water use within the City of Hemet Water service area was estimated to be 6,000 AFY, and is projected to increase to 6,700 AFY by year 2020 (Hemet, 2006).



#### **2.2.1.4 The City of San Jacinto**

Incorporated in 1888, San Jacinto is one of the oldest communities in Riverside County. The city has a Council/Manager form of government with a five member Council that includes a Mayor and Vice Mayor. The City of San Jacinto Water/Wastewater Divisions are responsible for the health and safety of the community through the delivery of the potable water supply and the collection of wastewater. The city wastewater collection system is maintained by this Division while wastewater treatment service is provided by EMWD.

The 2005 population of the city was 34,100; it is anticipated the population of the city will grow to 63,600 by 2025 (San Jacinto, 2005). The City of San Jacinto Water Department serves the central portion of the city with approximately 3,700 residential and commercial service connections. The 2005 population of the Water Department's service area is 13,200 and is projected to grow to 24,000 by 2025. The remaining portions of the city are served by EMWD and LHMWD, which have 4,636 and 475 service connections within the city boundaries, respectively.

The 2004 water use within the City of San Jacinto water service area was estimated to be 3,100 AFY, and is projected to increase to 5,100 AFY by year 2020 (San Jacinto, 2005).

#### **2.2.2 PRIVATE WATER PRODUCERS**

Private Water Producers are those property owners who are pumping groundwater pursuant to overlying water rights, typically for agricultural or domestic uses. Historically there was no comprehensive metering program in-place to monitor groundwater production and/or water use by the Private Water Producers. EMWD collected groundwater data through an informal, voluntary monitoring program. In 2004 the Hemet/San Jacinto Groundwater Monitoring Program was initiated by the Public Agencies and the DWR to collect, analyze, and compile groundwater-related data (EMWD, 2005).

It is estimated, on the basis of limited data and land use analysis, that the 2004 water use by Private Water Producers was about 22,200 AFY. This annual level of water use is unusually low, compared to a long-term average of 31,000 for 1984-2004 (WRIME, 2003a). Water use is expected to drop to approximately 16,000 AFY by 2020.

The Public Agencies recognize the overlying water rights of Private Water Producers, and the Principles provide several options for voluntary participation in the Plan by the Private Producers. For more details, please see the Principles provided in Appendix D.

There are two classes of participants, Class A and Class B; both agree to have their wells metered and to have those meters read by EMWD personnel at no cost to the participants. The two types of participants are further explained below.

### **2.2.2.1 Class A Participants**

A Private Water Producer can sign an agreement acknowledging the existence of the Plan, while not being required to participate in Plan implementation. Class A participants are allowed to vote for and/or serve as the Private Water Producer representative on the Watermaster board. The Class A participants may continue to pump from their property without assessments by the Watermaster, so long as the water is put to a reasonable and beneficial use as authorized by California law.

The Class A participants have the right to convert to Class B during a grace period that ends 3 years after the entry of the Stipulated Judgment, and upon payment of the total assessments without interest, as if they were Class B participants to begin with.

### **2.2.2.2 Class B Participants**

A Private Water Producer can become a Class B participant by electing to limit annual pumping to their estimated average annual production during the 1995 – 1999 calendar years and by agreeing to pay replenishment assessments on amounts in excess of that average annual production.

Like Class A Participants, Class B Participants can vote for and/or serve as the Private Water Producer's representative on the Plan's governing board. Additional benefits are given to Class B Participants as well. Under certain conditions, the Class B Participant can convey their Adjusted Production Right to the Plan or to a Public Agency. Also, upon conversion from agricultural to urban uses, Class B Participants would receive credits from the Public Agency toward the satisfaction of any requirements then in effect for water supplies and toward any fees associated with water supply that the Public Agency may then have in effect. For more information on production rights, please see Section 6.

### **2.2.2.3 Non-Participants**

A Private Water Producer can elect not to participate in the Plan and not to formally acknowledge its existence. These non-participants will continue to exercise their water rights unaffected by the Plan.

### **2.2.3 ROLE OF STATE OF CALIFORNIA DEPARTMENT OF WATER RESOURCES**

In June 2001, the DWR executed a Memorandum of Understanding (MOU) with EMWD, LHMWD, and the Cities of Hemet and San Jacinto. Initially, DWR worked to bring the group together to establish a mutual understanding of the issues in the Management Area. The goals of the group were determined and included the following: (i) finalizing an approach to groundwater management; (ii) settling on a mechanism to involve the Plan Participants in the water rights claim by the Soboba Tribe; (iii) agreeing on the basic components of a regional conjunctive use program; and (iv) establishing the necessary institutional structures. Major involvement of the DWR to-date include providing technical support to the TC and PC on resolving various technical and data analysis issues, providing facilitation and mediation support to the PC and the CAM committee, providing financial support on a number of studies and projects, including the Plan document.

### **2.2.4 PUBLIC PARTICIPATION**

There have been numerous opportunities for public input into the development of the Plan. Meetings were held for the public at the beginning of the Plan process to provide information and gather input. While the Plan was being developed, more opportunities were provided for public input, including TC and PC meetings and meetings with the Private Water Producers, all of which were open to the public. The public was also given the opportunity to review the draft of the Plan and submit comments.

## **2.3 PREVIOUS AGREEMENTS AND INSTITUTIONAL BODIES**

During the course of history of water supply in the Management Area, there have been other agreements and institutional bodies that have been formed and operated to facilitate the management of water supplies. Following is a brief description of these agreements and institutional bodies, which are no longer active or are superseded by this Plan.

### **2.3.1 FRUITVALE JUDGMENT AND DECREE**

The Fruitvale Judgment and Decree (The City of San Jacinto, et al., v. Fruitvale Mutual Water Company, et al., No. 51546, Riverside County) was entered into Book 72, Page 164 of Judgments, Riverside County, on June 4, 1954. Under the Judgment and Decree, FMWC could extract groundwater from an area which largely corresponds to the Canyon Management Zone without any restrictions as long as a specified criteria regarding static depth to groundwater and production limits were met. After purchase of FMWC, EMWD was subject to the

provisions of the Judgment and Decree. The Water Management Plan and related Stipulated Judgment will subsume and supersede the 1954 Fruitvale Judgment and Decree, along with any other agreements between EMWD and other agencies related to the FMWC acquisition, provided that none of the service area agreements included in the Fruitvale documents or those related to mutual aid or system interties are affected by this Plan or the Stipulated Judgment.

In 1971, EMWD purchased all of FMWC's assets and water rights, and FMWC was dissolved. EMWD also agreed to continue to provide to the Cities of Hemet and San Jacinto and LHMWD the amounts of water which they had been entitled to receive as shareholders in FMWC. These deliveries were known as "entitlement water" and the water was provided at a fixed rate, subject to annual adjustments. The amounts of water to be provided were:

- City of Hemet: 6.39% of the greater of FMWC pumping or 9,000 AFY;
- City of San Jacinto: 0.38% of FMWC pumping; and
- LHMWD: 3.74% of FMWC pumping.

The reporting by EMWD since the purchase of FMWC shows that an average of approximately 10,000 AFY was pumped from FMWC wells. Of this total, an average of 61% was from Upper Pressure, 33% was from Canyon, and 6% AFY was from Hemet South.

### 2.3.2 HEMET/SAN JACINTO GROUNDWATER ASSOCIATION

The Hemet/San Jacinto Groundwater Association (Association) was formed in 1991 to provide an over-arching organization to proactively address groundwater issues in the Management Area. The Association Board of Directors included representatives from the Private Water Producers, EMWD, LHMWD, and the Cities of Hemet and San Jacinto.

The Mission Statement and Articles of Association were approved on September 9, 1991. The Mission Statement read: *The Hemet/San Jacinto Groundwater Association serves as the regional groundwater management entity for portions of the San Jacinto Valley groundwater basins. The Mission of the Association is to maintain a secure reliable and reasonably priced supply of high quality water for groundwater producers in the basin. The Association will implement its Mission by developing and applying sound groundwater basin management concepts.*

With regard to the area covered by the Association, the Articles of Association state: *The portions of the San Jacinto Valley Groundwater Basins shall include the Canyon area, the Intake area, and the upper pressure area, of the San Jacinto Hydrologic Subarea; the Hemet Hydrologic Subarea; and a portion of the Winchester Hydrologic Subarea. Such also being that portion of the San Jacinto Valley southeasterly of Bridge Street and northeast of one-quarter mile west of California Avenue in the area of Simpson Road, together with tributary basins, streams, and watersheds.*

In May 1994, following receipt of the Soboba Band of Mission Indians water rights settlement claim, requests were submitted to the U.S. Department of the Interior by EMWD, the Association, and the Soboba Tribe, to appoint an Indian Water Rights Settlement team to participate in settlement negotiations. The activities of the Association stopped when the current negotiations took precedence.

## **2.4 ACTIVE INSTITUTIONAL BODIES**

As part of the on-going activities leading to the development and adoption of the Principles, the Stipulated Judgment, and agreement with the Soboba Tribe, the following institutional bodies are formed:

- Hemet/San Jacinto Policy Committee (PC),
- Hemet/San Jacinto Technical Committee (TC), and
- Hemet/San Jacinto Consultant-Attorney-Managers Committee (CAM).

Following is a brief description of each body, their role, and participants.

### **2.4.1 HEMET/SAN JACINTO POLICY COMMITTEE**

The PC is comprised of elected officials representing EMWD, LHMWD, the Cities of Hemet and San Jacinto, and representatives of the Private Water Producers. Each entity, including the Private Water Producers, has three representatives on this committee. In the case of the Public Agencies, the PC representatives are two members of the Board of Directors or City Council and the agency or city manager. Three representatives reflecting the Private Water Producers interests (agricultural, dairy, golf course, etc.) are selected by the Private Water Producers. Each entity participates and votes as a unit in the PC. The decision making process is based on consensus. DWR provides a facilitator, a project manager, and technical experts to support and facilitate the decisions of the PC and TC members. Observers to the PC include other Private Water Producers, attorneys, and/or consultants representing various members, and representatives of the Soboba Tribe.

The list of participants in the PC at the time of adoption of this Plan is presented in Appendix E.

### **2.4.2 HEMET/SAN JACINTO TECHNICAL COMMITTEE**

The PC formed a TC to compile, share, interpret, evaluate, and reach agreement on data; to define problems; and to address the PC's technical issues and make recommendations to the PC. Committee membership consists of representatives assigned by the Public Agencies, the Private

Water Producers, and DWR and an engineering consultant provided by DWR as a neutral third-party participant. The representative from LHMWD served as the TC chairman. Through a collaborative effort, the TC developed the data set (WRIME, 2003a) that provides the basis for understanding the area's hydrology, and has identified potentially feasible initiatives, programs, and projects to enhance the safe yield of the Management Zones.

The list of participants in the TC at the time of adoption of this Plan is presented in Appendix E.

### **2.4.3 HEMET/SAN JACINTO CONSULTANT-ATTORNEY-MANAGERS COMMITTEE**

The PC formed the CAM Committee, consisting of technical, legal, and management representatives of each Public Agency, assisted by the DWR project manager and facilitator. The role of the CAM Committee is to facilitate the preparation of technical and legal documents in support of the Stipulated Judgment, the Agreement, and the Plan. Tasks assigned to the CAM Committee include: the development of contractual agreements and MOUs, and the evaluation of the financial impacts to the community for consideration and action by the PC. The CAM Committee provides administrative or policy recommendations to the PC.

The list of participants in the CAM Committee at the time of adoption of this Plan is presented in Appendix E.

## **2.5 RELATED GROUNDWATER MANAGEMENT ACTIVITIES**

There have been numerous investigations and technical analyses conducted in the Management Area. This section highlights more recent reports that were produced to support the Plan, reviewed by the TC, and used by the PC to make decisions. There has been a significant amount of work completed by the local agencies documented in the form of presentations to the PC and the TC. These include:

- Analysis of EMWD Fruitvale water transfer and use by other agencies;
- Analysis of Conveyance (export) water from the Management Area;
- Reconciliation of the Groundwater Production records amongst the participants;
- Estimation of basin overdraft;
- Review and assessment of the San Jacinto Watershed Groundwater Model; and
- Recycled water use and activities.

A Basin Assessment Study was undertaken in 2003 by the local stakeholders with the support of DWR in order to evaluate the existing conditions of the Management Area, evaluate likely future conditions, and develop and evaluate potential conjunctive use opportunities in the

Management Area. To support the Basin Assessment Study, the following Technical Memoranda (TM) and reports were produced:

- *Operational Yield Study, Hemet/San Jacinto Groundwater Management Area (WRIME, 2003d);*
- *Technical Memorandum No. 1 (TM1), Assessment of Historical and Projected Land and Water Use Data (WRIME, 2003a);*
- *Technical Memorandum No. 2 (TM2) - Description of Preferred Potential Conjunctive Use Projects (WRIME, 2003c);*
- *Basin Assessment Study Executive Summary (ES) (WRIME, 2003b); and*
- *Draft Technical Memorandum No. 3 (TM3) - Analysis of Impacts of Conjunctive Use Projects (January 2004).*

The *Operational Yield Study, Hemet/San Jacinto Groundwater Management Area* presents estimates of the operational yield of the Management Area. Several time periods were used to examine the water budgets of each Management Zone and the Management Area as a whole under various hydrologic conditions. The purpose of the report was to review the previous estimates of hydrologic water budget and reconcile differences in the previously prepared water budgets, and to achieve a consensus on the assumptions, data, methods, and yield of the basin. The long-term period of 1958-2001 was used since it had the best available data at the time and represented a balanced hydrologic period, with wet, dry, and normal periods similar in frequency to the overall historical record.

*Hemet/San Jacinto Basin Assessment Study – Basin Assessment Report/Integrated Water Management Plan, Technical Memorandum No. 1 (TM 1), Assessment of Historical and Projected Land and Water Use Data* presents background and available data, and analyzes the quality and utility of the data for evaluating basin conditions. The data presented in TM 1 include historical groundwater production, water diversions, water sales, and imported water. The purpose of the report was to obtain agreement on existing conditions, document assumptions, and provide a baseline for purposes of future comparison.

*Hemet/San Jacinto Basin Assessment Study – Basin Assessment Report/Integrated Water Management Plan, Technical Memorandum No. 2 (TM 2), Identification and Description of Potential Conjunctive Use Projects* presents the process and basis of selection of sites for further evaluation for potential conjunctive use projects. Seven sites were selected from an initial group of 15. The sites were ranked based on screening criteria that included: general site characteristics (size, recharge needs, ownership, etc.), recharge water sources, hydrogeologic suitability, sub-basin interactions, engineering suitability, land use suitability, and environmental impacts. An initial screening was also performed for two potential in-lieu projects.

*Hemet/San Jacinto Basin Assessment Study – Executive Summary* provides a summary of TM 1 and TM 2.

*Draft Hemet/San Jacinto Basin Assessment Study – Basin Assessment Report/Integrated Water Management Plan, Technical Memorandum No. 3 (TM 3), Analysis of Impacts of Conjunctive Use Projects* (January 2004) presents a summary of available information on seven potential recharge sites and two potential in-lieu sites for conjunctive use. Draft TM 3 synthesizes information from multiple sources to compare potential recharge sites and proposes preferred sites and documents any additional study or data needs. The TM 3 was presented to the TC in draft form, and comments were received. Due to initiation of the development of the Water Management Plan, the work to finalize TM 3 was re-scoped, which obviated the need to prepare a final TM 3.

Significant other work has been performed and documented by EMWD. These reports include planning documents and feasibility studies with modeling efforts:

- *West San Jacinto Groundwater Basin Management Plan;*
- *Hemet/San Jacinto Water Management Area 2004 Annual Report;*
- *Hemet-San Jacinto Recharge and Recovery Program- Feasibility Study;*
- *Regional Groundwater Model for the San Jacinto Watershed;*
- *Hemet-San Jacinto Integrated Recharge and Recovery Program- Feasibility Study Groundwater Flow Model;*
- *Lake Elsinore and Canyon Lake Nutrient Source Assessment;*
- *Groundwater Infiltration Predictions Using Surface Water Model Output for the San Jacinto Watershed;*
- *Development of the Regional Water Resources Database (RWRD); and*
- *Preliminary Design Report for the San Jacinto Agricultural In-Lieu Water Supply Project.*

*West San Jacinto Groundwater Basin Management Plan* (EMWD, 1995). This plan was prepared in accordance with Assembly Bill 3030. This groundwater management plan covers the western portion of the EMWD service area in the San Jacinto Watershed. Since the groundwater management in the eastern San Jacinto watershed was being developed under Association in the early 1990s, the Management Area was excluded from the AB3030 planning process. The goal of the West San Jacinto Groundwater Basin Management Plan is “to maximize the use of groundwater for all beneficial uses in such a way as to lower the cost of water supply and to improve the reliability of the total water supply for all water users in the West San Jacinto Groundwater Basin Management Area” (EMWD, 2004). Implementation of the plan included the establishment of an Advisory Committee; Management Zone prioritization; and



groundwater resources evaluation including groundwater quality and level monitoring, extraction monitoring, and hydrogeophysical investigations.

*Hemet/San Jacinto Water Management Area 2004 Annual Report* (EMWD, 2005b). As part of the reporting process to the Management Area stakeholder group, EMWD produces annual reports that summarize groundwater quality, level, and extraction monitoring results, and provide an update on activities and progress toward meeting the previous year's recommendations and goals of the groundwater management plan. The first annual report for the Hemet/San Jacinto Area was produced in June 2005.

*Hemet-San Jacinto Recharge and Recovery Program- Feasibility Study* (Psomas, 2003). This report documents the feasibility of a proposed recharge project. The proposed Hemet/San Jacinto Integrated Recharge and Recovery Program consists of average annual recharge of 43,750 acre-feet (AF) based on long-term hydrology at a site within the City of Hemet and near the San Jacinto River's confluences with Poppet and Bautista Creeks. This program involves the construction of approximately 15 recharge ponds on a 100-acre site in the San Jacinto River channel, construction of new pipeline facilities, upgrade of existing pump stations, and construction of new extraction wells at various locations within the Management Area. In order to assess the feasibility of the proposed program, a comparative analysis was completed to evaluate potential alternatives to the preferred option of recharging imported water.

*Regional Groundwater Model for the San Jacinto Watershed* (TechLink Environmental, 2002a). This report documents the development of a regional groundwater flow and transport model for the San Jacinto watershed basin within EMWD's service area, an area that includes the Management Area as well as the areas to the west included in the *West San Jacinto Groundwater Basin Management Plan*. *Regional Groundwater Model for the San Jacinto Watershed* includes review of available data, development of a conceptual model, setup of a flow and transport model, calibration of the model, and simulation of management scenarios.

*Hemet-San Jacinto Integrated Recharge and Recovery Program - Feasibility Study Groundwater Flow Model* (TechLink, 2002b). This report documents the application of the regional groundwater model to evaluate the various recharge and recovery activities and alternative water supplies. These model simulations are intended to compare project and no-project alternatives, evaluate the aquifer capability to store large volumes of water, and evaluate the availability of recharged water for extraction.

*Lake Elsinore and Canyon Lake Nutrient Source Assessment* (TetraTech, 2003). TetraTech developed a watershed model of the San Jacinto watershed for the Lake Elsinore and San Jacinto Watershed Authority and the RWQCB as part of the Lake Elsinore and Canyon Lake Nutrient Source Assessment. The model provided a framework for nutrient source assessment through representation of contributing land uses in a subwatershed network and subsequent

determination of required nutrient load reductions and allocations to Total Maximum Daily Load (TMDL) objectives. Relating to the Management Area, the report showed that nutrients from the Management Area only reach the lakes when Mystic Lake overflows.

*Groundwater Infiltration Predictions Using Surface Water Model Output for the San Jacinto Watershed* (TetraTech, 2004). This report documents the update and modification of the watershed model by TetraTech to support EMWD's development of a groundwater model of the San Jacinto River basin to simulate aquifer storage in the region. The update and modification included extension of the modeling period from January 1984 to March 2003, division of one subwatershed into 4 subwatersheds, and modification of model output. The model was validated and scenarios were run.

*Regional Water Resources Database* (EMWD, 2005c). A RWRD was developed for EMWD in 2004 to house the existing and future groundwater-related records and to interface Geographic Information System (GIS) maps and aerial photographs. The RWRD contains information for groundwater levels and extraction; streamflow and diversions; well information, construction data, downhole logs, and well/aquifer pump tests; precipitation; temperature; evaporation; imported water usage and quality; conjunctive use; and water quality data from other laboratories and published reports. While no formal document is available to-date describing the full development and implementation of this project, *Regional Water Resources Database* presents a concise summary of the capabilities of this important component of data management in the region.

*Preliminary Design Report for the San Jacinto Agricultural In-Lieu Water Supply Project* (Engineering Resources of Southern California, 2005). This report details how recycled water could be incorporated into existing irrigation infrastructure and how to be consistent with the regulatory constraints associated with recycled water use. This included study of water demands, pipeline alignment and size, and environmental issues and resulted in the development of a preliminary plan and cost estimate. The preliminary plan included 13,200 feet of 24-inch pipeline serving Rancho Casa Loma and Scott Brothers Dairy Farms. Total irrigation demand from these farms is estimated at 8,640 AFY. Of this amount, the project could deliver 3,215 AFY due to limited availability of recycled water during the summer months. The project is estimated to take 13 months to complete.

The elements of this Plan include water management goals and a set of management strategies that discuss and identify the actions necessary for meeting the goals.

### **3.1 MANAGEMENT PLAN GOALS**

The Plan has eight primary goals derived from the Principles and the Agreement. Each of the goals, listed below, is briefly discussed in subsequent sections:

- Address pumping overdraft and declining groundwater levels,
- Provide for Soboba Tribe prior and paramount water rights,
- Ensure reliable water supply,
- Provide for planned urban growth,
- Protect and enhance water quality,
- Develop cost-effective water supply,
- Provide adequate monitoring for water supply and water quality, and
- Supersede the Fruitvale Judgment and Decree.

#### **3.1.1 ADDRESS PUMPING OVERDRAFT AND DECLINING GROUNDWATER LEVELS**

The Principles and the Stipulated Judgment recognize that groundwater levels within the Management Area have generally been declining for a number of years, and that the Management Area is presently in a condition of groundwater overdraft. The amount of groundwater overdraft is estimated to range from 10,000 to 15,000 AFY. This Plan has a goal of reducing the overdraft in the short-term, and completely eliminating the annual overdraft in the long-term. The timeframe will depend on the extent of overdraft, as more knowledge is gained through the years. For example, a six-year period would be needed to eliminate overdraft if there is an annual overdraft of 10,000 AF.

The Principles identify management strategies to be included in the Plan to reduce overdraft and ensure a long-term supply of reliable water for current and future uses. The Plan contains both management (non-structural) and capital facility (structural) elements to reduce demand and/or increase the available supply. The management elements include: reduction in native groundwater production; enhanced recharge with local runoff, imported, and/or recycled water; and water conservation programs. Short-term planned reductions in pumping are part

of the Plan while further supplies are obtained through the identified management elements. The management strategies are described in more detail in Section 3.2.

### **3.1.2 PROVIDE FOR SOBOBA PRIOR AND PARAMOUNT WATER RIGHTS**

The Agreement with the Soboba Tribe provides for financial obligations, settlement of all water rights claims, and water purchases from MWD, including infrastructure and groundwater storage. The Plan requires that all parts of the Agreement with the Soboba Tribe be met. The management elements to ensure this include: recognition of 9,000 AFY of Soboba Tribe water rights and up to 4,100 AFY of water use in Canyon and Upper Pressure Management Zones for the first 50 years from the date of Settlement, purchase of replenishment water, and MWD's long-term average delivery of 7,500 AFY of imported water.

### **3.1.3 ENSURE RELIABLE WATER SUPPLY**

Reliability is a key component of any water supply system. This goal of the Plan is to ensure that the Public Agencies have a consensus and commitment to develop a comprehensive water supply portfolio that realizes all potential opportunities, and that plans are in place to adapt to changing demands, natural disasters, and drought conditions. Such a portfolio should rely on a range of sources of water supply and include a large component of local supply and storage. These objectives minimize, to the extent possible, reliance on weather patterns, over-stressed aquifers, and over-allocated imported water. The Plan elements that address these goals include imported and recycled water use.

### **3.1.4 PROVIDE FOR PLANNED URBAN GROWTH**

The Management Area, like much of the Inland Empire area of Southern California, is experiencing dramatic urbanization. The Principles and the Plan recognize and acknowledge that the Management Area will continue to experience residential, commercial, and industrial growth and development, and that the existing water production and service systems will need to be expanded to meet this growth. This urbanization will affect water supplies in several ways. Urban development on non-irrigated lands will increase water use. Urban development and conversion of irrigated lands may not significantly increase water use, but the urban water use requires a more dependable, higher quality water supply. It is estimated that at least 15,000 AFY incremental water supply capacities over the existing Base Production Rights of Public Agencies must be dedicated to adequately serve this growth. The Plan will help local communities comply with recent changes in state law effective January 2002 (SB 221 and SB 610) requiring municipal suppliers, water districts, and cities or counties to document water availability from all sources in normal, dry, and multiple dry years whenever land use decisions

are made. Planned urban growth, as identified in prevailing land use and general plans, or in approved Urban Water Management Plans (UWMP), provided the basis for all demand forecasts and assumptions in the Plan.

### **3.1.5 PROTECT AND ENHANCE WATER QUALITY**

The Management Area has some of the highest quality groundwater in the San Jacinto Watershed, but it has its own problems and issues. Nitrates and Total Dissolved Solids (TDS) concentrations have historically increased as the area experienced urban and agricultural growth. As noted above, urban uses will replace agricultural uses, resulting in more stringent water quality standards for most constituents, including nitrates. The Plan seeks to meet goals for water quality through preventing degradation of the groundwater due to activities in the Management Area, and as a result of implementation of the Plan. Each of the Public Agencies also seeks to prevent degradation or to improve groundwater quality to avoid high costs for drinking water treatment.

### **3.1.6 DEVELOP COST-EFFECTIVE WATER SUPPLY**

Equitable distribution of costs and benefits are part of the Plan. It is important that the Plan elements are selected and implemented in a way that keeps costs to a minimum so as to keep water bills as low as possible for customers. Cost management includes purchasing imported water at low rates; utilizing groundwater storage space; fully utilizing existing infrastructure; promoting conservation; efficiently implementing new infrastructure; and maintaining good quality groundwater and surface water to keep treatment costs low. The Public Agencies also seek to cost-effectively reclaim municipal wastewater for beneficial reuse whenever possible.

### **3.1.7 PROVIDE ADEQUATE MONITORING FOR WATER SUPPLY AND WATER QUALITY**

Monitoring programs will be implemented to determine if the Plan's goals are being met; to document that anticipated benefits are being achieved; and to predict future needs. Included in the monitoring should be water quality, sampled at sufficient locations to be representative, with analysis for all constituents of concern. In addition, the monitoring program should include monitoring of water levels, well metering, and tracking of imported water and recycled water availability and deliveries. Monitoring can also be used to improve yield estimates and groundwater model performance through the development of better estimates of stream recharge and other components. The results of monitoring will be used to strengthen or relax actions needed to meet Plan goals.

### **3.1.8 SUPERSEDE THE FRUITVALE JUDGMENT AND DECREE**

The Fruitvale Judgment and Decree (The City of San Jacinto, et al., v. Fruitvale Mutual Water Company, et al., No. 51546, Riverside County) was entered into Book 72, Page 164 of Judgments, Riverside County, on June 4, 1954. EMWD, as successor in interest to FMWC, is subject to the provisions of the Judgment and Decree. Provisions in the document are discussed and summarized in Section 2 of this Plan. The Stipulated Judgment and its Water Management Plan are to supersede the Fruitvale Judgment and Agreement subject to certain exceptions in Section 3.5 of the Stipulated Judgment.

## **3.2 WATER MANAGEMENT PLAN STRATEGIES**

To meet the stated goals of the Plan, the stakeholders have adopted the following specific strategies.

### **3.2.1 REDUCE PUBLIC AGENCY NATIVE GROUNDWATER PRODUCTION**

The Public Agencies have agreed to reduce native groundwater production so that total production is within the Safe Yield of the Management Area. The average annual groundwater production in the Management Area for the hydrologic period 1958-2004 is estimated to be 54,800 AFY. The initial estimate of Safe Yield is 45,000 AF. The Public Agencies have also agreed to a 10% reduction from each Base Production Right in the first full year after entry of the Stipulated Judgment. The Public Agencies' share of Safe Yield is calculated based on their Adjusted Production Right, and is discussed further in Section 11. Within the first six years, the Watermaster will make a determination of the Safe Yield of the Management Area. Thereafter, the Safe Yield shall be reviewed and modified, if necessary, upon the recommendation of the TC or as the Watermaster may determine. Until Adjusted Production Rights are consistent with the Public Agencies' share of Safe Yield, the Watermaster will determine the required reductions in Adjusted Production Rights in each subsequent year to achieve Safe Yield within a reasonable period of time as determined by the Watermaster. The Watermaster is to consider the extent of the overdraft, the economic impact on the parties bound by this Judgment, and other relevant factors in determining the total and pro-rata shares of Adjusted Production Rights. The goal is to achieve production at the same level as Safe Yield over a six-year period assuming an annual overdraft of 10,000 acre-feet. In the event the extent of the overdraft is different than assumed, then the period of time reasonably required to reach Safe Yield may be extended or reduced accordingly. However, in no event shall any reduction for any Public Agency be more than 10% of the Adjusted Production Rights of the prior year.

### 3.2.2 IMPLEMENT THE SAN JACINTO RIVER RECHARGE AND RECOVERY PROJECT

The stakeholders have agreed that Phase I of the IRRP is the primary project considered to be the core of the Physical Solution. The stakeholders are working towards an agreement for Phase I of the IRRP project which documents their agreement on the ownership, financing, and operation of the facilities.

The information presented here is based on previously published documents adjusted when appropriate based on the latest knowledge at the time of publication of the Plan.

Phases I and II of the IRRP are designed to recharge (replenish) imported water and extract groundwater at a capacity such that the following goals are met:

- Satisfy the Tribe's prior and paramount rights as set forth in the Agreement with the Tribe by providing an average annual supply of 7,500 acre-feet pursuant to the terms of such agreement. The proposed Program would provide the MWD with the right to store up to 40,000 acre-feet of imported water in the Upper Pressure Sub-basin as advance deliveries under its agreement to provide an average annual supply of 7,500 acre-feet.
- Offset the existing overdraft of the Management Area, estimated at approximately 10,000 AFY.
- Provide approximately an additional 15,000 AFY of water storage to help meet projected demand increases.

Major elements of Phase I of the Project are (Figure 3.1):

- Modifications to Pump Stations (Warren and Commonwealth);
- Construction of Pipelines;
- Design and Construction of Recharge Basins;
- Drilling Three (3) Extraction Wells;
- Installation of Pumps and Chlorination Equipment for Three (3) Extraction Well; and
- Design and Installation of Three (3) Monitoring Wells.

The project is designed and implemented in two Phases. While project Phase I activities are defined in detail, Phase II of the project is defined at conceptual level and the detailed design will be developed in the future.

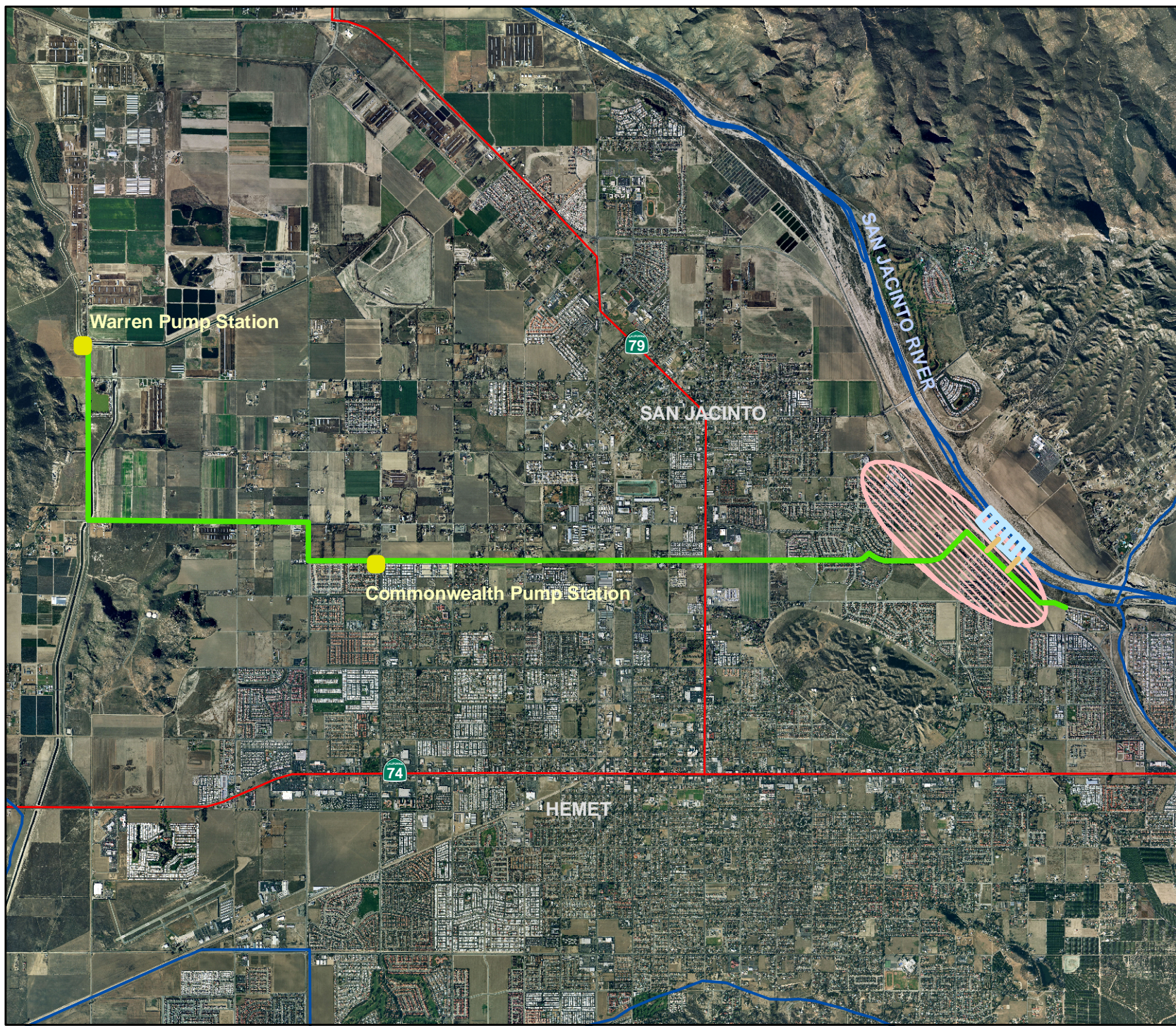


Hemet / San Jacinto  
Water Management  
Plan  
**Schematic of Integrated  
Recharge Recovery  
Program - Phase I**

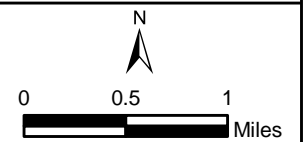
Figure 3.1

**Legend**

-  Pump Station
-  Phase I Pipeline
-  Phase I Ponds
-  Existing Pipeline
-  Phase I Well Field



Source: EMWD



October 2007





### 3.2.2.1 Phase I

This phase of the project consists of the construction of the San Jacinto Integrated Recharge and Recovery Project, which will provide up to 42 cubic feet per second (cfs)\* of recharge water capacity. Phase I is scheduled to be completed by December 2008\*, and will cost approximately \$16.2\* million. Major activities during Phase I are:

1. **Completion of Environmental Process** - The Environmental Impact Report (EIR) was prepared and adopted in August of 2004. Additional permitting requirements include Section 7 consultation with USFWS and issuance of Biological Opinion by the appropriate federal agency.
2. **Acquisition of Land** - A 100 acre parcel has been purchased by EMWD for required habitat mitigation measures for a 35 acre\* parcel that is dedicated to recharge basins. In addition, EMWD is in the process of acquiring approximately one acre of land (in several parcels) for monitoring wells.
3. **Approval, Advertising, and Award of Construction Contract** - The EMWD Board of Directors has approved the bidding process.
4. **Drilling of Extraction Wells No. 1, 2, and 3** - This includes construction and testing of three 18-inch diameter extraction wells, each to a depth of approximately 1,000 feet.
5. **Installation of Pump and Chlorination Equipment for Wells No. 1, 2, and 3** - This includes installation of pump and chlorination equipment, appurtenances and site improvements required to complete and operate the new extraction wells.
6. **Modifications to the Pump Station** - This includes modifications to the Warren and Commonwealth Pump Stations. The modifications include upgrades to increase pump station capacity to provide a seasonal maximum of 42 cfs\* to the recharge basins.
7. **Construction of Recharge Basins** - This activity includes construction of six recharge ponds within the San Jacinto river bed in two clusters of three ponds each. The footprint of the recharge area will be approximately 35 acres\*, along the west side of the San Jacinto River, immediately upstream of the river confluence with the Meridian Channel.
8. **Construction of Pipelines** - This includes design and construction of pipelines and appurtenances to convey, regulate, and meter raw imported water flows into the recharge basins. Pipelines include two (2) 24-inch diameter laterals to convey water from an existing 33-inch diameter transmission main along the proposed Ramona Expressway alignment to the first basin in each of the two basin clusters. There will be appurtenances including regulation valves, meters to record water

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\* Number has been updated since the publication of the IRRP Feasibility Report.

flow, telemetry-based flow control systems, and discharge piping into the recharge basins.

9. **Design and Construction of Monitoring Wells** - Three monitoring wells will be constructed outside the river bed along the west berm. The wells are designed to monitor the vertical and lateral migration of recharge water into the underlying aquifer zones. These clustered wells will be multi-cased and perforated to monitor the groundwater levels at various depths.

The overall project size may change as a result of negotiations with regulatory agencies.

### **3.2.3 IMPLEMENT GROUNDWATER REPLENISHMENT PROGRAM**

The groundwater aquifers in the Management Area are a valuable resource and provide many advantages to operating a reliable water supply system. For many Private Water Producers, groundwater is their sole source of water. Declining water levels increase costs for pumping water and can also cause wells to go dry, requiring deeper drilling, or can result in the intrusion of poor quality groundwater from neighboring Management Zones, rendering the groundwater unsuitable for many beneficial uses. Also, the replenishment of high quality imported water from the State Water Project or high quality runoff from the surrounding mountains can maintain or improve the quality of the groundwater in the Management Area.

Groundwater replenishment, therefore, is a major part of the water management strategies considered by the stakeholders. Replenishment efforts to increase water supply in the Management Area can be grouped into two categories:

1. Direct replenishment of groundwater to store water for future use; and
2. Augmentation of imported or recycled water supplies to provide immediate increases in water supply and the associated decrease in groundwater pumping. Often, these categories are combined, with increases in imported or recycled water being used to replenish groundwater for future use.

#### **3.2.3.1 Enhancing Natural Replenishment**

The Management Area already receives a significant amount of natural recharge, from sources such as direct recharge from precipitation and infiltration from the San Jacinto River and its tributaries. While much of this water is able to infiltrate naturally, natural recharge could be increased by capturing surface flows during storm events, allowing the water to infiltrate over time rather than be swept out of the Management Area. As part of the Basin Assessment Study, the TC has identified and considered several conjunctive use and natural replenishment projects that have the potential to address such a water supply management strategy. These are described in Section 5.3 of the Plan.

### **3.2.3.2 Additional MWD Replenishment Water**

Utilizing replenishment allows for significant cost savings when purchasing imported water from MWD. MWD provides special rates for water used for replenishment purposes. This water is available during the low-demand winter period and currently costs \$238/AF for untreated water, while full-service Tier 1 & 2 untreated water currently costs \$331/AF and \$427/AF, respectively.

### **3.2.4 EXPAND THE USE OF RECYCLED WATER**

Recycled water is available from EMWD's San Jacinto Valley Regional Water Reclamation Facility. Currently, recycled water is used by agricultural users and other large-scale outdoor irrigators such as golf courses and municipal facilities in place of groundwater. The Watermaster will use recycled water as a significant part of its water supply strategy for replenishment of the groundwater basin. The Watermaster will work with EMWD to determine the operational constraints currently facing the availability of recycled water for replenishment of the basin. The recycled water is to follow the State and Federal guidelines. Future phases of the Plan include upgrade of the San Jacinto Valley Regional Water Reclamation Facility to tertiary treatment.

#### **3.2.4.1 Continue and Expand the In-Lieu Replenishment with Recycled and/or Imported Water**

In-lieu replenishment with recycled and/or imported water provides many benefits over direct replenishment of the groundwater. In-lieu involves utilizing an alternate source, in this case imported or recycled water, instead of pumping groundwater. Using in-lieu recharge means that there is no cost to pump groundwater, no land is needed for a spreading basin, and there is no constant recharge through a basin to push salts out of the unsaturated zone. Disadvantages include timing of the supplies with demand; that is, most in-lieu customers cannot use the quantity of water available during the off-peak time. To maximize use of water available for in-lieu replenishment, significant infrastructure will be needed to serve the maximum number of customers. This strategy would require the Watermaster to work with EMWD, other agencies, and Private Water Producers to develop specific plans for expanding the use of recycled water for in-lieu replenishment of the basin.

### **3.2.4.2 Expand and Upgrade the San Jacinto Valley Regional Water Reclamation Facility**

The San Jacinto Valley Regional Water Reclamation Facility is currently an 11 MGD plant with capability to treat wastewater to a secondary level of treatment. While this plant is scheduled for upgrade to tertiary treatment, the recycled water discharge beyond the sale to the agricultural customers is currently being disposed of in the basin. The plant is scheduled for expansion in size and upgrade of the treatment level, and the upgraded plant will have the capacity to treat 14 MGD by 2011 and 18 MGD by 2024. The Watermaster shall have the right of first refusal to purchase all recycled water produced from the treatment facilities serving the Management Area that is not subject to then existing contracts. The Watermaster will analyze the need and decide on the amount of recycled water for direct recharge and/or direct delivery.

### **3.2.5 PROVIDE FOR RELIABLE WATER SUPPLY TO MEET THE FUTURE DEMAND**

The Plan is to provide sufficient water supplies to meet future water demands in the Management Area. This strategy is tied directly to the IRRP that is designed to provide 15,000 AFY of additional supplies to meet the projected water demands. As part of this strategy, additional conjunctive use projects, identified in Section 5.3 of this Plan, will augment Phase II of the IRRP. These projects are mostly designed to capture winter run-off for recharge, unlike the IRRP that is designed to recharge imported water.

### **3.2.6 IMPLEMENT ADDITIONAL WATER CONSERVATION MEASURES**

The current level of water conservation has significantly helped to reduce the water demand in the Management Area. In addition to the conservation measures implemented by the Public Agencies, additional conservation measures can be designed and implemented by the agricultural and dairy water users. The Watermaster, in coordination with the Agencies, should develop specific strategies for additional water conservation. In addition, they should identify practical steps and means for voluntary implementation by the agricultural and dairy water users that would help water management of the basin.

### **3.2.7 IMPLEMENT AND EXPAND MONITORING PROGRAM**

At the heart of any water management plan is a robust monitoring program capable of assessing the status of the basin and monitoring the responses to future management actions.

EMWD, on a voluntary basis, has compiled historical groundwater elevation and quality data from mid-1950s through the present. In the early data collection efforts, the location and

frequency of monitoring were not as consistent as the more recent measurements. This was mostly due to the voluntary nature of participation in the monitoring program, as well as funding availability. This lack of consistency in data collection hampers rigorous and thorough analysis. However, long-term hydrographs as well as contours of groundwater levels have been produced by EMWD to present long-term trends in groundwater conditions over time, and with appropriate geographic extent.

In 2004, the Hemet/San Jacinto Groundwater Monitoring Program was initiated to collect, compile, and analyze groundwater-related data. This program was undertaken by the Public Agencies and DWR. The monitoring program provides the information necessary for a comprehensive view of the Management Area, and contains the following elements:

- Groundwater Level Monitoring;
- Groundwater Quality Monitoring;
- Groundwater Extraction Monitoring; and
- Inactive Well Capping and Sealing.

Finally, the monitoring program utilizes EMWD's RWRD, for assembling and assessing groundwater-related data in the Management Area. All Public Agencies provide data on their wells and assist in communicating with private well owners in their respective jurisdictions to collect their data and information.

This strategy reconfirms that the monitoring program, as established in 2004, should continue and be expanded to new areas. The Stipulated Judgment requires that the Watermaster implement a monitoring program to ensure that Plan activities follow best management and engineering principles to protect Management Area water resources, and to compile and analyze data on groundwater production, water levels, water quality, and groundwater in storage. The Watermaster, in coordination with EMWD and other Public Agencies, will develop plans for expansion of the monitoring program, as well as, specific actions for implementation of the monitoring program in the Management Area. Funding for the monitoring program will come from the Administrative Assessment, as detailed in Section 10.3.1.

### **3.2.7.1 Groundwater Monitoring**

Groundwater level and quality monitoring are valuable, but can be costly and time consuming. A robust network of monitoring wells can be established to develop the optimum amount of data on groundwater. Some criteria to be used in the development or modification of the network may include:

- Monitor the same well for selected seasons over many years to understand trends and variability;
- Develop an unbiased distribution of monitoring wells, aerially and vertically, that account for differences in:
  - Topography,
  - Geology and soils,
  - Climate, and
  - Land Use;
- Maintain supporting data to aid in analysis, including:
  - Meteorological data,
  - Hydrologic data, and
  - Land use data, including pumping and irrigation;
- Monitor at a frequency that captures variability of water level and water quality fluctuations;
- Utilize wells, to the extent possible, intended solely for groundwater monitoring, not production; and
- Maintain high levels of data quality.

The Watermaster is to work cooperatively with the Public Agencies and Private Water Producers to establish an optimum network of monitoring wells for collection and analysis of groundwater trends and variability.

### **3.2.7.2 Surface Water Monitoring**

Surface water monitoring would build on the existing cooperative program between EMWD and the United States Geological Survey (USGS). This program monitors streamflow on the San Jacinto River just upstream of State Street and on Lamb Canyon Creek near Victory Ranch. The USGS also monitors a gage on the San Jacinto River at the Cranston Ranger Station. Continued and additional surface water flow and quality monitoring would include the following criteria:

- Monitor the same location for many years to understand trends and variability;
- Maintain supporting data to aid in analysis, including:
  - Meteorological data,
  - Groundwater data, and
  - Land use data, including pumping and irrigation; and
- Maintain high levels of data quality.

Gaging station should be installed on reaches not currently being monitored, such as:

- San Jacinto River near Main Street;
- San Jacinto River near Highway 74 bridge crossing;
- Bautista Creek near Highway 74 bridge crossing; and
- Salt Creek near State Street.

The Watermaster is to work cooperatively with the Public Agencies to establish specific monitoring locations for collection and analysis of surface water trends and variability.

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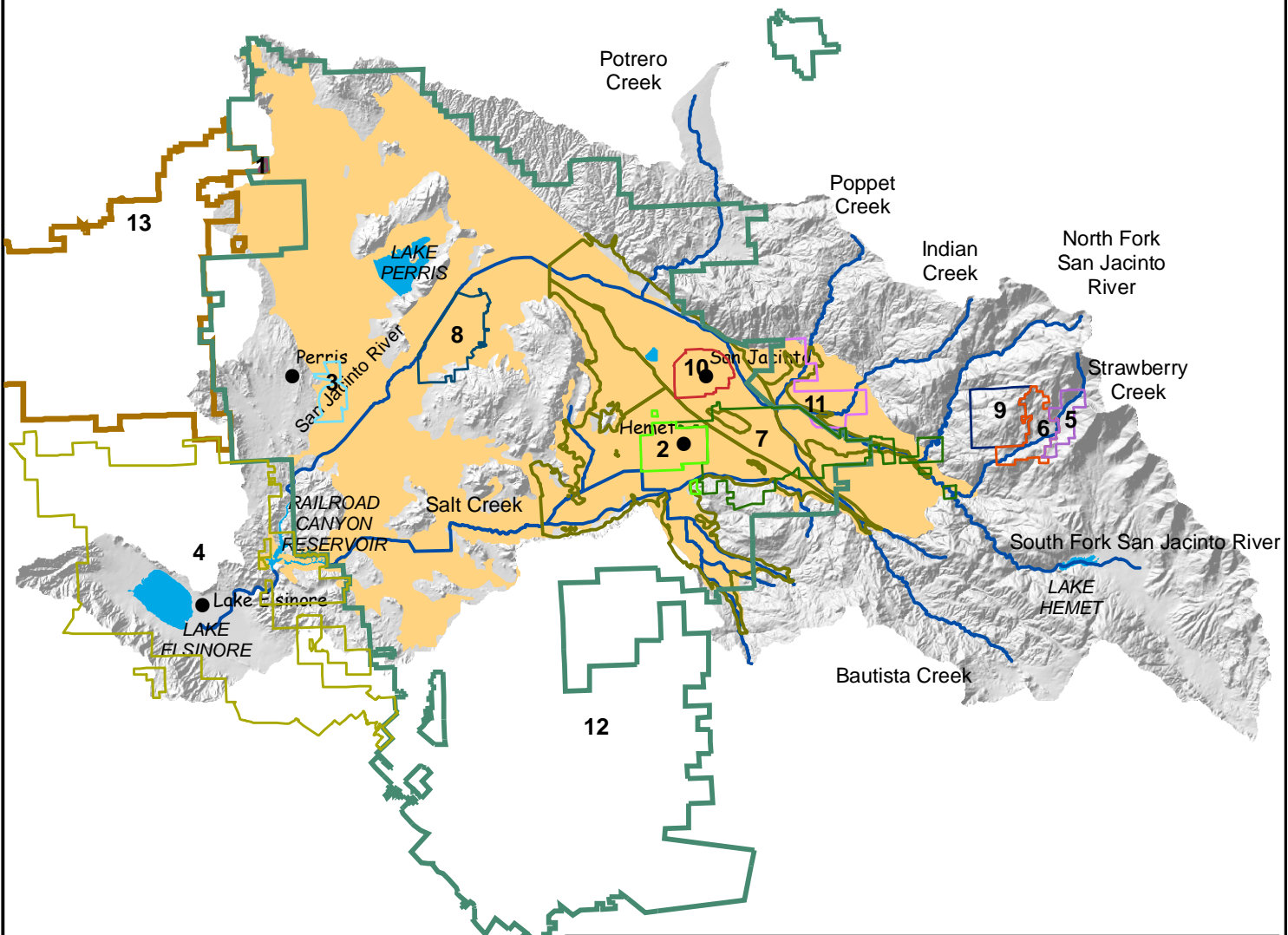
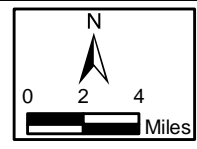
This section discusses the local geologic and hydrologic conditions that provide the foundation for the development of the Plan. The ability to manage available water supplies is to a large degree governed by naturally occurring conditions and the physical environment. This section further describes water supply conditions and sources; historical and current water demands; status of the groundwater basin; and summarizes water quality conditions.

## **4.1 GEOGRAPHY AND CLIMATE**

### **4.1.1 GEOGRAPHY**

The Management Area is located in western Riverside County, approximately 70 miles southeast of the City of Los Angeles. The area encompasses the Cities of Hemet and San Jacinto; unincorporated residential/commercial areas, including Valle Vista; and agricultural lands. State Highway 74 (Florida Avenue) crosses the valley in an east-west direction and State Highway 79 provides a north-south corridor for the region. The San Jacinto mountain range, to the east of the valley, is the dominant geographic feature of the region, rising to a height of 10,805 feet at Mount San Jacinto. Elevations on the valley floor range from approximately 1,400 to 1,800 feet. There are various bedrock outcrops in the area, none of which exceed 2,700 feet.

The San Jacinto Watershed (Figure 4.1) includes the Management Area and surrounding mountains and covers an area of approximately 728 square miles, measured above a point just downstream from Railroad Canyon Dam. All of the streams and rivers in the watershed are ephemeral, flowing only when precipitation occurs and losing much of this flow to groundwater infiltration. The San Jacinto River arises in and drains the western slopes of the San Jacinto Mountains. Waterways tributary to the river include the North and South Forks and Strawberry, Indian, Poppet, and Bautista Creeks. Lake Hemet, located in the mountains on the South Fork of the San Jacinto River, is a 12,775 AF capacity LHMWD-operated reservoir completed in 1895. The San Jacinto River recharges the groundwater basin, primarily in the area southeast of the City of San Jacinto. It then occasionally flows northwest past the Lakeview Mountains, filling Mystic Lake, before turning southwest to flow across the Perris Valley floor. The San Jacinto River ultimately flows into Lake Elsinore via Railroad Canyon and Canyon Lake. Lake Elsinore, when full, overflows into Temescal Wash, which joins the Santa Ana River near Prado Dam.



Legend	
	San Jacinto Groundwater Basin*
	Major Watercourses
	Lakes and Reservoirs
	Cities
	Management Area
<b>Agency Boundary</b>	
	1 Box Springs Mutual Water Company
	2 City Of Hemet Water Dept.
	3 City Of Perris Water Dept.
	4 Elsinore Valley WD
	5 Fern Valley WD
	6 Idyllwild WD
	7 Lake Hemet MWD
	8 Nuevo Water Company
	9 Pine Cove WD
	10 San Jacinto Water Dept
	11 Soboba Indian Reservation
	12 EMWD
	13 Western Municipal WD



### San Jacinto Watershed

Hemet / San Jacinto Water Management Plan

October 2007

Figure 4.1

\*Source: DWR, 2003

#### 4.1.2 CLIMATE

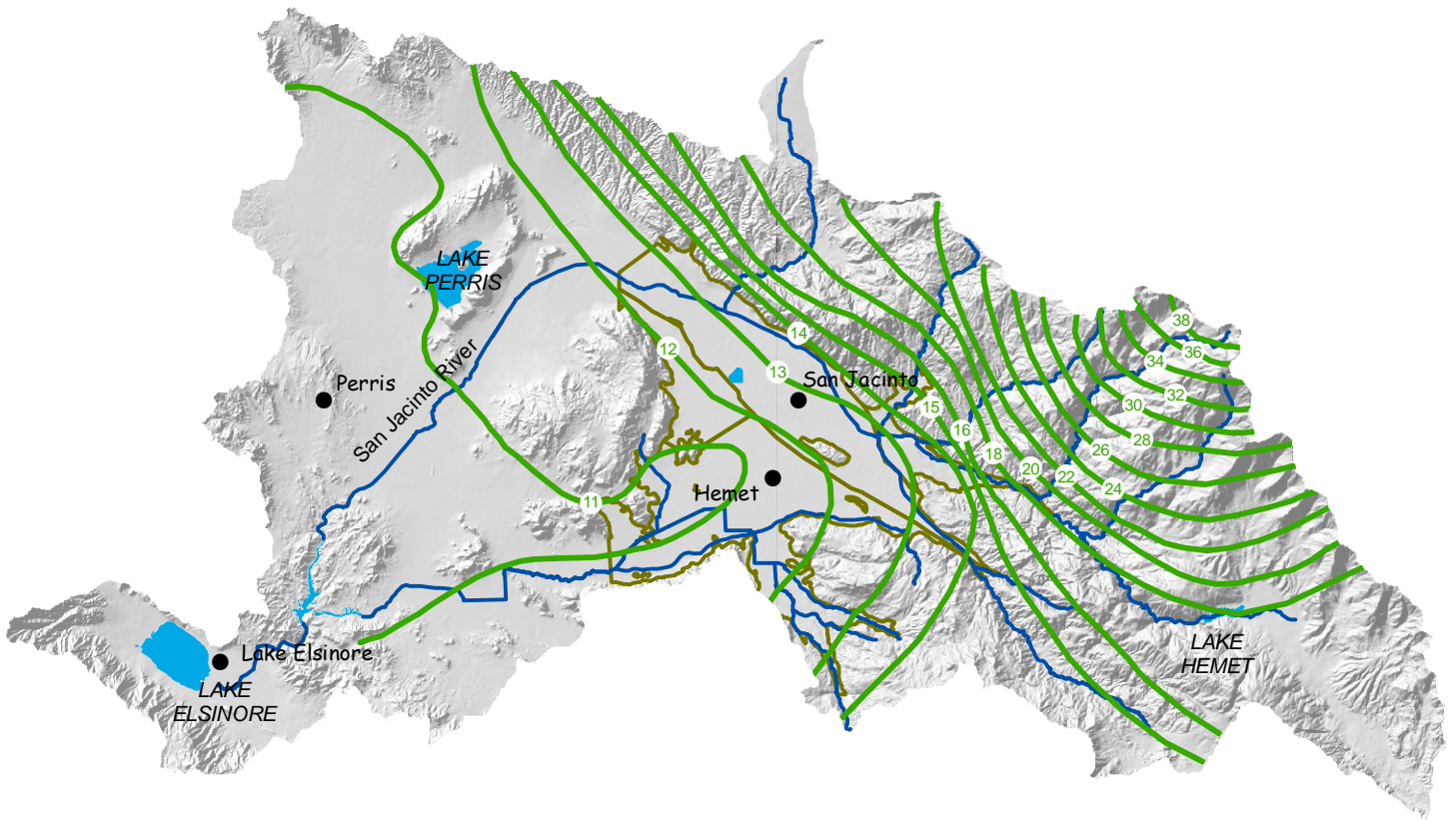
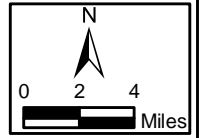
The climate of the area is that of a dry, semi-arid, near-Mediterranean zone, typical of the moderately elevated inland valleys of southern California. The climate is characterized by wet and dry seasons, generally low precipitation, and a large proportion of clear days, moderately high summer temperatures, and mild winter temperatures. The yearly average temperature at the City of San Jacinto is 62°F (25°C). Summer temperatures are often more than 100°F (38°C), and the recorded maximum at San Jacinto is 120°F (49°C). Frost occasionally occurs during the December through February period. The lowest recorded temperature was 7°F (-14°C). The average frost-free period is 247 days long, from March 15 to November 19. These temperatures for the San Jacinto climate station are considered to be generally representative of temperatures throughout the valley area.

Along with the rest of Southern California, the area is subject to the annual Santa Ana winds. Usually occurring in the fall of the year, these winds blow from the northeast, bringing hot, dry desert air with velocities of up to 50 miles per hour. Relative humidity has at times dropped below 5 percent with temperatures of 105°F (40°C) and higher. This phenomenon normally lasts only a few days, but has been known to last for several weeks, thereby greatly increasing the evaporation rate.

As a result of the hot, dry climate, the area has a high rate of evapotranspiration. Evapotranspiration is recorded as reference evapotranspiration (ET<sub>o</sub>; evapotranspiration from a standardized grass surface) by the DWR's California Irrigation Management Information System. Reference evapotranspiration averages 57 inches per year and is highly seasonal, with an average monthly maximum of 7.9 inches in July and average monthly minimum of 2.0 inches in December (DWR CIMIS, 2006).

Virtually all precipitation falls in the winter months, with some summer thunderstorms. Topography generally controls the relative amounts of precipitation from one location to the next. The average precipitation on the valley floor is about 13 inches, but near Mt. San Jacinto, the average precipitation is approximately 40 inches. Figure 4.2 shows the distribution of precipitation in the watershed.

The Riverside County Flood Control and Water Conservation District (RCFC&WCD) currently maintains precipitation records from the National Weather Service precipitation gauge at the California Division of Forestry Station at 1<sup>st</sup> Street and San Jacinto Avenue in San Jacinto (Site #186). Annual San Jacinto precipitation totals for the 1850/51 through 2004/05 rain years (July – June) are shown in Figure 4.3. For the 155 years from July 1850 through June 2005, average precipitation equaled 13.12 inches; median precipitation was 12.13 inches; the year with



**Legend**

- Equal Precipitation (in)\*
- Management Area
- Lakes and Reservoirs
- Major Watercourses
- Cities



## Average Annual Precipitation

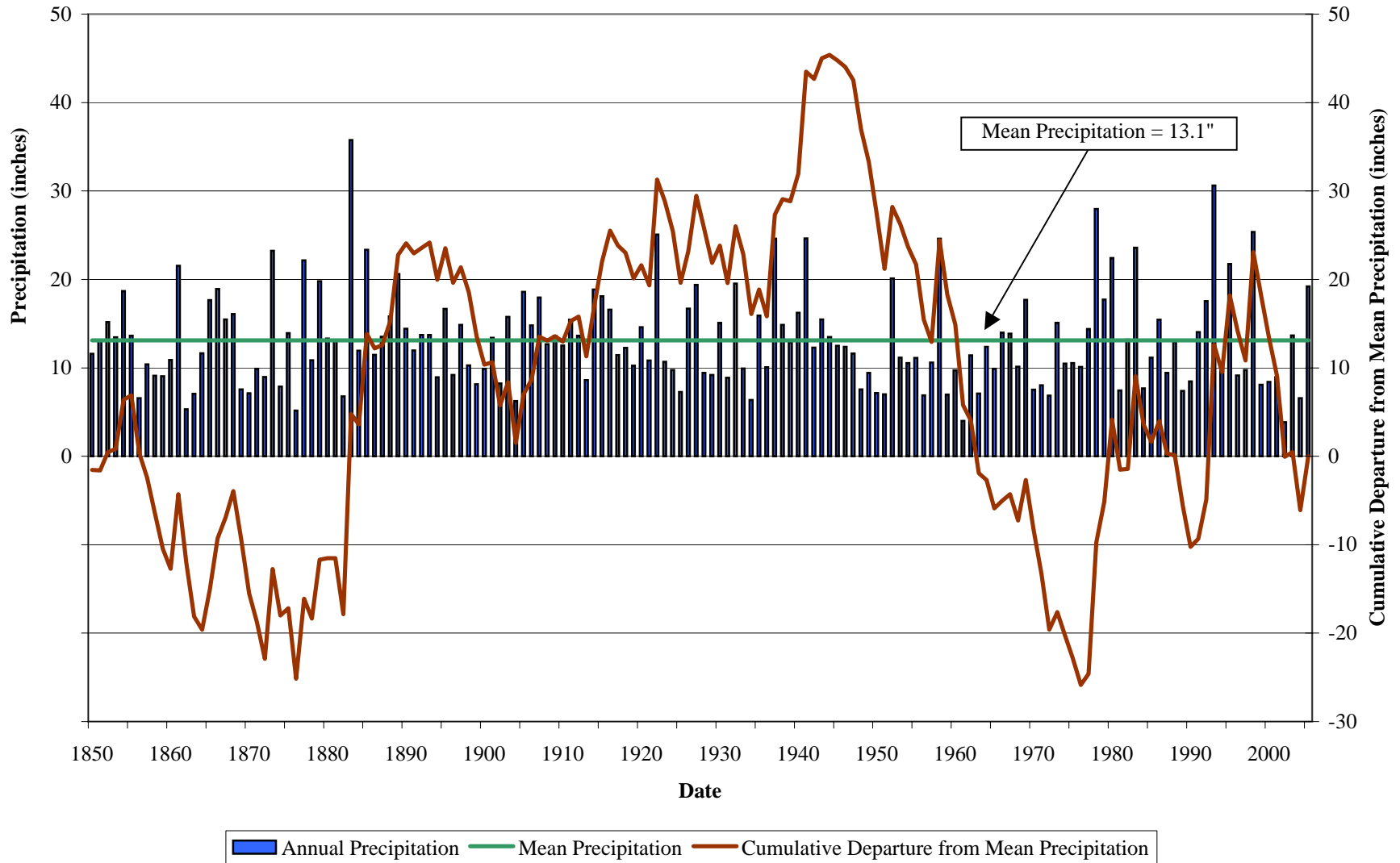
Hemet / San Jacinto Water Management Plan

\*Source DWR, 1978  
(1932 - 1964 data)

October 2007

Figure 4.2

**Figure 4.3 Annual Precipitation and Cumulative Departure from Mean Precipitation**



the highest precipitation was 1883/84 with 35.77 inches of rain; and the driest year was 2001/02 with 3.85 inches. Figure 4.3 also shows the cumulative departure from mean precipitation. This chart represents wet periods with increasing values, such as 1882-1890 and 1990-1998; normal periods with near-constant values, such as 1859-1881 and 1980-1988; and dry periods as decreasing values, such as 1944-1976 and 1999-2004.

## 4.2 SURFACE WATER CONDITIONS

The San Jacinto River and its tributaries are the primary surface water elements in the Management Area. This river and its tributaries provide water for direct use, artificial recharge, as well as for significant natural recharge to the groundwater system through the riverbeds. The San Jacinto River contains high quality water that flows from the mountain watershed and recharges groundwater. The river is a losing stream throughout the Management Area. Artificial and natural recharge of San Jacinto River water improves the overall quality and quantity of groundwater. Groundwater levels have been lowered over the years to the point where additional changes in groundwater levels has little or no impact on surface flows or vice versa, although in predevelopment conditions groundwater contributed to surface flows in swampy areas of the basin floor, particularly upgradient of faults.

EMWD and RCFC&WCD have partnered with USGS to monitor stream flows. USGS gaging stations along the San Jacinto River and its tributaries in the Hemet/San Jacinto and surrounding area are listed in Table 4.1, below.

In 1996, EMWD entered into a Cooperative Water Program Joint Funding Agreement with the USGS for a long-term water budget study in the San Jacinto area. As part of this project, the USGS installed two stream flow gages and three stage gages in the San Jacinto Watershed.

The USGS applied a rainfall-runoff model to estimate the water budgets for groundwater and surface water flows and to determine the hydrological effects of urbanization. The study used historical precipitation data with the model to produce a simulated long-term record of groundwater recharge and surface water runoff for a variety of potential urbanized conditions. The major objectives of the study were to:

1. Estimate groundwater recharge and surface water flows in the Canyon and Upper Pressure Management Zones;
2. Summarize the long-term water budget of the study area upstream of Mystic Lake; and
3. Determine the effects of urbanization in the study area.

**Table 4.1 USGS Surface Water Gaging Stations**

Station No.	Description:	Lat.; Long.*	Data Type	Time Frame
11069200	Lake Hemet WC up Canyon near San Jacinto	33°44'20"; 116°49'30"	Daily flows	1961-1991
11069300	WF San Jacinto Tributary near Valle Vista	33°43'20"; 116°48'00"	Peak flows Daily flows	1962-1973 1961-1967
11069500	San Jacinto River near San Jacinto (Cranston Ranger Station)	33°44'17"; 116°49'59"	Real time Peak flows Daily flows Water Qual.	1921-present 1920-present 1998
11069501	San Jacinto River near San Jacinto plus Canals	33°44'17"; 116°49'59"	Daily flows	1948-1990
11070000	Bautista Creek Near Hemet	33°41'40"; 116°51'00"	Peak flows Daily flows	1947-1969 1947-1969
11070020	Bautista Creek at head of Flood Channel in Hemet	33°42'42"; 116°52'04"	Peak flows Daily flows	1988-2003 1987-present
11070050	Bautista Creek at Valle Vista	33°44'04"; 116°53'33"	Peak flows Daily flows	1970-1987 1969-1987
11070150	San Jacinto River above State Street near San Jacinto	33°49'17"; 116°58'21"	Peak flows Daily flows	1997-present 1996-present
11070158	Line D Storm Drain at Santa Fe St. near San Jacinto	33°46'44"; 116°57'46"	Peak flows	1997-1999
11070160	Line E Storm Drain at Santa Fe St. near San Jacinto	33°46'41"; 116°58'18"	Peak flows	1997-1999
11070185	Lamb Canyon at Victory Ranch near San Jacinto	33°51'31"; 117°00'53"	Peak flows	1997-2004
11070190	Laborde Canyon near San Jacinto	33°51'44"; 117°01'29"	Peak flows	1962-1973
11070210	San Jacinto River at Ramona Expressway near Lakeview	33°50'23"; 117°08'06"	Real time Peak flows Daily flows	2001-present 2000-present

\* The longitude and latitude measurements are published figures, but were estimated by the USGS from maps and, therefore, only have an accuracy of +/- 500 feet.

Five gages were installed upstream of Bridge Street in the San Jacinto basin area. Two stream flow gages were installed in the San Jacinto River, one at the State Street (Highway 79) crossing and the other at the Cranston Ranger Station. Three crest stage gages were installed in Potrero Canyon near San Jacinto, Lamb Canyon near San Jacinto, and at an urban runoff site.

Groundwater recharge in the Canyon and Upper Pressure Management Zones was calculated in addition to the surface runoff leaving the Management Area (including urban runoff) that reaches the Mystic Lake area. The study results are summarized in the USGS Water Resources Investigations Report 02-4090, *Rainfall-Runoff Characteristics and Effects of Increased Urban Density on Streamflow and Infiltration in the Eastern Part of the San Jacinto River Basin, Riverside County,*

*California*. The report includes all measured, simulated, and statistical data used to support the conclusions of the study.

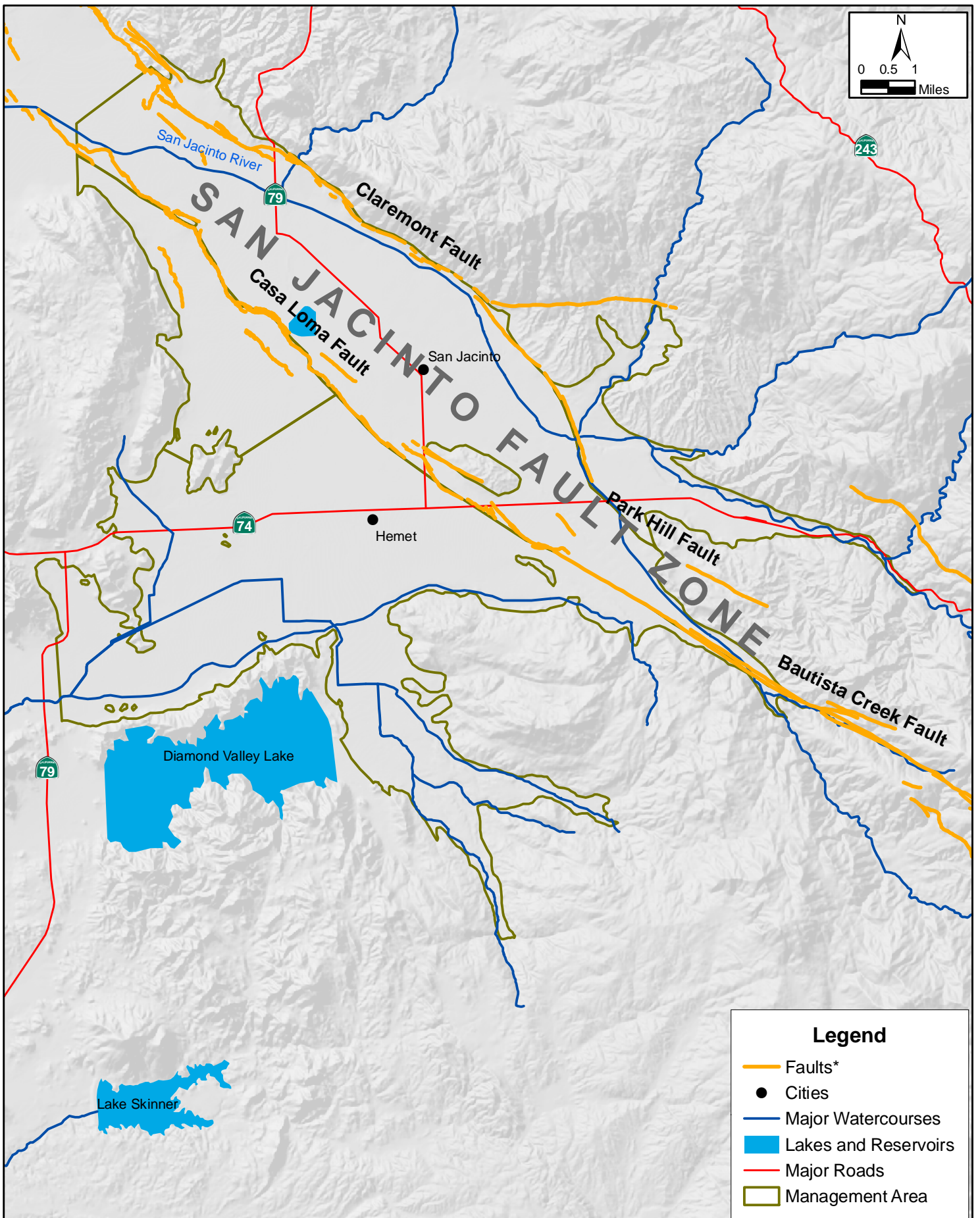
After the end of the study, some of the crest stage gages were no longer monitored and fell into disrepair. However, EMWD continues to fund, and USGS continues to operate, the stream gage on the San Jacinto River at State Street. The crest stage gage at Lamb Canyon Creek at Victory Ranch is still jointly funded by EMWD and USGS. For the 2005/2006 monitoring, the effort was funded as part of the Hemet/San Jacinto Monitoring Program by EMWD, LHMWD, and the Cities of Hemet and San Jacinto. The stream gage on the San Jacinto River at Cranston Ranger Station is currently funded and maintained by USGS and Riverside County Flood Control District with real-time data available on the USGS website.

### **4.3 GEOLOGY**

The geology of the Hemet/San Jacinto area, relevant to groundwater supplies, has two primary features: a sediment filled graben, and the San Jacinto fault zone. The sediments in the graben provide for the majority of storage and movement of groundwater in the area and the movement of water is altered by the presence of the faults, which provide most of the internal boundaries for the area's Management Zones.

The Management Area partially contains a geomorphic feature known as a graben or fault-graben, along with additional permeable materials in alluvium-filled valleys. A graben is a depressed, trough-like structure in the Earth's crust, filled or partially filled with sediments, and usually formed by faulting and the relative downward movement of block-like geologic structures. The San Jacinto graben is a deep, sediment-filled structure approximately 2.5 miles wide and more than 20 miles long and forms the Upper Pressure Management Zone's boundaries in the Management Area. The Management Area, including the graben, is nearly surrounded by impermeable bedrock mountains and hills. Internally, island-like masses of granite and metamorphic bedrock or older alluvium rise above the valley floor. Surface and near-surface sediments in the graben and alluvium filled valleys are primarily sand and sandy silt with some silt and silty clay. The San Jacinto graben consists of a forebay area in the southeast where surface water recharge primarily occurs and a pressure area in the northwest where deep aquifers exist under confined conditions. The northwest-southeast oriented graben is formed by the right-slipping San Jacinto fault zone, believed to be the most seismically active in southern California. Between 1899 and the present, seven earthquakes of Richter magnitude 6.0 or greater have occurred along the San Jacinto fault between the San Gabriel Mountains and Mexico. This complex zone of faulting and cross faulting has two main branches, the Claremont and the Casa Loma, which form the northeast and southwest borders of the graben, respectively (see Figure 4.4).





### Fault Locations

Hemet / San Jacinto Water Management Plan

October 2007

Figure 4.4

\*Source: Riverside County



The Claremont fault separates the graben from the Badlands and the San Jacinto Mountains on the northeast. This fault follows Gilman Springs Road from State Highway 60 to the City of San Jacinto, hugging the foothills. It then follows the San Jacinto River before shifting to Bautista Creek south of Valle Vista. To the west, the Casa Loma fault generally parallels the Claremont Fault. The Casa Loma portion of the San Jacinto fault zone forms the southwesterly border of the graben. It runs from Park Hill (also known as Casa Loma) to the northwest toward Reche Canyon. The Bautista Creek fault is an extension of the Casa Loma fault, but is separately named due to differences in fault movement (DWR, 1969). The Bautista Creek fault runs from Bautista Canyon through the intersection of Menlo and San Jacinto Streets, joining the Casa Loma fault on the western side of Park Hill.

The portions of the Management Area outside the graben, to the east of the Claremont Fault and to the west of the Casa Loma and Bautista Creek faults, are sediment filled basins. These sediments are similar in nature to those in the graben, but are much thinner.

The faulting in the Management Area plays an important role in the movement of groundwater and is therefore a key factor in the delineation of Management Zones.

#### **4.4 DELINEATION OF MANAGEMENT ZONES**

Groundwater Management Zones (Figure 2.1) were delineated by the RWQCB based on major impermeable boundaries (such as bedrock or faults), flow systems that prevent widespread mixing even without a physical barrier, and water quality. Groundwater flow, whether or not determined by a physical barrier, was the primary characteristic used to define the Management Zones. Water quality data were used to support understanding of the flow regime and to assure that unusually high quality or poor quality waters were distinguished for regulatory purposes. (RWQCB, Resolution No. R8-2004-0001).

The four Management Zones within the Hemet/San Jacinto Management Area are:

1. Canyon;
2. San Jacinto Upper Pressure (Upper Pressure);
3. The Hemet North portion of Lakeview/Hemet North (Hemet North); and
4. Hemet South.

The Canyon Management Zone lies along a northwest to southeast axis in the eastern part of the Management Area. The boundaries of the Canyon Management Zone include the virtually impermeable San Jacinto Mountains to the east and Claremont Fault to the west. The Claremont Fault inhibits flow between Canyon and Upper Pressure Management Zones (DWR, 1969; DWR, 1978; SWRB, 1955).

Like the Canyon Management Zone, the Upper Pressure Management Zone lies along a northwest to southeast axis in the eastern part of the Management Area. The Upper Pressure Management Zone is bounded by the Claremont Fault to the northeast, the Casa Loma and Bautista Creek Faults to the southwest, and the flow system boundary with the San Jacinto Lower Pressure Management Zone to the northwest.

Boundaries of the Hemet North Management Zone include the Casa Loma Fault to the east; the groundwater divide near Esplanade Avenue to the south; the impermeable bedrock of the Lakeview Mountains to the west; and a constricted area of permeable materials between the Lakeview Mountains and the Casa Loma Fault to the northwest. The Casa Loma fault zone is a known barrier to groundwater flow (DWR, 1969; DWR, 1978; SWRB, 1955).

The Hemet South Management Zone boundaries include the Casa Loma and Bautista Creek faults to the east; the groundwater divide near Esplanade Avenue to the north; the groundwater divide in the Winchester area and various crystalline bedrock outcrops to the west. Diamond Valley Lake, a water supply reservoir for the MWD completed in 1999 and filled by 2002, is located southwest of the Hemet South Management Zone. MWD (1991) states that seepage through the permeable materials in the upper 200 feet may take place. The Casa Loma and Bautista Creek faults are known barriers to groundwater (DWR, 1969; DWR, 1978; SWRB, 1955).

For the Management Area as a whole, the mountains (Figure 4.1) form a nearly impermeable boundary such that there are only three pathways for groundwater to migrate to or from other Management Zones outside the Management Area. These locations are:

- Between the Hemet South and Perris South Management Zones, in the southwest;
- Between the Hemet North portion and Lakeview portion of Lakeview/Hemet North Management Zones, in the northwest; and
- Between the Upper Pressure and Lower Pressure Management Zones, in the northwest.

Groundwater flow in and out of the Management Area is important, as water quality is typically better in the Management Area than in the surrounding areas.

## 4.5 SOILS

The influence of soils on water use and hydrologic processes makes it an important component to consider when estimating changes in water use due to land use change as well as for siting spreading basins for artificial recharge projects.

The predominant soils, as defined in the USDA's soil survey (USDA, 1971) at the series level, in the Management Area are shown in Figure 4.5 and are listed below:

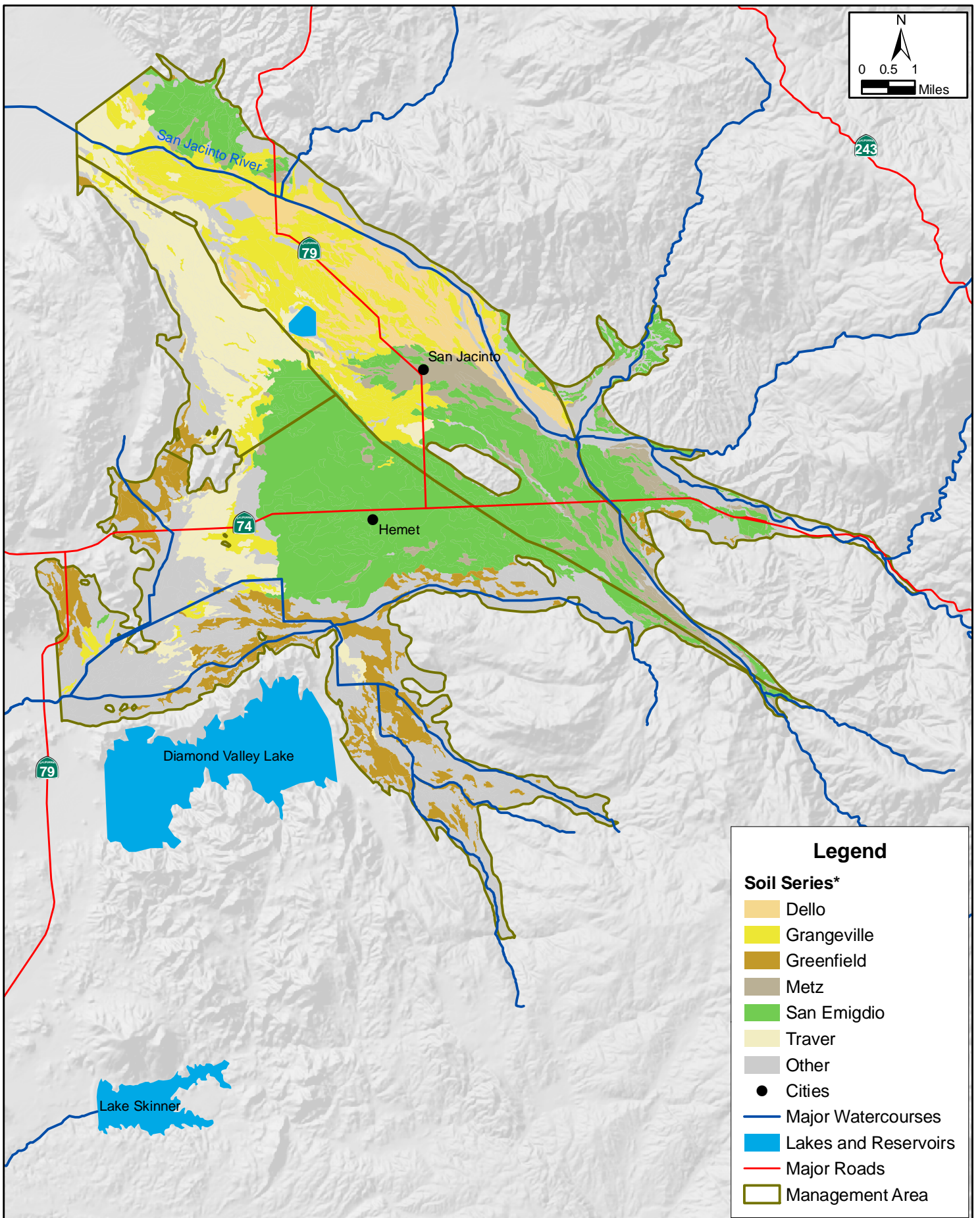
- Dello,
- Grangeville,
- Greenfield,
- Metz,
- San Emigdio, and
- Traver.

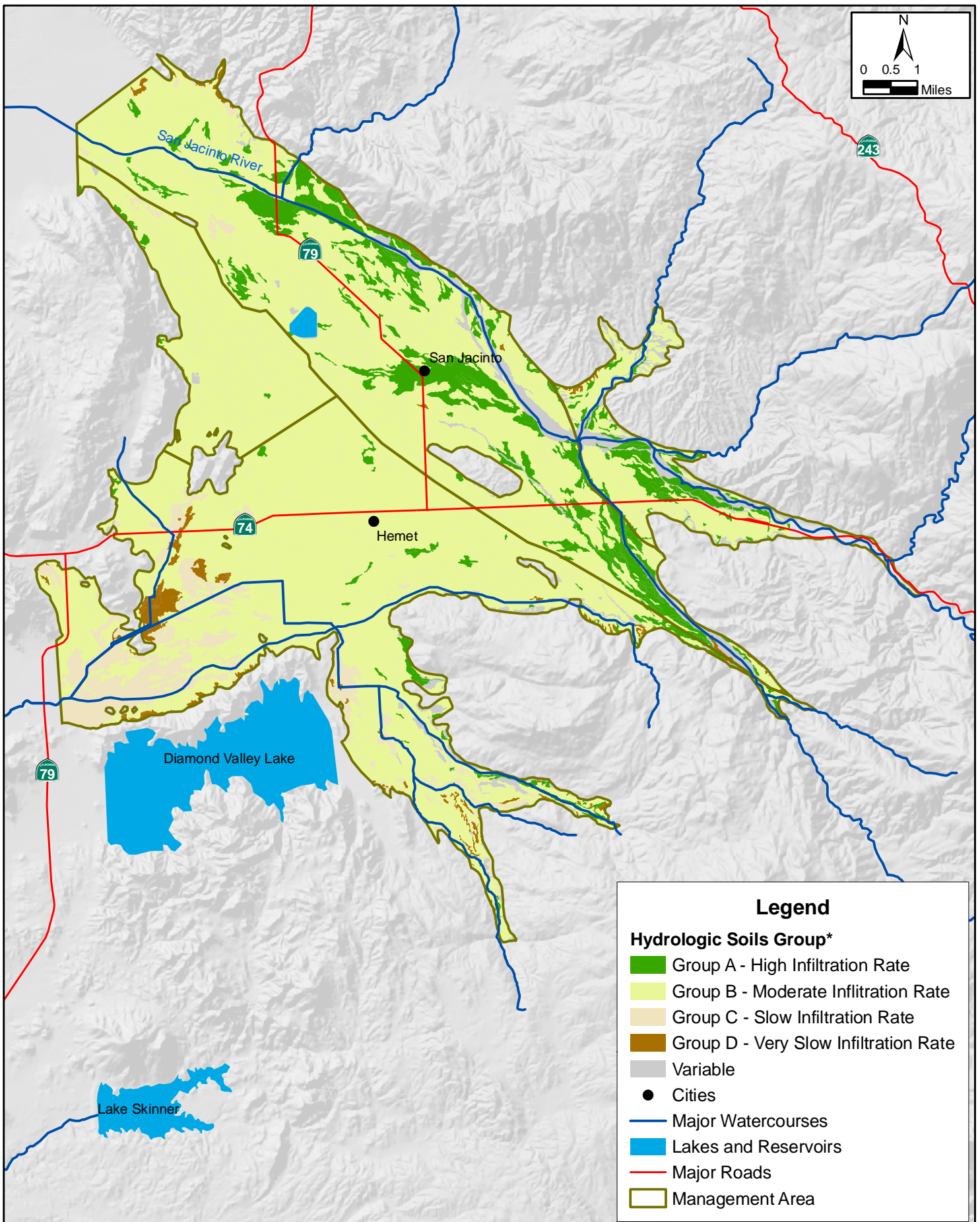
The remaining soils are classified as "Other" in Figure 4.5 and consist of Chino, Domino, Exeter, Hanford, Pachappa, Ramona, Riverwash, as well as other soil series occurring in less than one square mile of the Management Area.

An important soil classification used by the USDA for hydrology is the hydrologic soils group. The hydrologic soils group can be used to estimate the amount of infiltration that can be expected from a certain soil. This grouping is based on estimates of the intake of water during the latter part of a storm of long duration, after the soil profile is wet and has an opportunity to swell, without the protective effect of any vegetation. Also considered are depths to the seasonal high water table and to a low permeability layer. The classification is useful at a planning level, but detailed studies are required for a thorough understanding of the infiltration capacity of soils. Features such as slope, ground cover, or low permeability materials away from the upper soil profile may impact the soil's capability to infiltrate water.

Under the hydrologic soils group classification system, soils are grouped A to D with "A" having the lowest runoff potential (highest infiltration rates) and "D" having the highest runoff potential (lowest infiltration rates). A map of hydrologic soils groups is provided as Figure 4.6 (USDA-SCS, 1971) and a corresponding table of hydrologic soil groups and soil series is provided in Table 4.2. As can be seen on Figure 4.6, most of the Management Area is classified as "B", soils with a moderate infiltration rate. Of the Management area, nearly 80% are "B" soils, 10% are "A" soils, and the remainder are either "C", "D", or are deemed too variable to be classified. The "A" soils are generally located along the San Jacinto River and Bautista Creek; much of the "variable" soils along these watercourses also have the potential for very high infiltration rates.









**Table 4.2 Hydrologic Soils Groups**

<b>Common Soil Series</b>	<b>Hydrologic Soils Group</b>	<b>Minor Soil Series</b>	<b>Hydrologic Soils Group</b>
Dello	A-C	Chino	B-C
Grangeville	B-C	Domino	C
Greenfield	B	Exeter	C
Metz	A	Hanford	B
San Emigdio	B	Pachappa	B
Traver	B-C	Ramona	B-C
		Riverwash	variable
		Other	variable

**4.6 GROUNDWATER CONDITIONS**

As previously stated, groundwater flow between Management Zones is inhibited by geologic faults, (Figure 4.4) notably the Casa Loma Fault, Bautista Creek Fault and Claremont Fault, all strands of the San Jacinto fault zone. The Claremont Fault acts as a barrier to flow between Canyon and Upper Pressure Management Zones, while the Casa Loma Fault is a barrier to flow between the Upper Pressure Management Zone and both the Hemet North and Hemet South Management Zones.

The San Jacinto River enters the basin in the southeast part of the Management Area and flows north and west across the Upper Pressure Management Zone. In most years, all river flow is lost to percolation and limited evapotranspiration in the Canyon and Upper Pressure Management Zones. Recharge from the San Jacinto River and its tributaries forms a large portion of total inflow for the Canyon and Upper Pressure Management Zones.

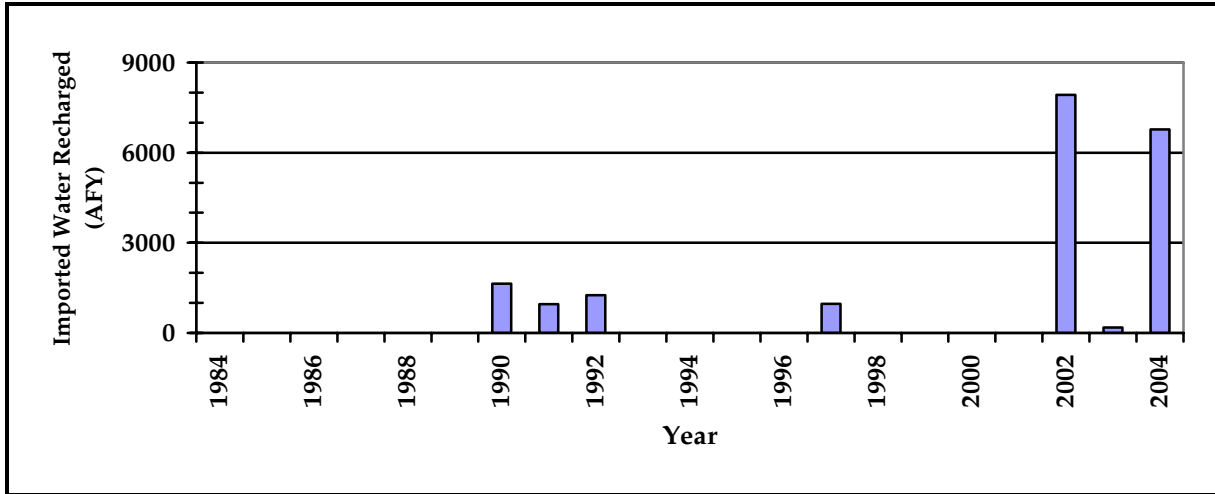
Groundwater pumping for irrigation and domestic purposes is the principal source of groundwater outflow. Major pumping depressions occur in the Hemet South and Upper Pressure Management Zones.

Historically, extraction in excess of recharge has resulted in lowered groundwater levels and altered directions of groundwater flow.

**4.6.1 ARTIFICIAL RECHARGE OPERATIONS**

In addition to natural inflows and return flows from agricultural and municipal uses, there has been and continues to be artificial recharge operations in the Management Area. These

operations use imported water, when available, typically at lower winter rates, to artificially recharge groundwater through spreading basins. The annual volume of imported water recharged is presented in Figure 4.7. Recharge operations did not begin until 1990. More recently, the Public Agencies have signed memoranda of understanding in 2004 and 2005 to plan for the recharge at two existing recharge facilities in the San Jacinto riverbed.



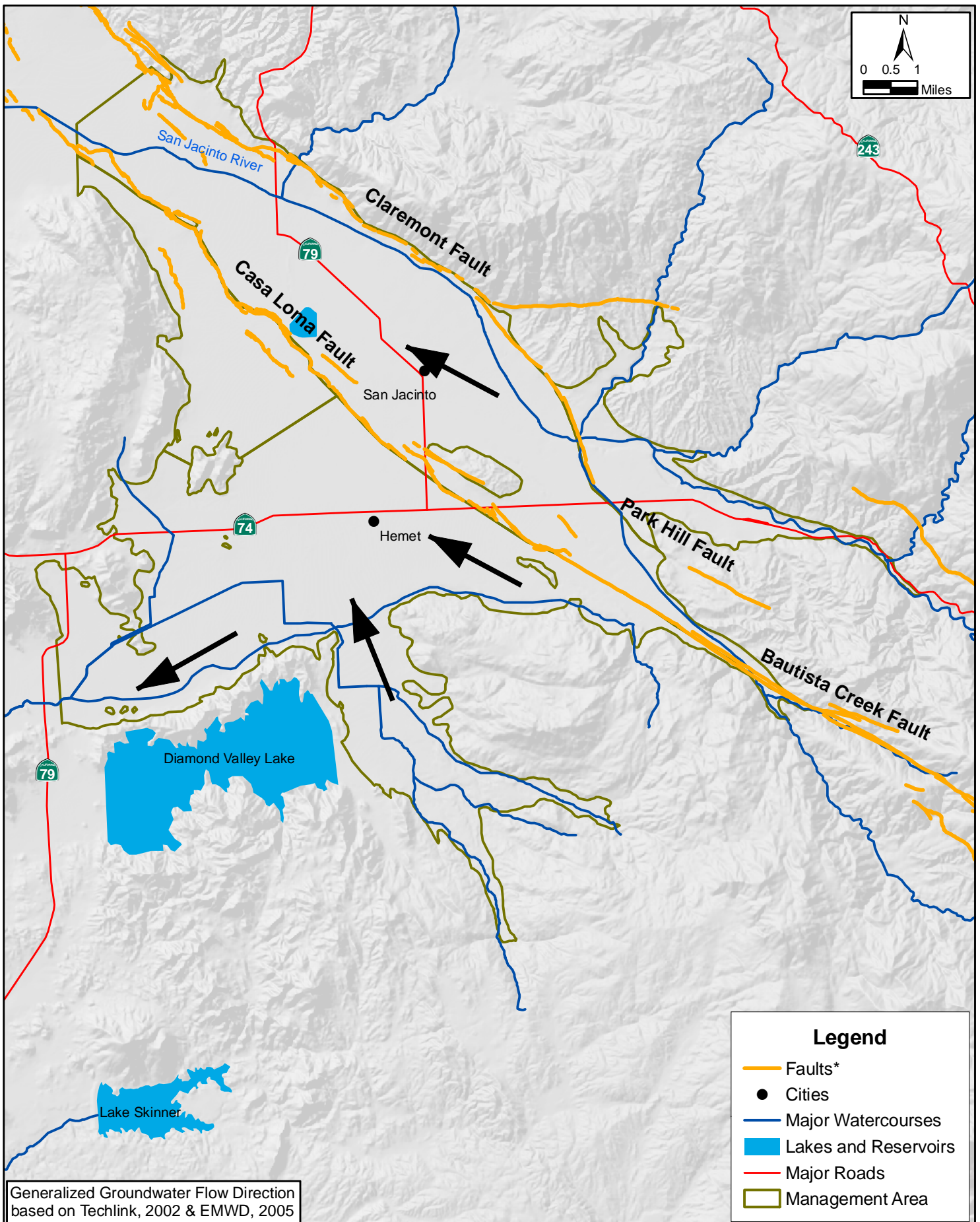
**Figure 4.7 Annual Imported Water Recharged**

The artificial recharge operations help address the impact of overdraft caused by past groundwater production.

**4.6.2 GROUNDWATER LEVELS AND FLOW**

Historical groundwater extraction from the Management Area has resulted in a significant drop in groundwater levels. The lowered groundwater levels also changed the direction of flow in parts of the Management Area. Figure 4.8 shows the flow directions in the early 20th Century. Figure 4.9 shows current flow directions. Notable changes over time include the development of a groundwater divide between the Hemet South and Perris South Management Zones (previously flow was out of the Hemet South Management Zone into the Perris South Management Zone and flow from the Hemet North portion to the Lakeview portion of the Lakeview/Hemet North Management Zone due to lower water levels in the Lakeview portion. (TechLink, 2002a)





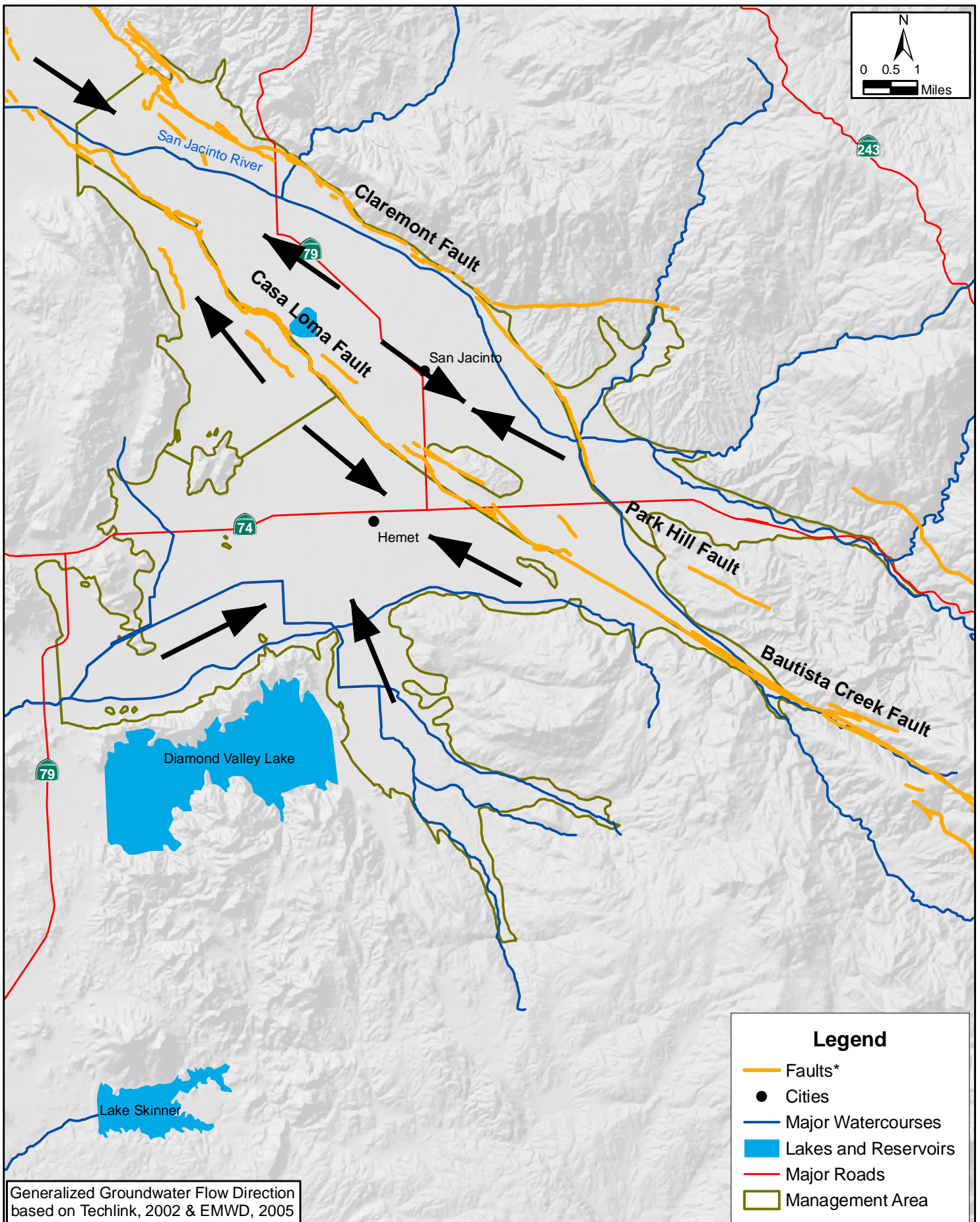
## Early 20th Century Groundwater Flow Direction

Hemet / San Jacinto Water Management Plan

\*Source: Riverside County

October 2007

Figure 4.8



## Current Groundwater Flow Direction

Hemet / San Jacinto Water Management Plan

\*Source: Riverside County

October 2007

Figure 4.9

Figure 4.10 shows Spring 2004 groundwater levels. The groundwater level contours show pumping depressions in the northeastern part of the Hemet South Management Zone and in the northwestern part of the Upper Pressure Management Zone. These pumping depressions are due to concentrated pumping in those areas in excess of the local recharge capacity.

Historical groundwater levels are affected by both climatic conditions, which impact the amount of recharge, and pumping. Historical conditions in the four Management Zones can be studied in relation to their unique setting by analyzing observed water levels at representative wells with long periods of record. Hydrographs for four selected wells are presented in the following sections. The locations of the wells can be found on Figure 4.11.

#### **4.6.2.1 Canyon Management Zone**

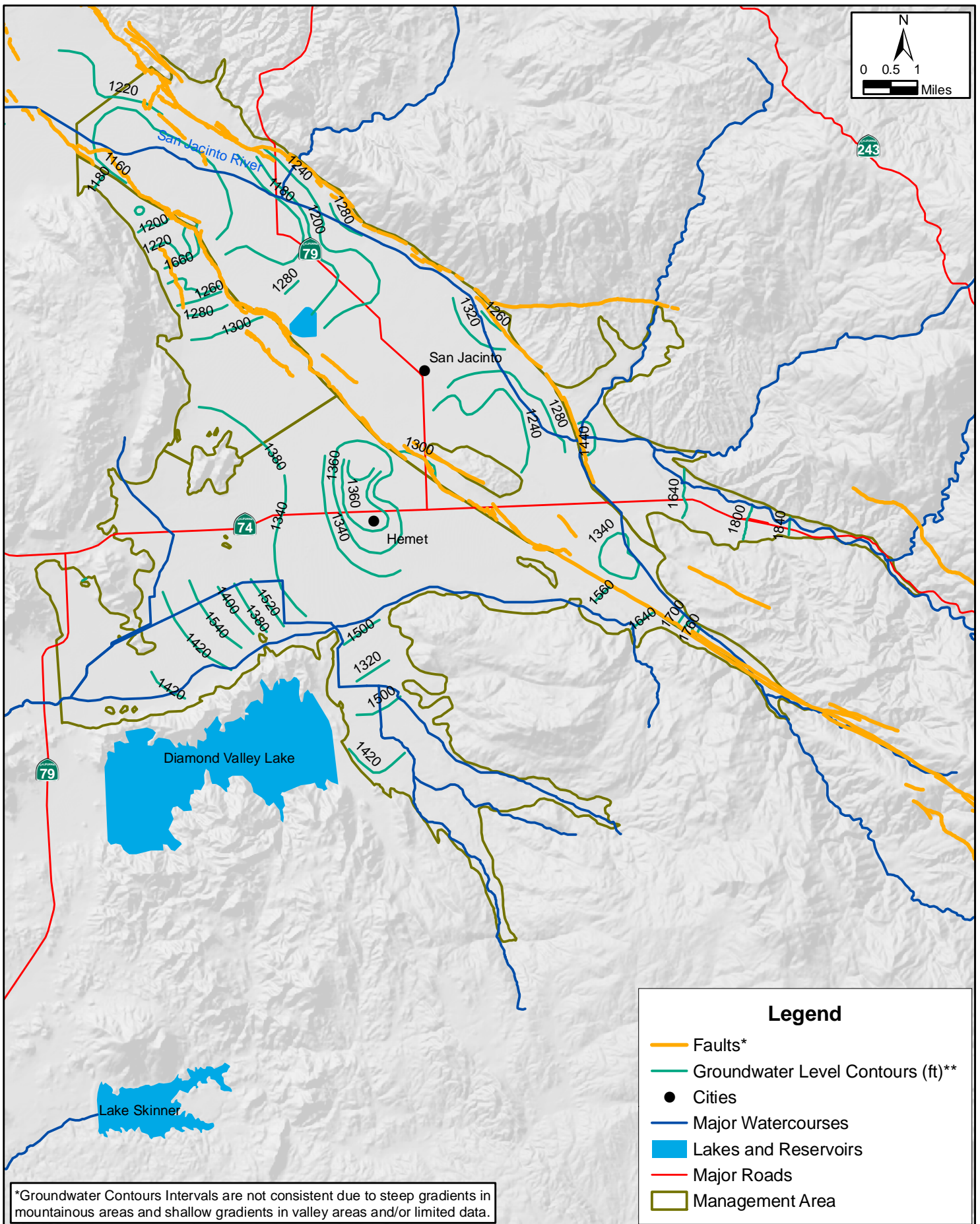
The Canyon Management Zone benefits from significant surface water recharge from the San Jacinto River and its tributaries. This additional recharge reduces the impact of the pumping occurring in the Canyon Management Zone. Figure 4.12 shows groundwater levels from 1948 to 2005 for EMWD's #6 Cienega well. This figure shows the impact of hydrologic variability and pumping in the area. One drought period in the late 1980s resulted in groundwater levels dropping by over 100 feet. Such declines in groundwater levels are likely due to a combination of reduced precipitation, reduced recharge from streamflow, and the effects of pumping. Most of this decline was recovered in the wet period that followed from 1991 to 1993.

Changes are also seen seasonally, with groundwater levels changing by as much as 100 feet from late fall to late spring. These seasonal changes in water levels are also due to a combination of reduced precipitation, reduced recharge from streamflow, and the effects of pumping.

#### **4.6.2.2 Upper Pressure Management Zone**

The Upper Pressure Management Zone benefits from surface water recharge from the San Jacinto River and its tributaries and supplies most of the groundwater for the Management Area. However, even with significant recharge from surface water as well as other inflows, wells in the Upper Pressure Management Zone have shown a decline in water levels over time. Figure 4.13 presents water level elevations for EMWD's #9 Hewitt and Evans well, showing a consistent decline through the dry period of the 1950s, 1960s, and 1970s with a drop of more than 200 feet over the 30-year period. The hydrologically wet and normal periods during 1978 to 1986 resulted in a recovery of about half the decline from the previous three decades. Since 1986, groundwater levels have dropped approximately 200 feet. The changes seen in the well

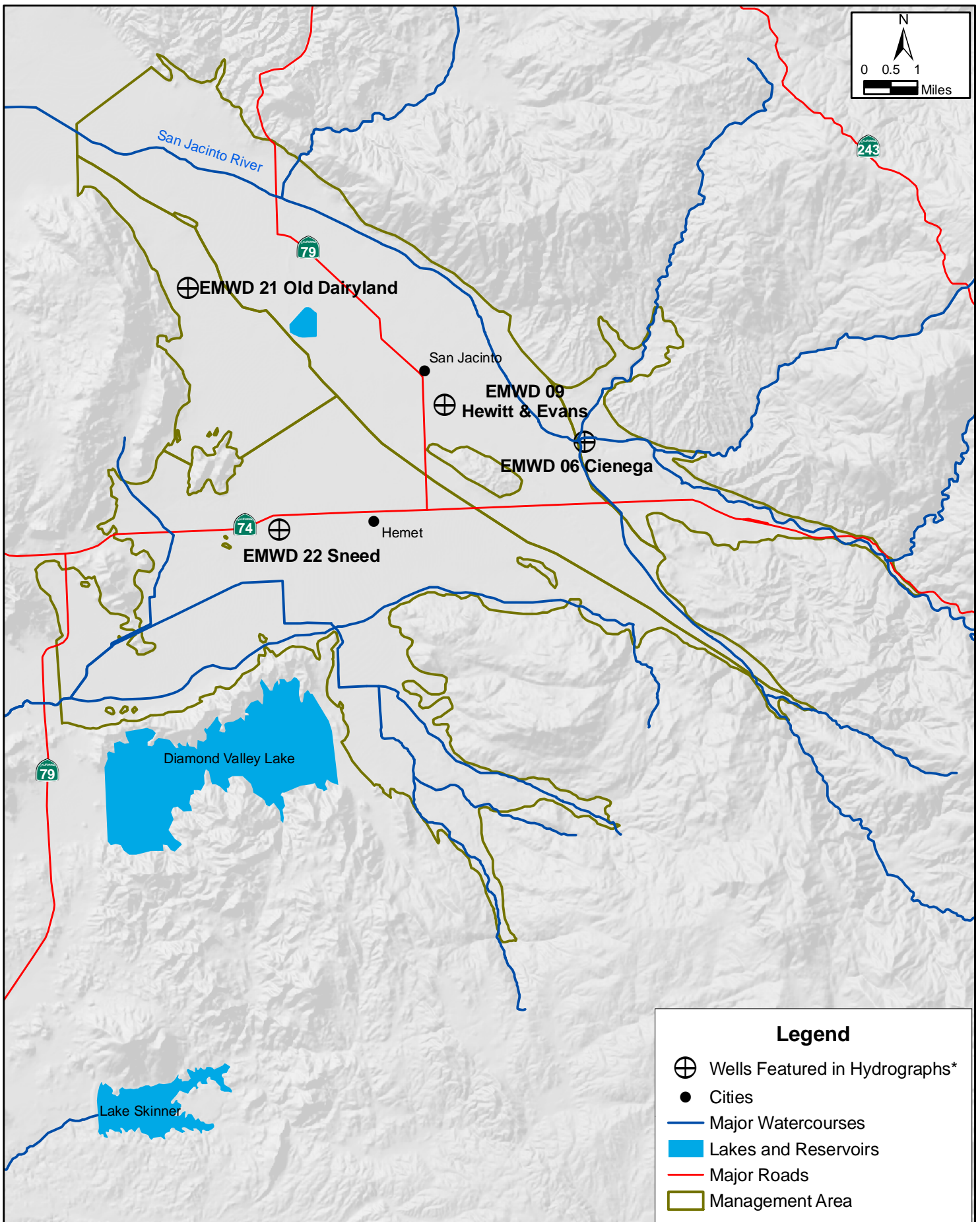




\*Groundwater Contours Intervals are not consistent due to steep gradients in mountainous areas and shallow gradients in valley areas and/or limited data.

**Legend**

- Faults\*
- Groundwater Level Contours (ft)\*\*
- Cities
- Major Watercourses
- Lakes and Reservoirs
- Major Roads
- Management Area



## Location of Representative Well Hydrographs

Hemet / San Jacinto Water Management Plan

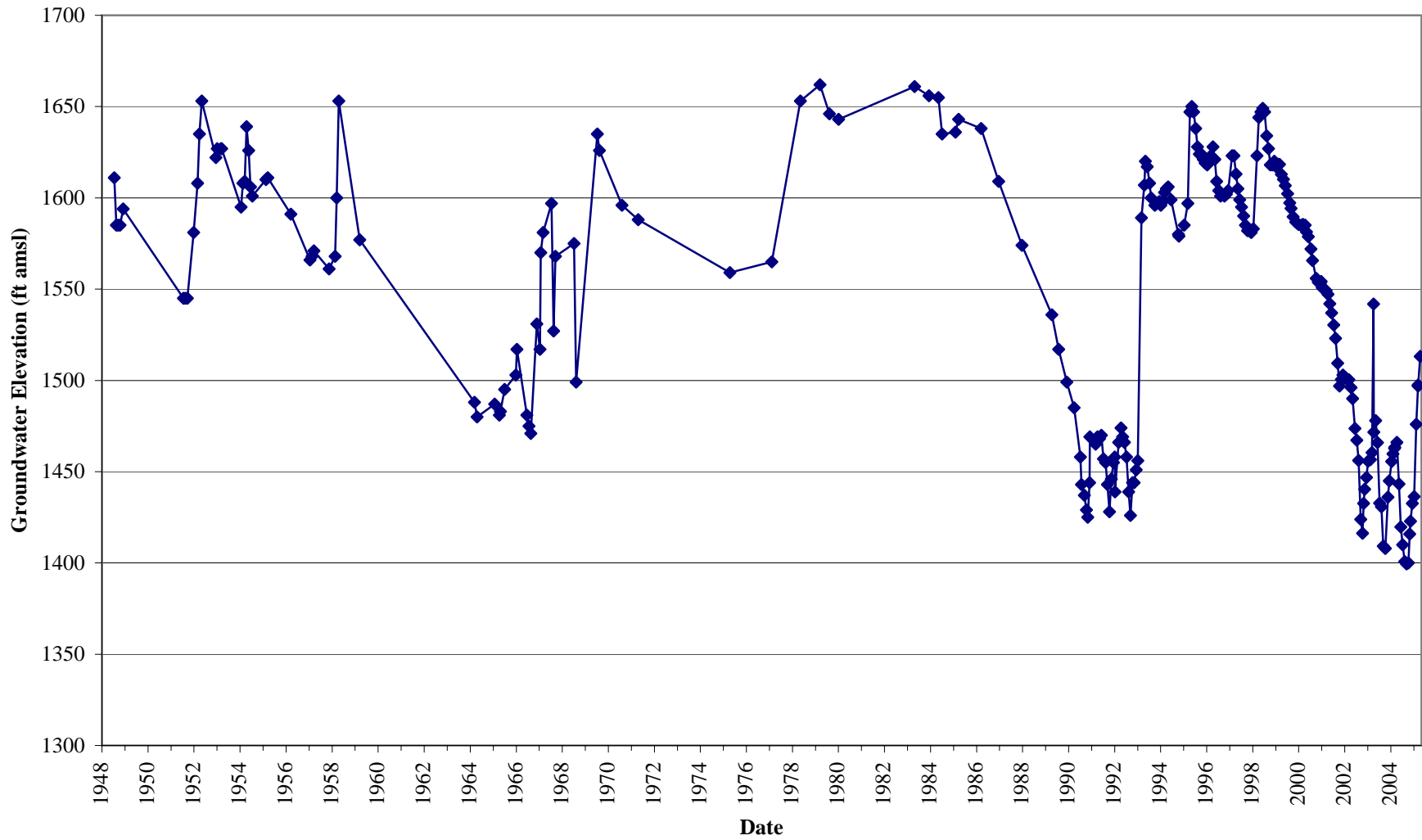
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Figure 4.11

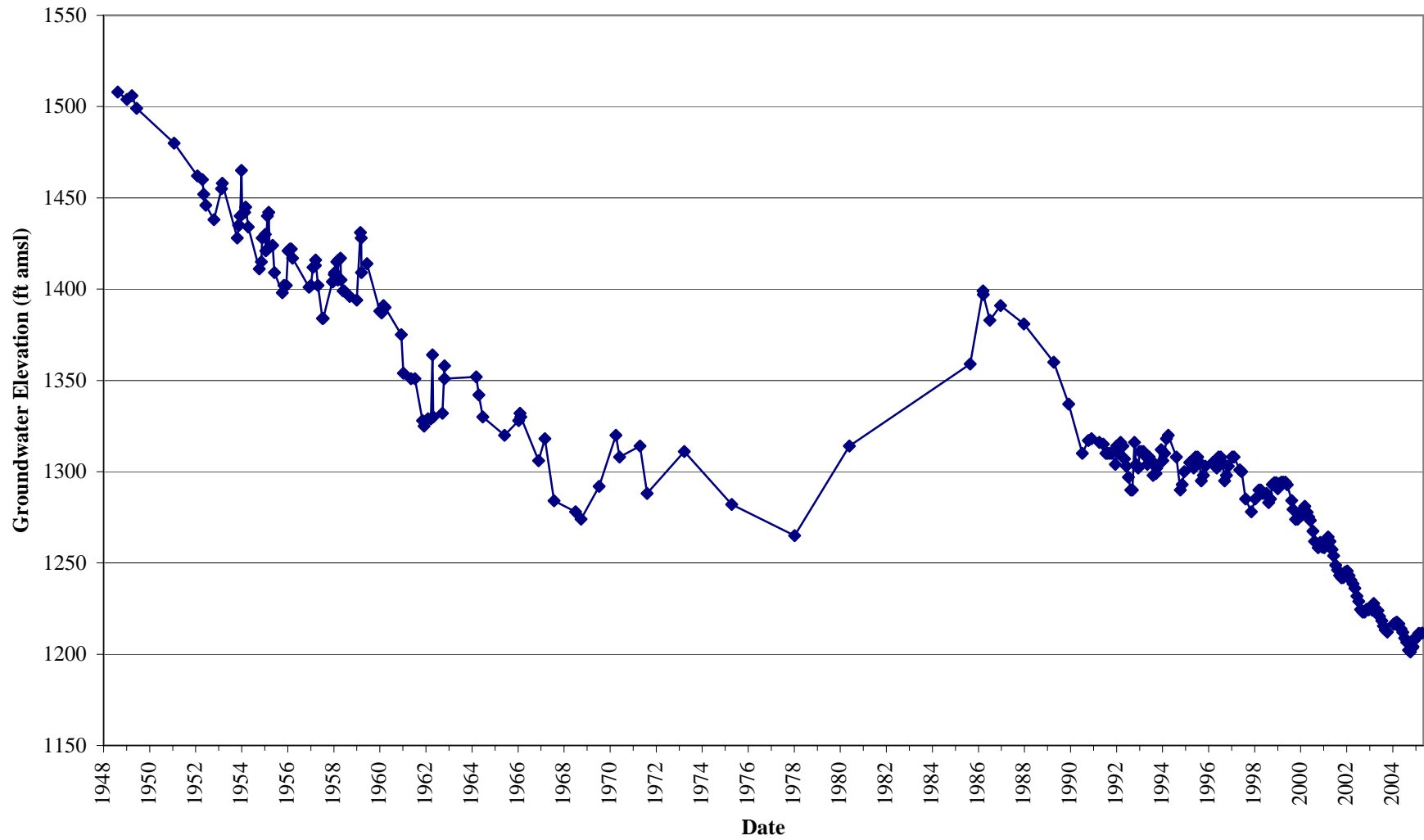


\*Source: EMWD

**Figure 4.12 Groundwater Elevation  
Canyon Management Zone, EMWD #6 Cienega**



**Figure 4.13 Groundwater Elevation**  
**Upper Pressure Management Zone, EMWD #9 Hewitt and Evans**



are likely due to a combination of reduced precipitation, reduced recharge from streamflow, and effects of pumping.

#### **4.6.2.3 Hemet North Portion of the Lakeview/Hemet North Management Zone**

Groundwater levels in Hemet North portion of the Lakeview/Hemet North Management Zone have shown a steady decline followed by recent stabilization. These declines occur even though significantly less water was pumped from the Hemet North portion than from other Management Zones. The Hemet North portion does not receive as much surface water recharge as Upper Pressure and Canyon Management Zones, thus impacts of pumping are more pronounced than they might be in those Management Zones. Figure 4.14 shows groundwater levels at EMWD's #21 Old Dairyland well. Since the beginning of the record in 1966, groundwater levels have steadily declined, with little variability. After dropping more than 100 feet from the mid-1960s to the mid-1990s, groundwater levels have stabilized at an average of 1,250 feet above mean sea level.

#### **4.6.2.4 Hemet South Management Zone**

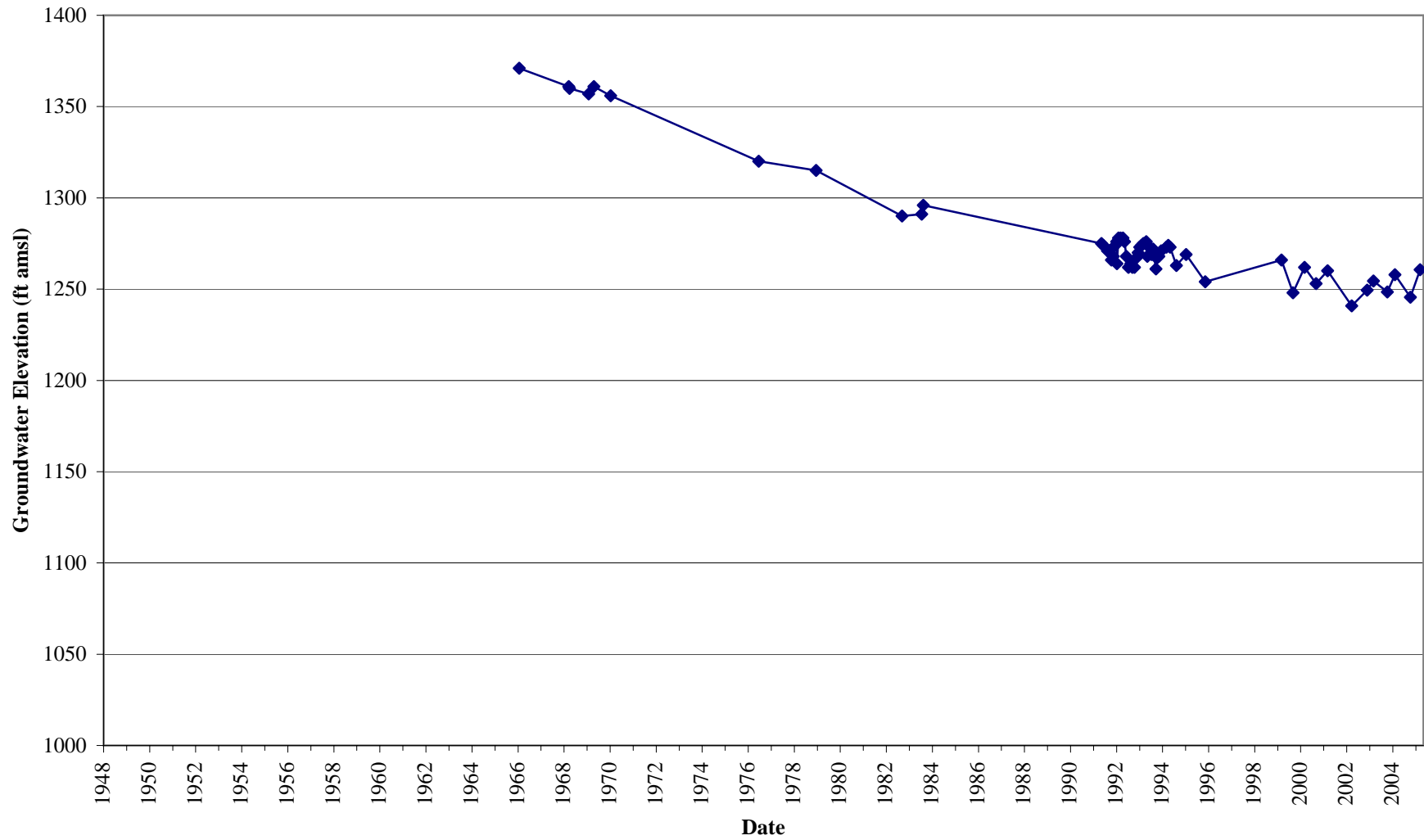
Groundwater levels in the Hemet South Management Zone have shown a steady decline, although the recent rate of decline has slowed. Figure 4.15 shows groundwater levels at EMWD's #22 Sneed well since the beginning of the record in 1952. While data is limited for the 1952 to 1990 period, groundwater levels declined through the 1952-1990 period, and the increased data available from 1990 to 2005 shows little variability. Groundwater level declines have slowed but have still dropped approximately 20 feet in the past 10 years.

### **4.6.3 GROUNDWATER BUDGET**

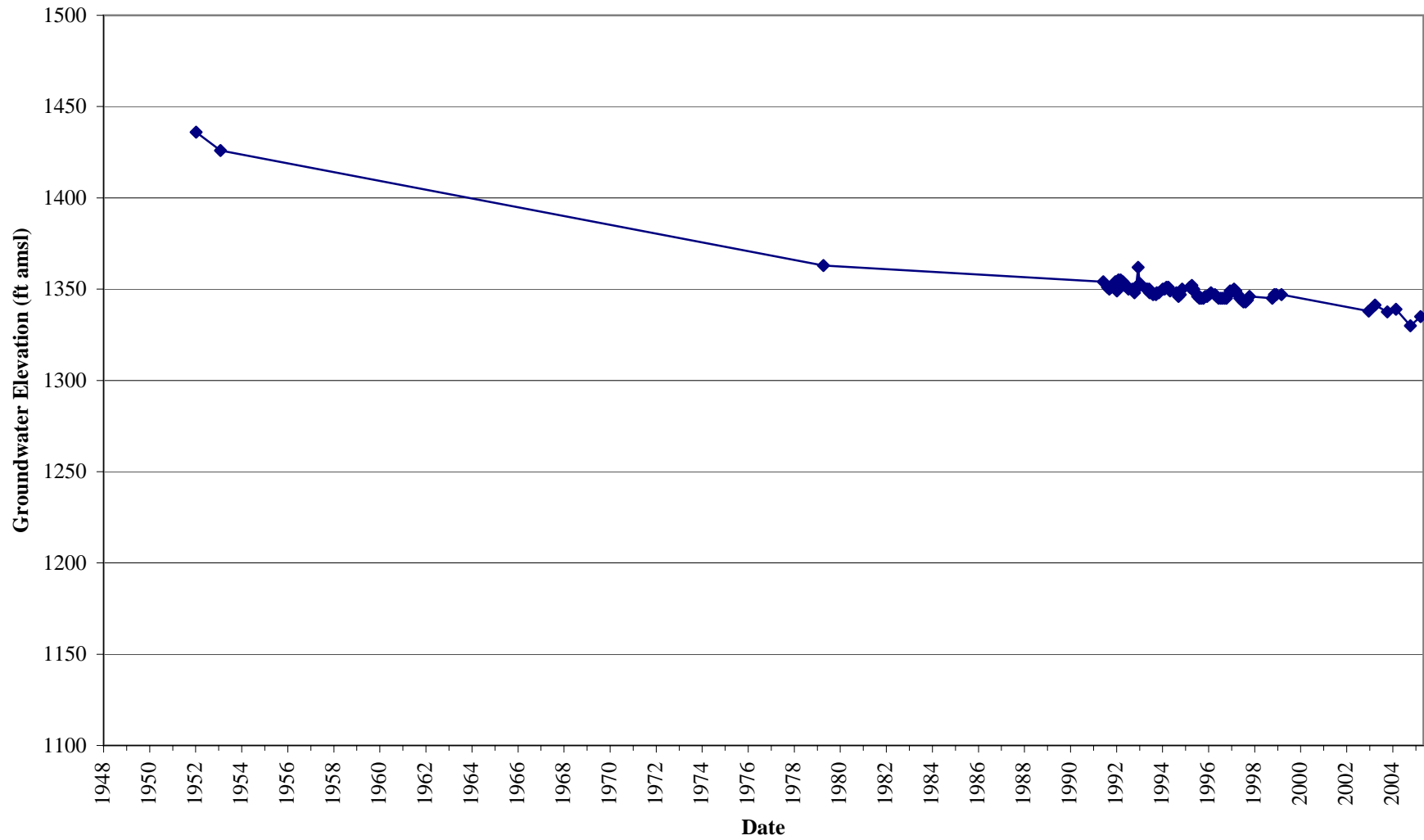
The changes in groundwater levels and flow directions are the result of changes in the balance of inflows and outflows from the Management Area. A groundwater budget can identify potential causes of an imbalance. The groundwater budget presented in Table 4.3 shows average annual values for the components of total inflow and total outflow. The values are based on a water balance spreadsheet tool developed for use by the TC. This Excel-based tool allowed the TC members to investigate the impact of inclusion and exclusion of specific water budget components, such as artificial recharge, imported water, and others, as well as the implications of different data sources, such as the calibrated groundwater model and the database or reported values with underflow estimates. This allowed for a more thorough understanding of the potential impacts of definitions of water budget components on the calculated yield and overdraft. The values presented in Table 4.3, as agreed upon by the TC, are the results of the calibrated groundwater model except for groundwater extraction, which is



**Figure 4.14 Groundwater Elevation**  
**Hemet North Management Zone, EMWD #21 Old Dairyland**



**Figure 4.15 Groundwater Elevation  
Hemet South Management Zone, EMWD #22 Sneed**



obtained from the data tabulated in *Assessment of Historical and Projected Land and Water Use Data* (WRIME, 2003a).

**Table 4.3 Groundwater Budget for the Management Area**  
(Average Annual Volume for Water Years 1984-2004\*)

Inflow Component	Volume (AFY)	Outflow Component	Volume (AFY)
Recharge from Rainfall	8,900	Groundwater Production	57,800
San Jacinto River and Bautista Creek Recharge	9,900	Subsurface Outflow from Hemet South to Perris South	300
Recharge from Public Agency Sales	2,900	Subsurface Outflow from Hemet North to Lakeview	1,500
Recharge from Irrigation	9,600		
Conjunctive Use Recharge	800		
Reclaimed Water Recharge	1,500		
Subsurface Inflow from Mountain Fronts	8,000		
Subsurface Inflow from Lower Pressure to Upper Pressure	1,700		
<b>Total</b>	<b>43,300</b>	<b>Total</b>	<b>59,600</b>

\* Values for Groundwater Production represent 1984-2004 averages, an update from the 1984-2003 values presented in WRIME, 2003a. All other data is taken from the 1984-1999 modeling results (TechLink, 2002a).

The total average annual inflow is 43,300 AFY and the total average annual outflow is 59,600 AFY, resulting in an average annual deficit of 16,300 AFY for the 20-year hydrologic period of 1984 to 2004. Nearly all (97%) outflow is from groundwater extraction while inflow is primarily natural recharge, representing 66% of inflow and the remainder a direct result of recharge from applied water or other human activities. The 1984-2004 hydrologic period presented in Table 4.3 represents the period during which the most consistent and continuous data for the Management Area is available. It should be noted, however, that this period does not necessarily represent the long-term groundwater basin conditions, and as described in Section 4.9 of this document, long-term overdraft is estimated based on longer periods, as well as other methods and criteria.

#### 4.6.4 LAND SUBSIDENCE

In addition to water quantity and quality concerns, there is the potential for further land subsidence in the Management Area, although not at rates to cause significant damage.

Widespread land subsidence has been observed in the San Jacinto basin as the area and its groundwater resources have been developed. Three forms of subsidence have been reported by the U.S. Environmental Protection Agency (Boen, et al., 1971): local or regional tectonic adjustments along the faults in the area; groundwater withdrawals and subsequent artesian head decline; and soil collapse or compaction due to causes other than tectonic or artesian head decline. In the graben, tectonic subsidence has averaged 0.2 in/yr (4.5 mm/year) over the past 40,000 years and subsidence due to groundwater withdrawal and aquifer compaction is 1 - 1.2 in/yr (2.5 - 3 cm/yr) (Morton, 1995). Lofgren (1975, 1976) reported in studies that, through the years, the periods of subsidence tend to correspond to the periods of groundwater production; land surface elevation at the well tends to be lower each year; and subsidence has been greater within the graben than on either side.

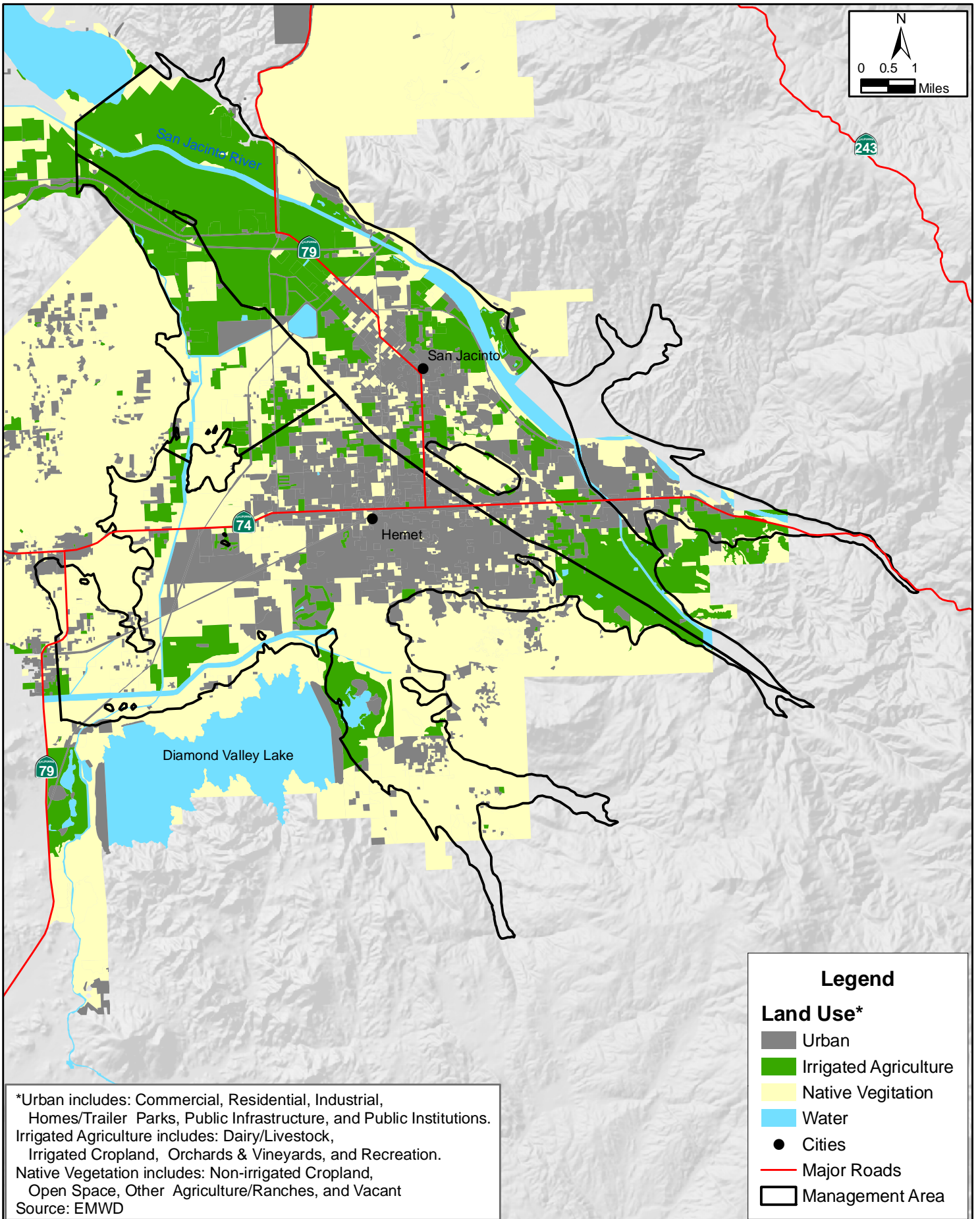
#### 4.7 LAND USE

Land use in the Management Area has experienced changes over the past half-century. The conversion from agricultural or undeveloped lands to urban uses has an impact on basin hydrogeology as well as on water demand. Figure 4.16 and Table 4.4 show land uses in 1998 for most of the project area.

**Table 4.4 Land Use Distribution Based on the 1998 Survey**

Land Use	Canyon	Upper Pressure	Hemet South	Hemet North	Total
Total Area (acres)	4,400	21,200	25,300	5,600	56,500
% Urban and Suburban	24%	24%	36%	11%	28%
% Irrigated Crops and Recreational	12%	49%	15%	47%	31%
% Non-Irrigated Crops and Native Vegetation	16%	24%	45%	42%	35%
% Unmapped	48%	3%	4%	0%	7%

Much of the urban uses in the area are recent. This is shown by the significant population growth in the area, as highlighted Figure 4.17, which displays population data from the decennial US Census reports and a 2004 US Census estimate for the incorporated areas of Hemet and San Jacinto.



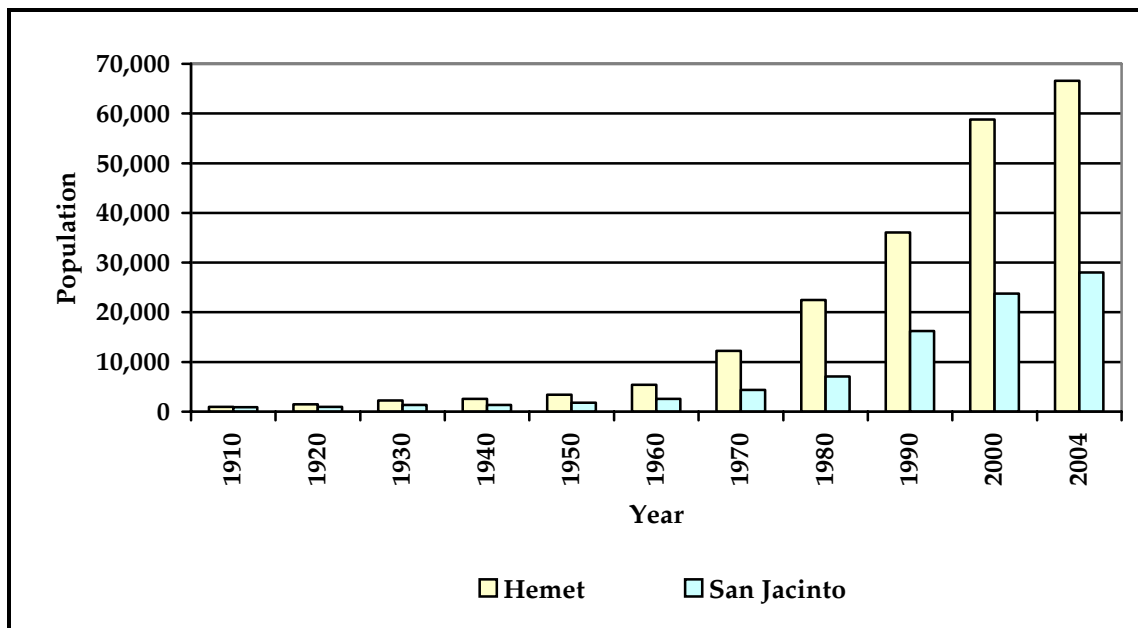
## 1998 Land Use

Hemet / San Jacinto Water Management Plan

October 2007

Figure 4.16





**Figure 4.17 Population Growth in Incorporated Hemet and San Jacinto**

From 1950 to 2004, the population in Hemet increased twenty-fold and the population in San Jacinto increased sixteen-fold. Such urbanization results in changes in both water demand and hydrologic processes. For newly urbanized areas that were previously non-irrigated, water demands obviously increase significantly. Areas that change from irrigated agricultural uses to urban uses do not typically see major changes in the total annual water demand. However, water demand from urban users is typically less elastic than water demand from agricultural users, making drought contingencies more important. The requirements for water quality are also typically more stringent for urban users. From a hydrologic perspective, urbanization results in an increase in the impervious land area, e.g., more pavement and buildings, with the resulting increased runoff and decreased infiltration. Additionally, the water used indoors by urban users is sent to treatment plants, shifting the potential for recharge of this water from the area of use to the treatment plant area.

The urbanization trend is not unique to the Management Area, but has been pervasive throughout the fringes of urbanized Southern California. While the rate of urbanization may change in the future, the trend of urbanization is likely to continue and to play a significant role in land use and water demand. Further discussion of future land use changes may be found in Section 5.

## 4.8 CURRENT WATER SUPPLIES

There are four Public Agencies primarily responsible for water supply in the Management Area: EMWD, LHMWD, and Cities of Hemet and San Jacinto. In addition, Private Water Producers produce groundwater and purchase water from the Public Agencies, and the Soboba Tribe pumps groundwater for its respective uses. Each entity pumps groundwater, and some entities also utilize a mix of some of the following sources: surface water diversions, surface water and/or groundwater purchases, surface water imports, and recycled water. The water supply conditions in the Management Area and the interrelationships among the various agencies is a primary factor for future water management in the area. Figure 4.18 shows these interrelationships in a diagram form.

Figure 4.19 shows the makeup of the water supply and how this mix has changed from 1985 to 2004 for the Management Area. Groundwater is the predominant source of water supplies for the Management Area. The remaining sources are smaller, but still important, sources of water. Supplies listed by entity are provided in Appendix F. Note that items such as sales to other agencies are not subtracted in these supply values, resulting in a supply that represents both wholesale and retail supplies. As a result of this definition, supplies will not equal the historical demand. Historical demand for the individual entities is shown in Figures 4.20 – 4.25.

### 4.8.1 GROUNDWATER

All entities pump groundwater for all or a portion of their water supply. The quantity of groundwater extraction for each Management Zone is shown in Figures 4.26a, 26b, and 4.27.

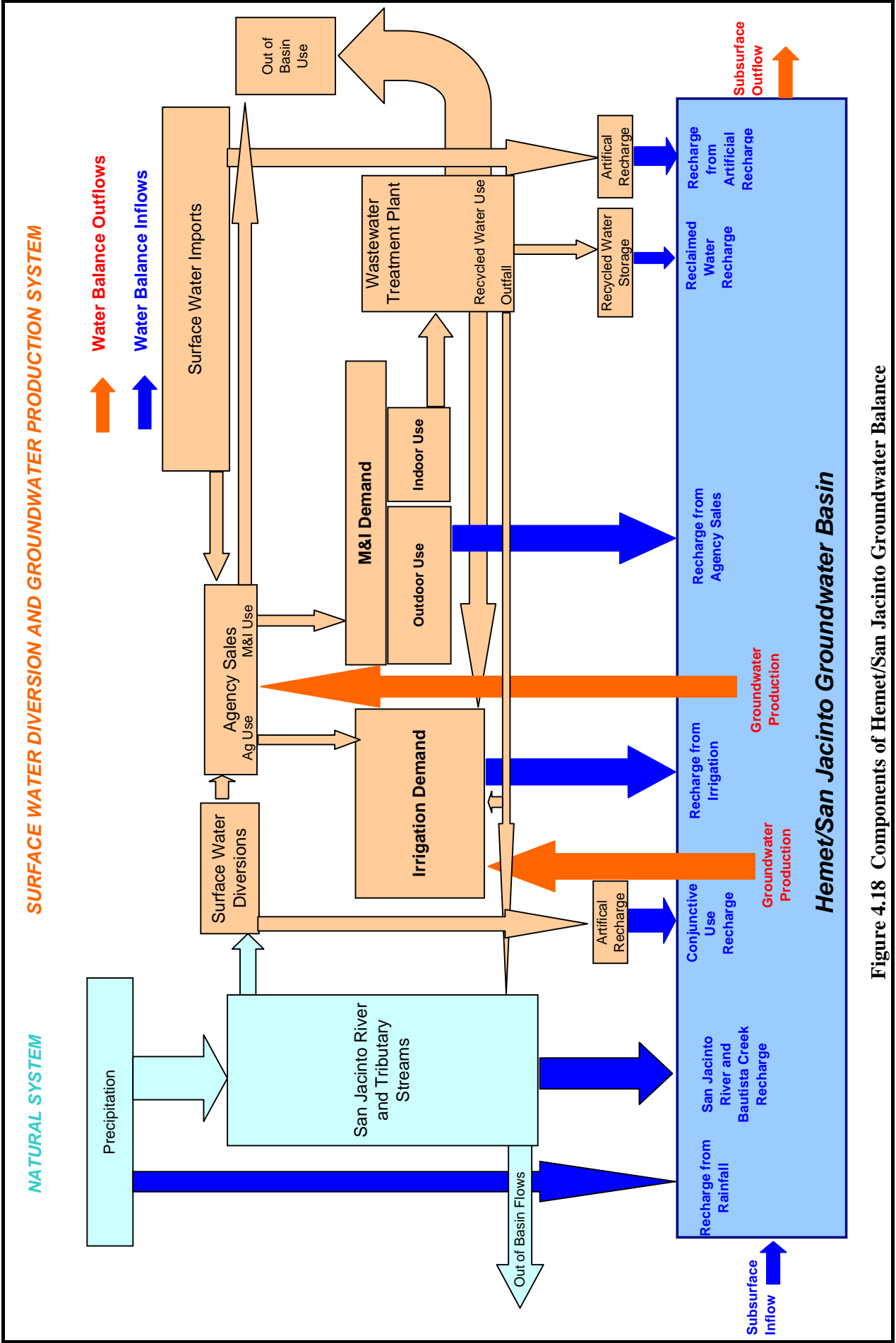


Figure 4.18 Components of Hemet/San Jacinto Groundwater Balance



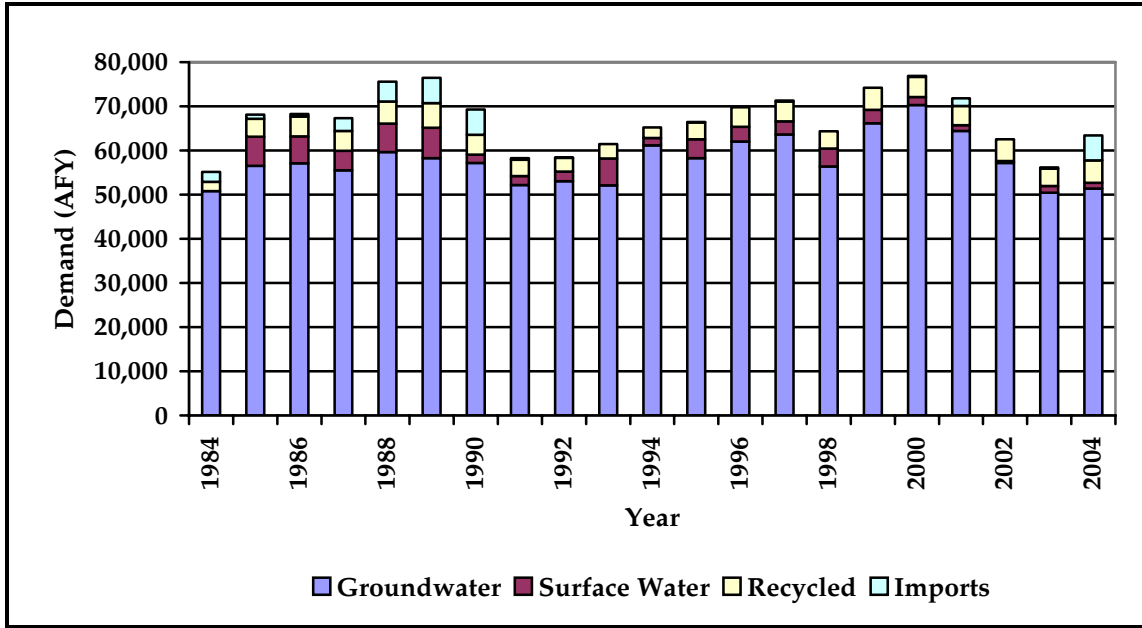


Figure 4.19 Annual Management Area Water Supplies

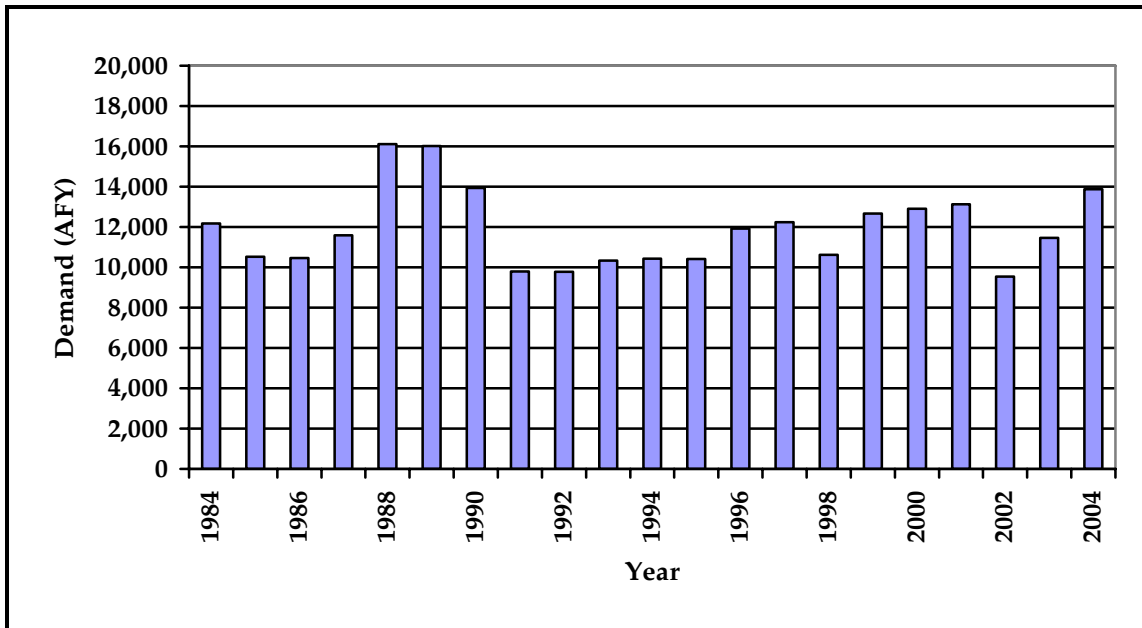


Figure 4.20 EMWD Historical Annual Demand

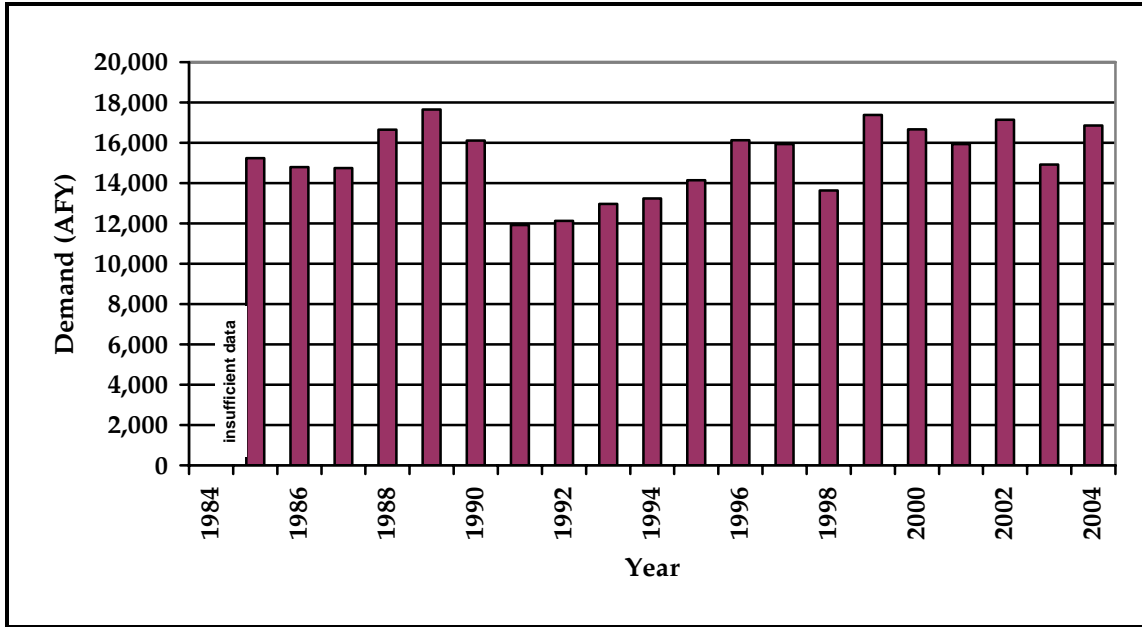


Figure 4.21 LHMWD Historical Annual Demand

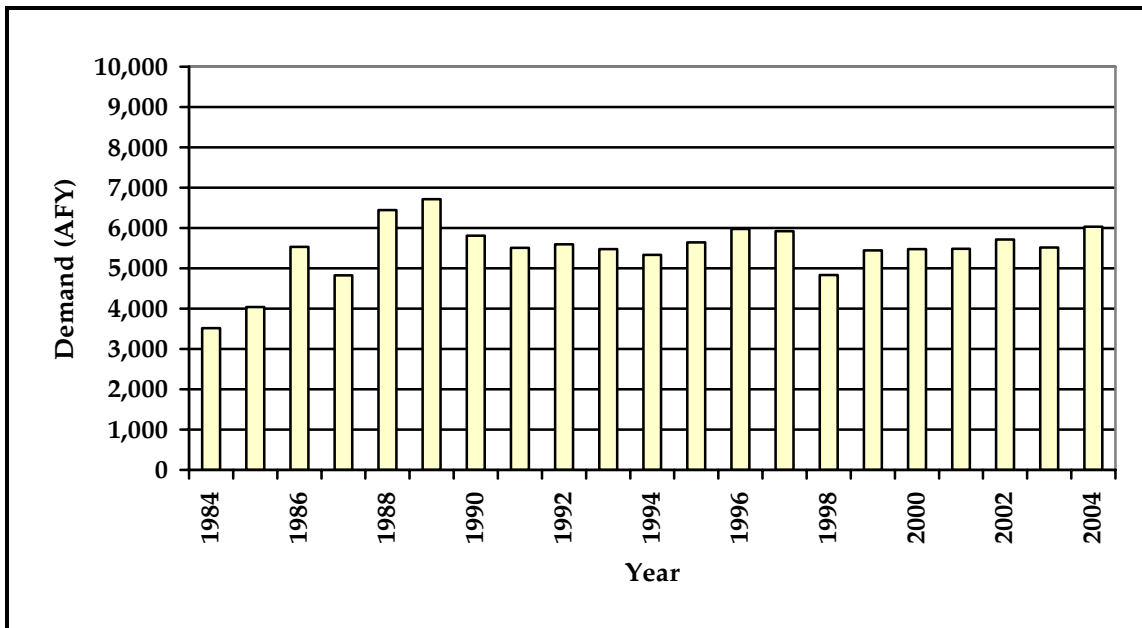


Figure 4.22 City of Hemet Water Service Area Historical Annual Demand

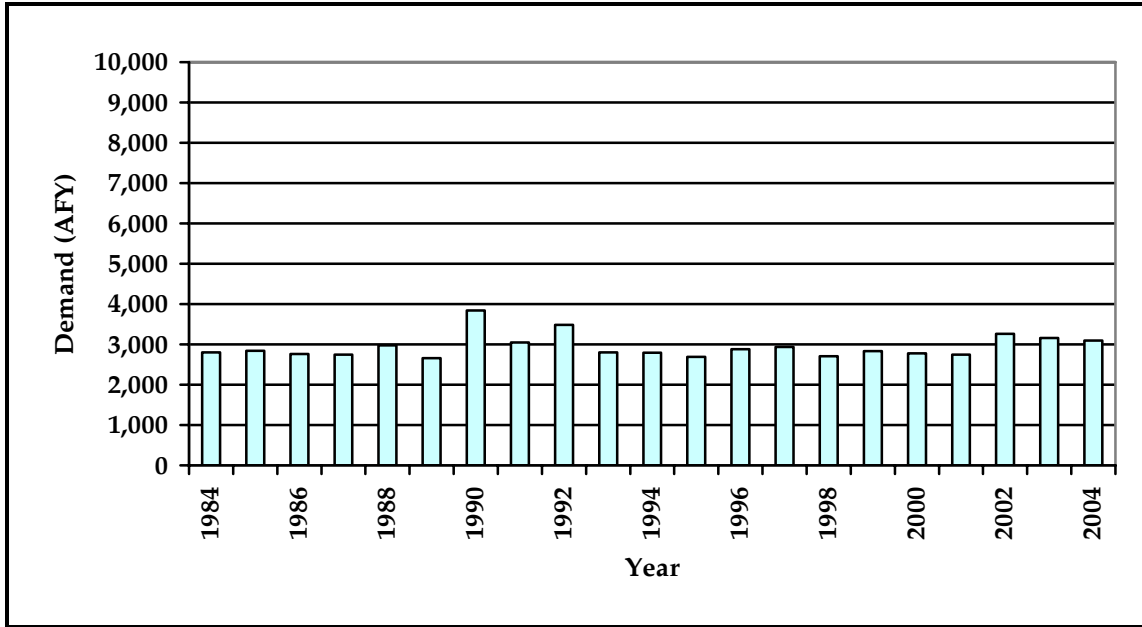


Figure 4.23 City of San Jacinto Water Service Area Historical Annual Demand

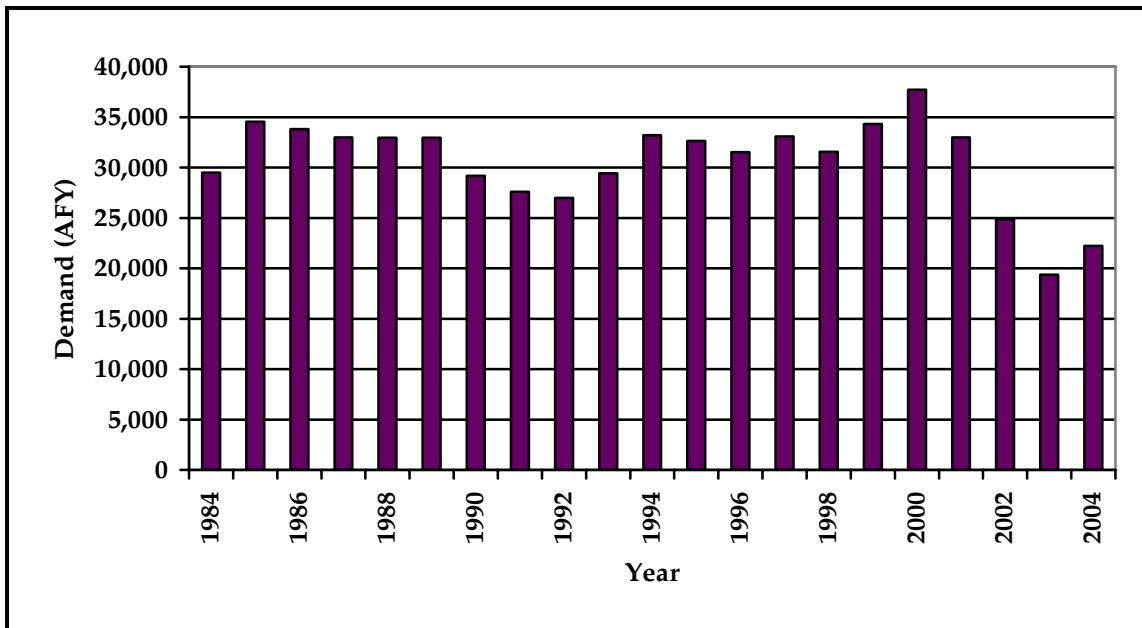


Figure 4.24 Private Water Producers Historical Annual Demand

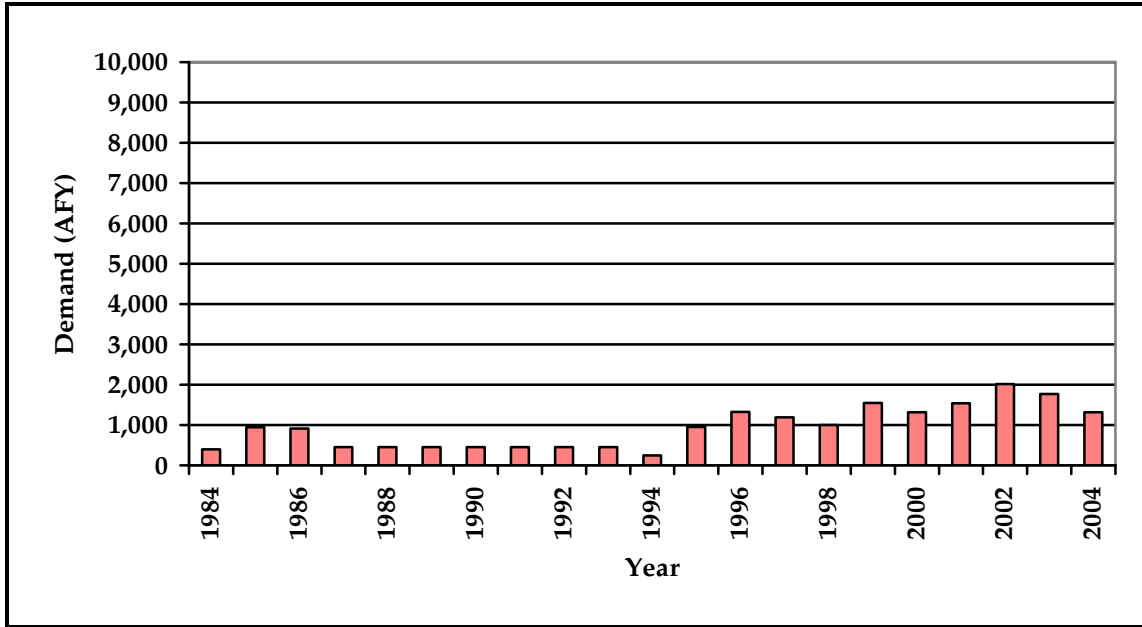


Figure 4.25 Soboba Historical Annual Demand

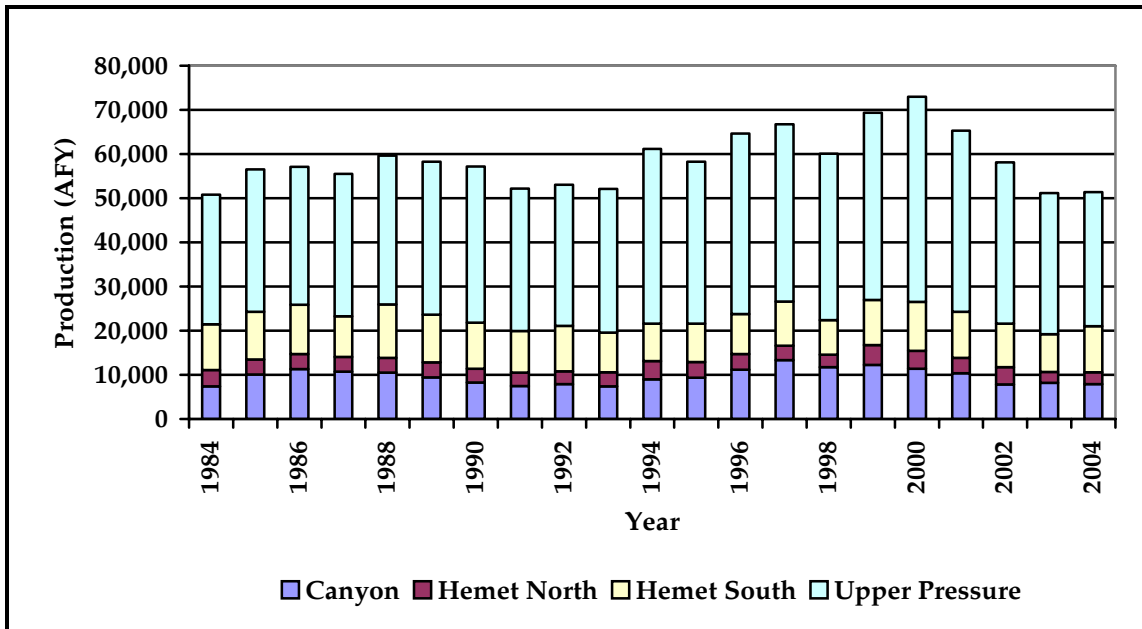


Figure 4.26a Annual Groundwater Production, by Management Zone

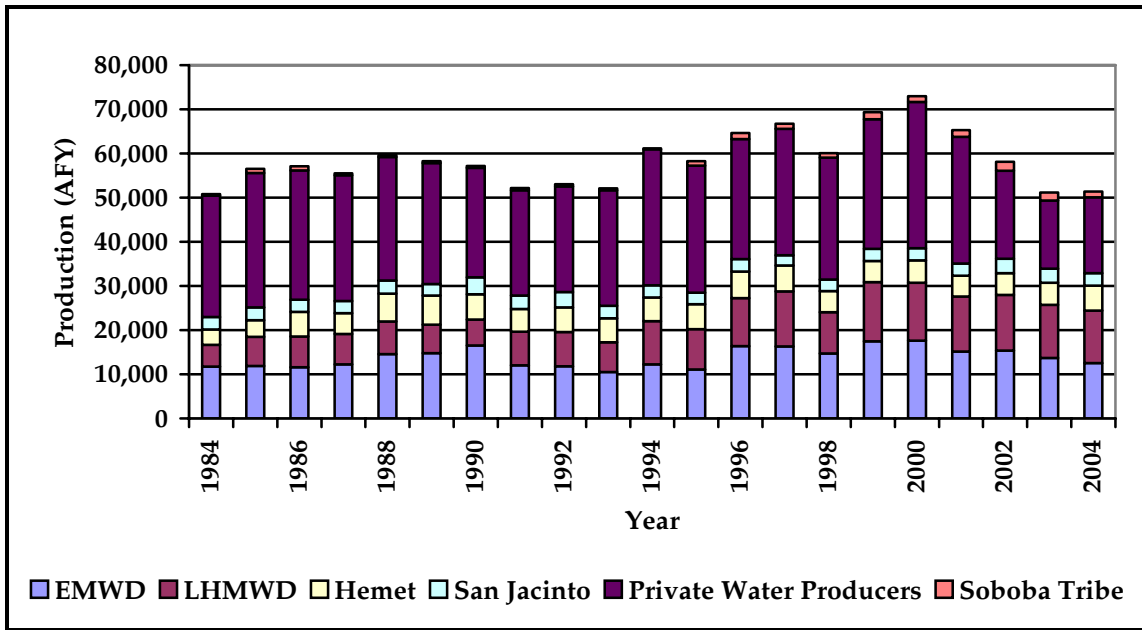


Figure 4.26b Annual Groundwater Production, by Entity

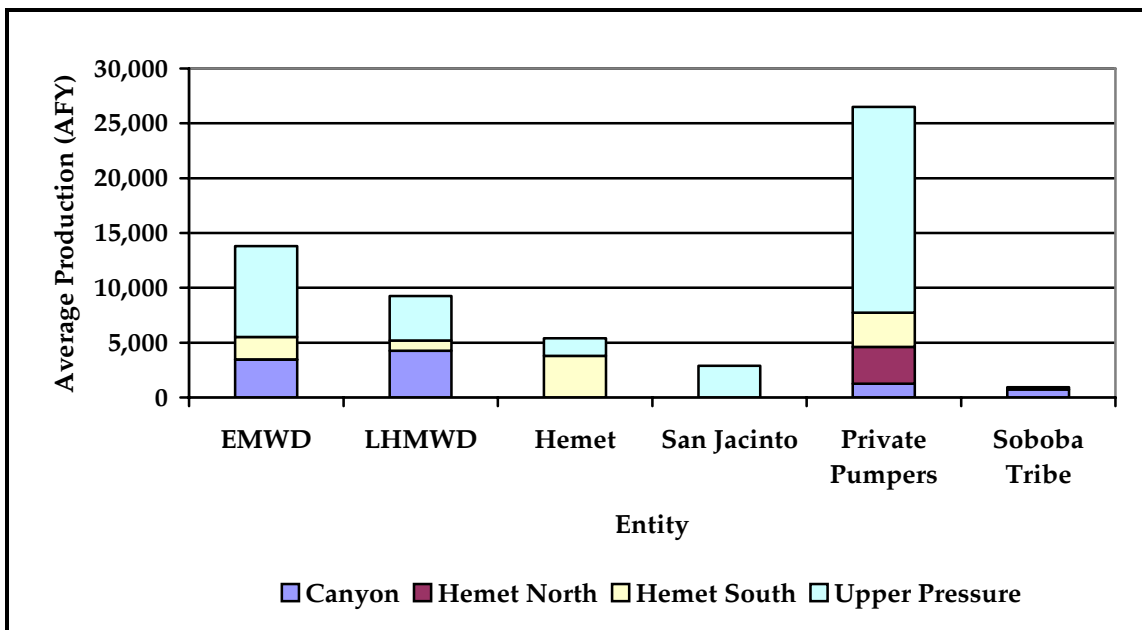


Figure 4.27 Average Annual Entity Groundwater Production, by Management Zone, 1984-2004

Since 1984, each entity except for the City of San Jacinto has pumped groundwater from multiple Management Zones. San Jacinto's pumping during that time period has always been from the Upper Pressure Management Zones. The percentage of the water supply from groundwater for each remaining entity, compared to other components of the water supply, is shown in Figures 4.28a-e as a pie chart breaking down the entity's 2004 groundwater supply by

Management Zone. Additionally, Figure 4.29a-e presents stacked area charts showing the historical annual percentage of groundwater supply from each Management Zone.

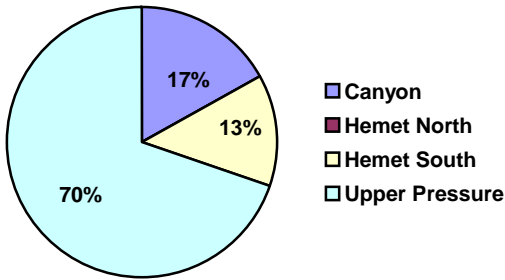


Figure 4.28a EMWD 2004 Groundwater Production, Percentage by Supply Source

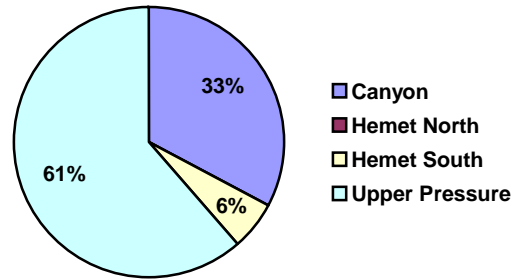


Figure 4.28b LHMWD 2004 Groundwater Production, Percentage by Supply Source

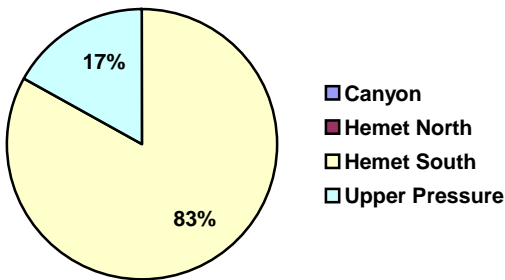


Figure 4.28c City of Hemet Water Service Area 2004 Groundwater Production, Percentage by Supply Source

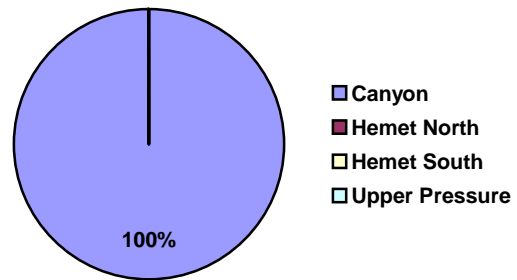


Figure 4.28d Soboba 2004 Groundwater Production, Percentage by Supply Source

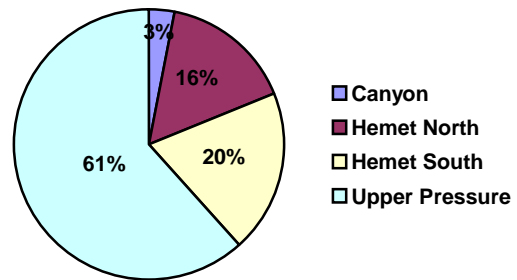


Figure 4.28e Private Water Producers 2004 Groundwater Production, Percentage by Supply Source

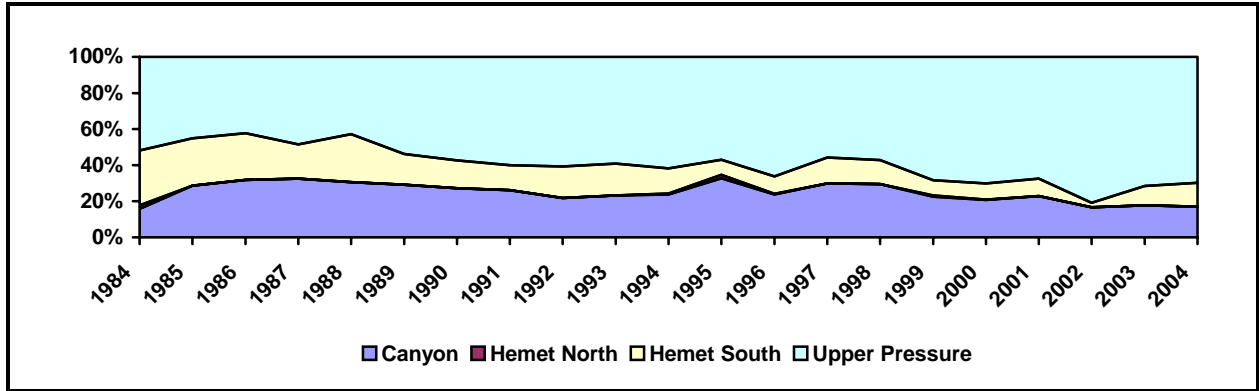


Figure 4.29a EMWD Historical Groundwater Production, Percentage by Supply Source

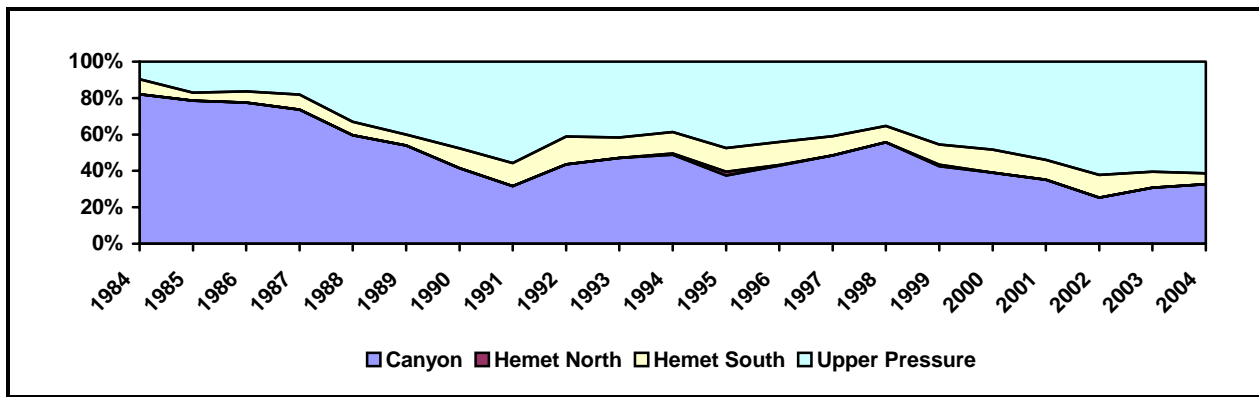


Figure 4.29b LHMWD Historical Groundwater Production, Percentage by Supply Source

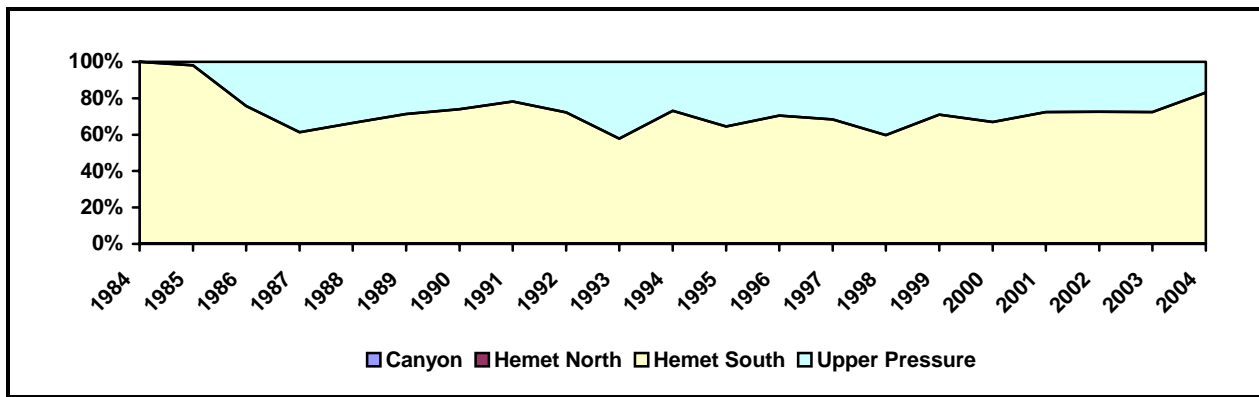


Figure 4.29c City of Hemet Water Service Area Historical Groundwater Production, Percentage by Supply Source

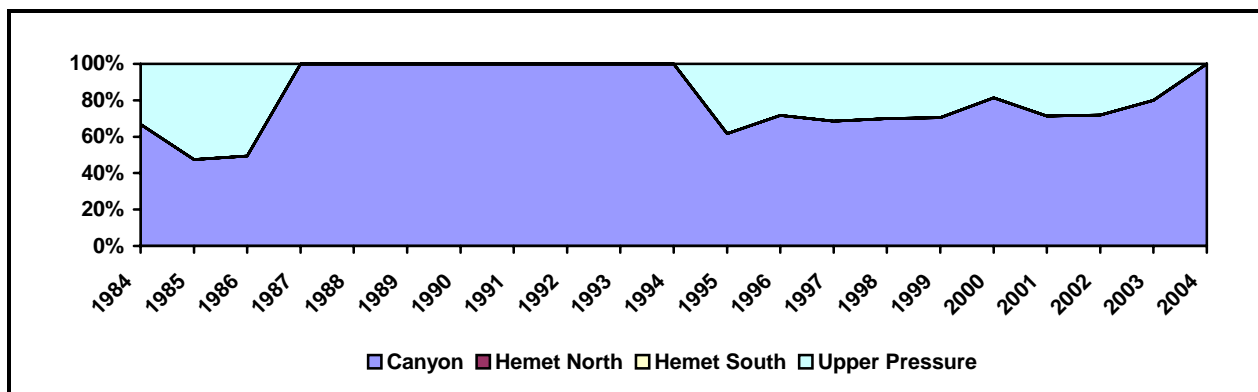


Figure 4.29d Soboba Historical Groundwater Production, Percentage by Supply Source

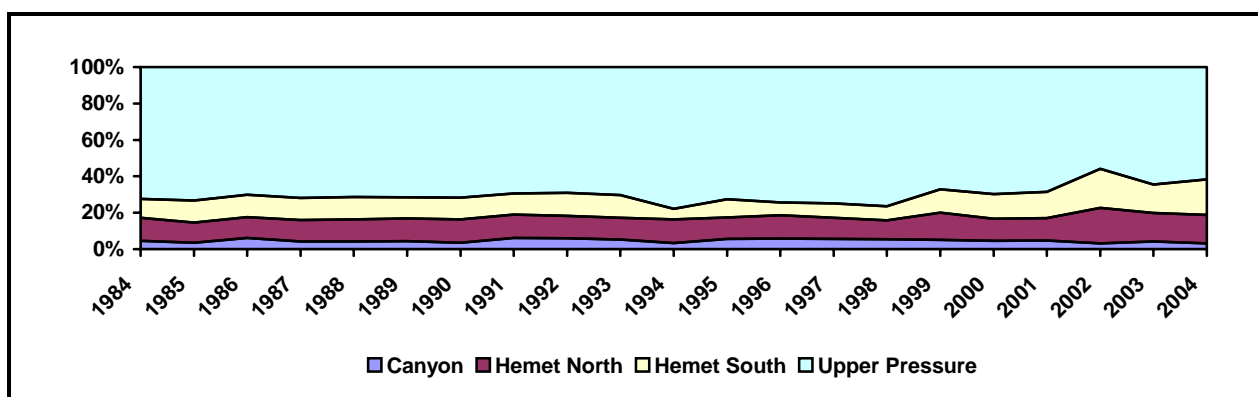


Figure 4.29e Private Water Producers Historical Groundwater Production, Percentage by Supply Source

The pie charts show that in 2004 the Upper Pressure Management Zone provided the majority of groundwater for four of the six entities. The Hemet South Management Zone provided the majority of water to the City of Hemet Water Services Area and The Canyon Management Zone provided all groundwater for the Soboba Tribe.

The only significant trend seen in the 1984 - 2004 historical annual charts is LHMWD’s shift in groundwater sources from majority Canyon Management Zone water in the mid-1980s to mostly Upper Pressure Management Zone water recently. These charts also emphasize the importance of the Upper Pressure Management Zone, as it was a component of the groundwater supply for all entities over the 1984 – 2004 time period.

#### 4.8.2 IMPORTED WATER

EMWD is a member agency of the MWD, and, as such, is able to import water from Northern California via the State Water Project and from the Colorado River Aqueduct. Imported water is used for supply as well as for groundwater recharge; this section only discusses imported



water for supply, imported water for recharge is discussed in Section 4.6.1. District-wide, imported water comprises 80% of EMWD’s total potable water supply. However, imported water is a small portion of EMWD’s water supply in the Management Area due to the availability of high quality groundwater, which is less common in the rest of the EMWD service area. Over the 1984-2004 period, imported water represented 13% of EMWD’s supply and 2% of the total Management Area supply (WRIME, 2003a). In 2004, imported water represented 41% of EMWD’s supply and 9% of the total supply for the Management Area (EMWD, 2005a,b).

The usage of imported water for direct use has been variable over the past decades, as shown in Figure 4.30. The volume of water imported was reduced in 1991 as the importation of unfiltered Colorado River water to the Management Area was curtailed to meet the requirements of the Surface Water Treatment Rule, part of the Safe Drinking Water Act.

Imported water usage in recent years has increased, which in turn reduced the stress on groundwater resources in the Management Area.

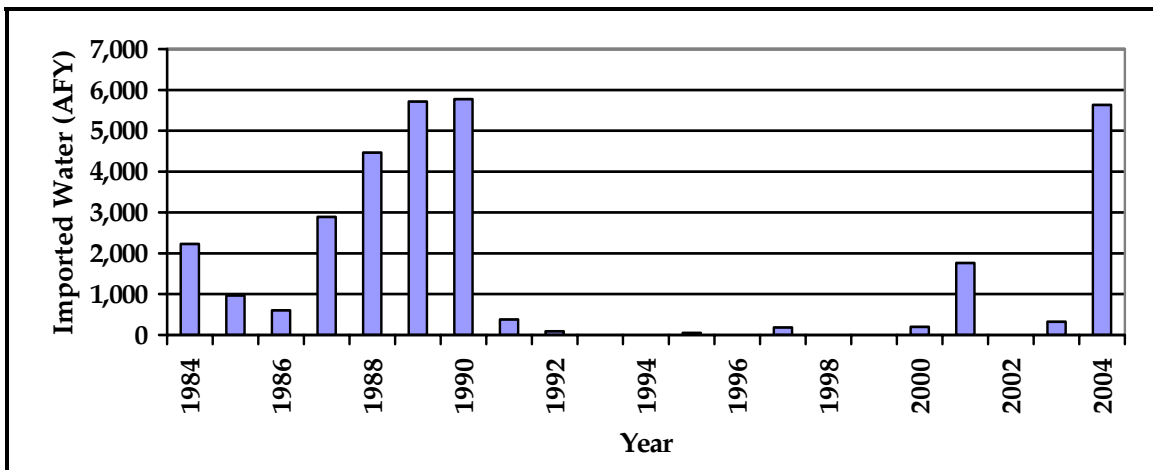


Figure 4.30 Annual Imported Water Supply

### 4.8.3 RECYCLED WATER

Recycled water is treated at EMWD’s San Jacinto Valley Regional Water Reclamation Facility and is currently used primarily for irrigation in the public municipal areas, industrial uses, and agricultural irrigation purposes in the Management Area and for habitat creation at the California Fish and Game San Jacinto Wildlife Area outside the Management Area. Recycled water is a highly reliable source of supply and will increase in availability as the population of the Management Area increases. Most of the recycled water is sold by EMWD to private land owners for agricultural irrigation. Recycled water usage in the Management Area has been fairly stable over the past decades, with approximately 5,000 AF supplied in 2004. Annual amounts of recycled water use are presented in Figure 4.31.

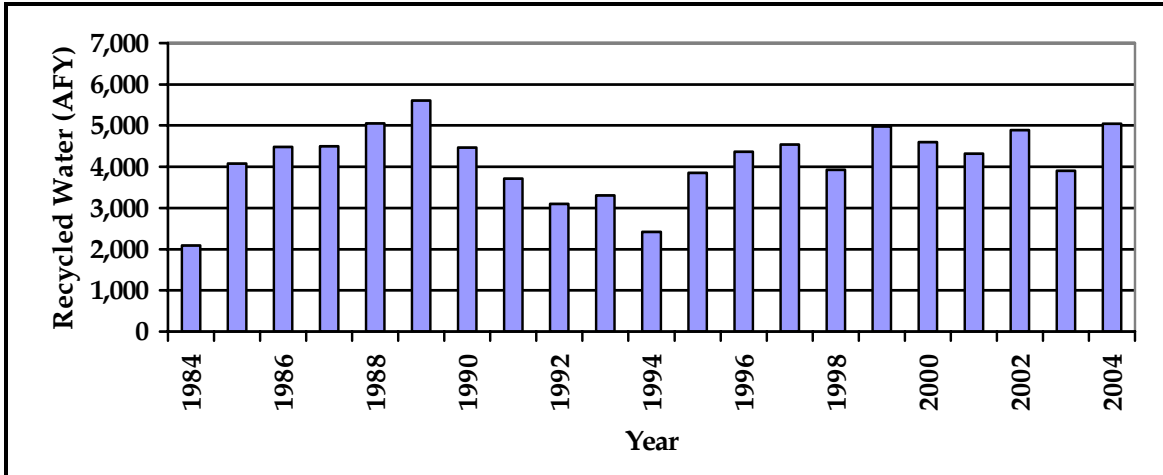


Figure 4.31 Annual Recycled Water Supply

4.8.4 SURFACE WATER

LHMWD has pre-1914 rights for the diversion and storage of surface water from the San Jacinto River and its tributaries. These rights date back to the late 1800s, and the diversion amounts are filed each year with the Division of Water Rights, State Water Resources Control Board on Annual Notices of Groundwater Extraction or Diversion, numbers G330016, G330017, and G330018.

When available, LHMWD diverts surface water for direct use. It should be noted that the San Jacinto River is an ephemeral river. The river may not flow every year and, therefore, there may be occasional years where diversion is not possible. Annual surface water diversions for 1985-2004 are shown in Figure 4.32. Details of the surface water rights are discussed in Section 7.1.

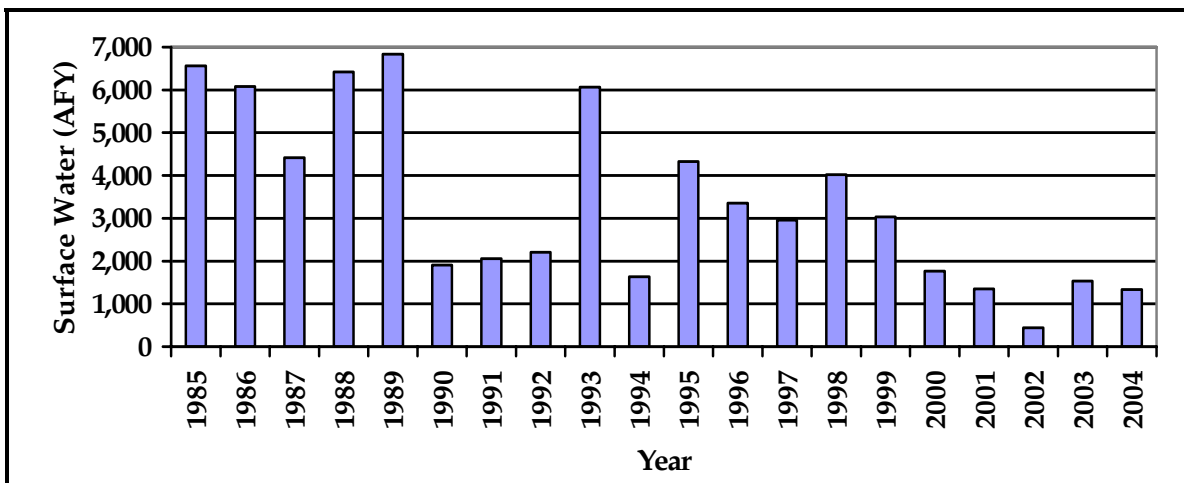


Figure 4.32 Annual Surface Water Supply

EMWD's surface water diversions are not utilized for direct use and are therefore not considered part of the water supply. More information on EMWD's surface water diversions is included in Section 7, Surface Water Rights.

#### 4.8.5 PURCHASES FROM EMWD

LHMWD, City of Hemet, and City of San Jacinto purchase water from EMWD to supplement their water supplies. The annual volume of water sold to the other agencies by EMWD is shown in Figure 4.33. In addition to these sales, EMWD sells recycled water to private land owners for agricultural irrigation.

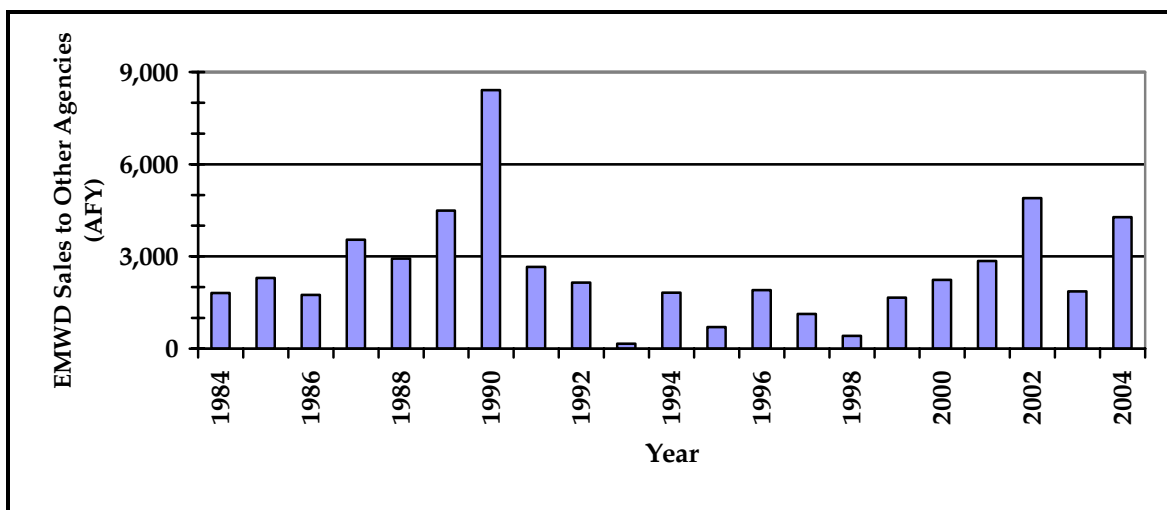


Figure 4.33 Annual Sales by EMWD to Other Agencies within Management Area

### 4.9 ESTIMATES OF SAFE YIELD AND OVERDRAFT

#### 4.9.1 SAFE YIELD

The Safe Yield of the Management Area is defined in the Stipulated Judgment as the long term, average quantity of water supply in the Management Area that can be pumped without causing undesirable results, including the gradual reduction of natural groundwater in storage over long-term hydrologic cycles.

The following clarifying notes are presented to better define the Safe Yield definition:

- Period of Record:** Safe Yield is a function of annual variability of the hydrology, but should reflect long-term average conditions, including wet and dry replenishment conditions. Identification of "long term, average" is important, but difficult to determine, as precipitation is highly variable from year to year and subject to long-term climatic changes. As hydrologic data will continue to be

collected and a greater understanding of the hydrology will be gained, the period of record for determining the Safe Yield will be subject to change over time.

- **Water Supply Components:** The following components of water supply are considered in the definition of Safe Yield:
  - a. Natural recharge from infiltration of precipitation,
  - b. Recharge from infiltration of streamflow and other surface water runoff,
  - c. Recharge from infiltration of irrigation applied water on agricultural lands,
  - d. Recharge from infiltration of outdoor irrigation in the urbanized areas,
  - e. Artificial recharge, such as replenishment programs, historically operated, using imported, recycled, and surface water diversions,
  - f. Subsurface groundwater inflows, such as from the Lower Pressure Management Zone and the boundaries of the basin, and
  - g. Subsurface groundwater outflows, such as to the Lakeview portion of the Lakeview/Hemet North Management Zone.
- **Study Area:** Safe Yield is calculated for the Management Area as one unit, and not by the smaller units of Management Zones.
- **Undesirable Effects:** The definition of Safe Yield emphasizes protection of groundwater in storage. It is assumed that potential undesirable effects on water quality are indirectly addressed, and therefore are not included in the analysis.

The Safe Yield of the Management Area has been estimated in a number of studies in the past. A summary of methods, hydrologic periods, and results from each study is presented in Table 4.5.

Two major methodologies have traditionally been used to estimate the Safe Yield: (1) Water Balance methodology, and (2) Change in storage methodology. These methods are briefly described below.

**Table 4.5 Published Estimates of Safe Yield for the Management Area**

Yield Study	Method	Time Period	Safe Yield (AFY)	Pumping (AFY)	Overdraft (AFY)
Fritz and Rosell*, 1947	Water Balance (Conventional)	1920-1945	27,400 (35,100 w/o trees/brush)	32,400	4,800
Schwartz*, 1967	Water Balance (Conventional)	1923-1960	26,100	n/a	12,100
EMWD White Paper, 2000	Water Level Recovery Analysis	Variable	50,000	60,600	10,600
GIS Recharge Estimates	Change in Storage (GIS)	1998-2003	39,700	n/a	n/a
WRIME, 2003d	Water Balance (Conventional)	1984-2001	44,700	59,000	14,300
Based on TechLink, 2002a	Water Balance (Model-based)	1984-1999	41,300	58,000	16,700

\* Fritz and Rosell (1947) and Schwartz (1967) both used a larger geographic area that roughly included what is today called the San Jacinto-Lower Pressure Management Zone. This additional area is the area northwest of Bridge Street to Redlands Boulevard in Moreno Valley.

#### 4.9.1.1 Method 1 - Water Balance Method

The water balance method utilizes inflows and outflows from the basin to estimate change in storage and the Safe Yield of the basin. The amount of pumping that can be sustained with little or no long-term change in storage is the Safe Yield of the basin. The Safe Yield estimate may be calculated by

$$\text{Safe Yield} = \text{Change in Groundwater Storage} + \text{Groundwater Production},$$

where Change in Groundwater Storage is Inflows less Outflows. The estimate must be over a long-term base period which reflects a number of wet, normal, and dry periods. Groundwater production values are based on historical data as reported by the Public Agencies and estimated for the Private Water Producers. The TC has reviewed and agreed to the data for use in the Water Balance Method. The following inflow and outflow components are used to calculate Change in Groundwater Storage for the Management Area:

#### Inflows

- Recharge from Retail Water Sales,
- Recharge from Irrigation Return Flow,
- Recharge from Precipitation,

- Grant Avenue Ponds Diversion Recharge,
- Reclaimed Ponds Recharge,
- Recharge from Recycled Water Sales,
- Subsurface Inflow from Other Management Zones,
- Bautista Creek Recharge,
- San Jacinto River Recharge, and
- Boundary Inflow.

### **Outflows**

- Subsurface Outflow to Other Management Zones,
- Boundary Outflow, and
- Groundwater Production.

#### **4.9.1.2 Method 2 - Change in Storage Methodology**

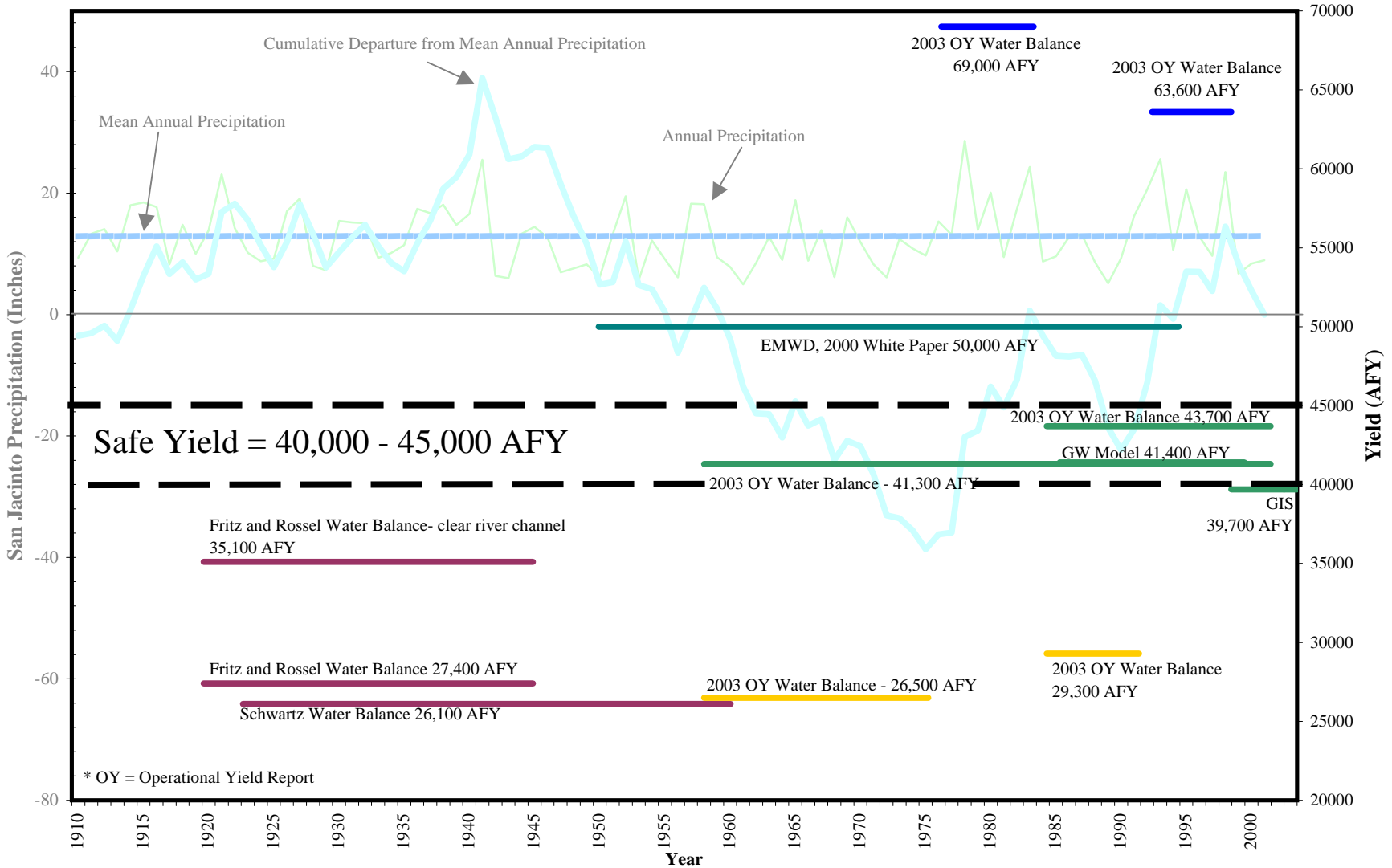
This method uses a GIS database to develop surfaces of groundwater elevations based on observed groundwater levels at multiple control points (i.e., wells) throughout the Management Area for two different time periods. The product of change in volume between the two surfaces at two different times and the specific yield of the aquifer determines the change in storage between those two time points. The Safe Yield is then calculated as the sum of the calculated change in storage and the groundwater production during the same time period. Variations of this method are used based on the spatial distribution, including vertical distribution, of the specific yield in the aquifer system.

#### **4.9.1.3 Summary of Previous Yield Estimates**

Calculation of Safe Yield is a function of the hydrologic period used in the analysis. Figure 4.34 presents the long-term hydrologic conditions as precipitation at San Jacinto gaging station (RCFC&WCD Site #186), along with estimates of the Safe Yield. As indicated in the figure, the Safe Yield estimates range from 26,400 to 44,700 AFY. Since the two estimates made by Fritz & Rosell (1947) and Schwartz (1967) are based on much older data sets and short-term hydrologic records, and the geographic area may not be consistent with some of the more recent estimates, the TC decided in its August 25, 2005 meeting not to use these estimates. Instead, the TC concluded that the Safe Yield of the Management Area ranges from approximately 40,000 to 45,000 AFY based on the most recent analyses.

The TC also concluded that the following guidelines for estimation of Safe Yield of the Management Area be considered by the Watermaster when calculating Safe Yield in the future:

**Figure 4.34 Safe Yield Estimates**



- Review and modify Safe Yield, if necessary, upon the recommendation of the TC or as the Watermaster may determine.
- Use latest available data with consideration for proper spatial, temporal, and vertical characteristics of the aquifer system.
- Consider a long period of record that includes above average, below average, and normal conditions.
- Consider latest methodologies that can provide more flexibility based on the available data and information, as necessary.
- Consider using the San Jacinto Watershed Groundwater Model, with appropriate updates and calibration, for re-estimation of groundwater conditions, as needed.

#### **4.9.2 OVERDRAFT**

Overdraft is defined in the Stipulated Judgment as the condition whereby groundwater production in the Management Area exceeds the Safe Yield, creating undesirable conditions in the basin. The amount of overdraft is calculated as the difference between long-term average annual groundwater production in the Management Area and Safe Yield. Figure 4.35 shows the estimated annual groundwater production in the Management Area, along with the range of Safe Yield. Based on this figure, the overdraft in the Management Area is estimated to be 10,000 to 15,000 AFY. For planning purposes and to evaluate options to reduce the overdraft, this Plan assumes that the overdraft is at least 10,000 AFY.

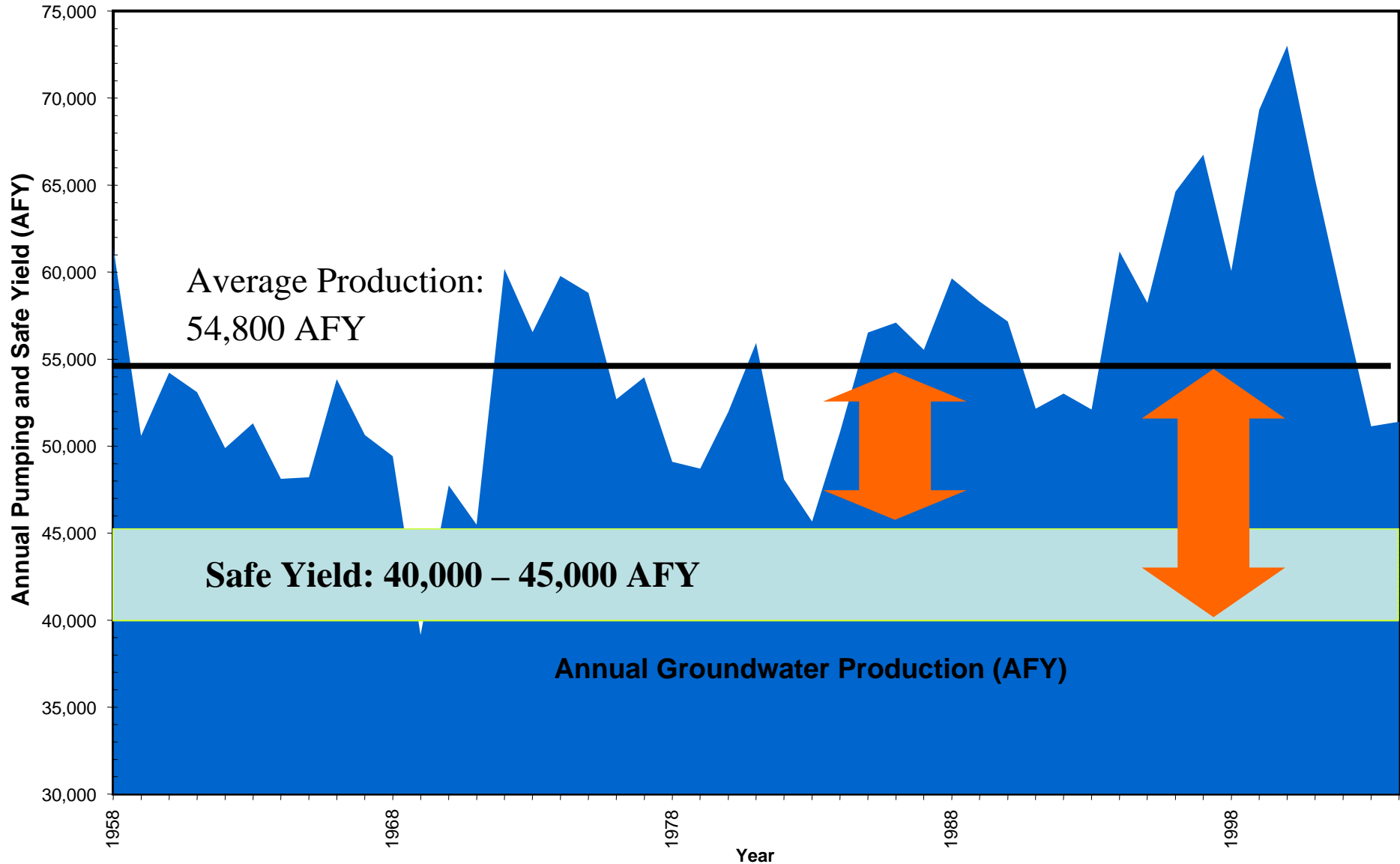
#### **4.10 WATER QUALITY CONDITIONS**

This section presents a summary of the groundwater quality conditions in the Management Area. This description will assist in establishing a baseline condition for future water management efforts to maintain or improve groundwater quality in the Management Area. The TC has decided that the water quality conditions in the Management Area would be evaluated based on TDS and nitrate levels. This is consistent with the TIN/TDS studies (Wildermuth, 2000) and the emphasis on TDS and nitrate in the Basin Plan as amended (RWQCB, 2004).

The Management Area lies within the jurisdiction of the RWQCB, Santa Ana Region 8. The RWQCB implements state and federal laws through adoption of Water Quality Control Plans or Basin Plans (RWQCB, 1995). The Basin Plan establishes both the legal beneficial use designations and sets the standards to protect these uses. The Basin Plan was recently amended (RWQCB, 2004) to incorporate an updated TDS and Nitrogen Management Plan for the Santa Ana Region, including revised groundwater Management Zones (combining Hemet North and Lakeview into one Management Zone; Hemet North remains treated separately from Lakeview



**Figure 4.35 Groundwater Production and Range of Safe Yield Estimates**



in this Plan), TDS and nitrate quality objectives for groundwater, TDS and Nitrogen waste load allocations, and stream reach designations.

Within the Santa Ana Watershed, which includes the Management Area, a statistical method has been developed to use nitrate (as N) and TDS to evaluate the status of water quality; to compare sub-basin concentrations; and to trigger management actions (RWQCB, 2004; Wildermuth, 2000, 2005). Point statistics were used to show (i) historical ambient water quality conditions as represented by the 1954-1973 time period, (ii) 1997 Current ambient water quality conditions as represented by the 1978-1997 time period, and (iii) 2003 Current ambient water quality conditions as represented by the 1984-2003 time period. A summary of the data is shown in Table 4.6, revealing nitrate (as N) levels below the MCL of 10 mg/L for all cases. TDS exceeds the recommended secondary MCL of 500 mg/L in Hemet South (current and historical) and Hemet North (current and historical), and TDS exceeds the maximum secondary MCL of 1000 mg/L in the 1997 current levels in Hemet South.

**Table 4.6 Historical (1954-1973), 1997 Current (1978-1997), and 2003 Current (1984-2003) Ambient Nitrate as N and TDS Concentrations (mg/L)**

Sub-basin	Nitrate as N <sup>1</sup>				TDS <sup>2</sup>			
	Basin Plan Objective <sup>3</sup>	Historical	1997 Current	2003 Current	Basin Plan Objective <sup>4</sup>	Historical	1997 Current	2003 Current
Canyon	2.5	2.5	1.6	2.1	230	234	220	420
Upper Pressure	1.4	1.4	1.9	1.7	320	321	370	370
Hemet South	4.1	4.1	5.2	5.4	730	732	1030	850
Hemet North	1.8	1.8	2.7	3.4	520	519	830	840

Source: Wildermuth, 2005. 2003 update 1984-2003)

<sup>1</sup> Table 3-2

<sup>2</sup> Table 3-1

<sup>3</sup> Basin Plan Amendment, 2004 (Table 5-4)

<sup>4</sup> Basin Plan Amendment, 2004 (Table 5-3)

The point statistics and water quality objectives were used by the RWQCB to develop estimates of assimilative capacity. Areas with assimilative capacity are able to accept waters with higher concentrations of a constituent than the concentration in the receiving waters because natural processes such as recharge and dilution will allow for the water quality objectives to continue to be met. The most recent computations indicate that Hemet South, Hemet North, Canyon, and Upper Pressure Management Zones do not currently have assimilative capacity for TDS. For nitrate, the Hemet South, Hemet North, and Upper Pressure Management Zones do not have

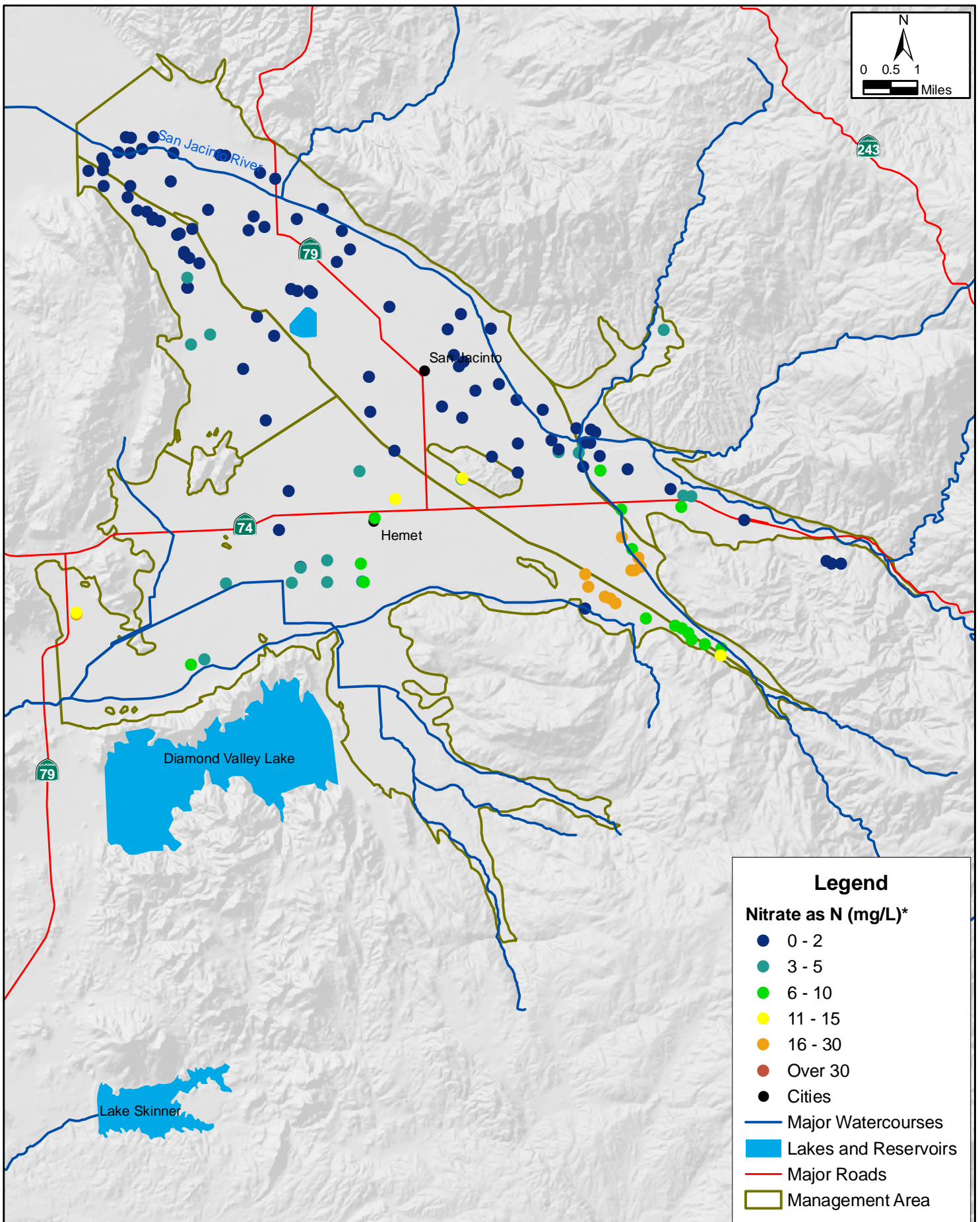
assimilative capacity remaining, and the Canyon area has only a very small amount of nitrate that it can assimilate (0.4 mg/l nitrate as N; Wildermuth, 2005).

Table 4.7 shows the changes seen over the 30-year time period between the historical and 2003 Current time periods. The Canyon Management Zone shows a decrease in nitrate as N concentrations while all other nitrate (as N) and TDS concentrations for all other Management Zones show increases in concentrations of between 0.3 and 1.6 mg/L nitrate (as N) and 49 to 321 mg/L TDS. It should be noted that changes seen between these time periods are a combination of true changes in ambient water quality and artificial changes due to limitations in monitoring data and the estimation technique (Wildermuth, 2005). In the future, as current monitoring programs assemble more data, a long-term record of analytical data at specific wells will be available to better show changes over time at specific locations.

**Table 4.7 Change in Ambient Concentration (mg/L) of Nitrate as N and TDS, Between Historical (1954-1973) and 2003 Current (1984-2003) Time Periods**

Sub-basin	Change in Nitrate as N (mg/L)	Change in TDS (mg/L)
Canyon	-0.4	186
Upper Pressure	0.3	49
Hemet South	1.3	118
Hemet North	1.6	321

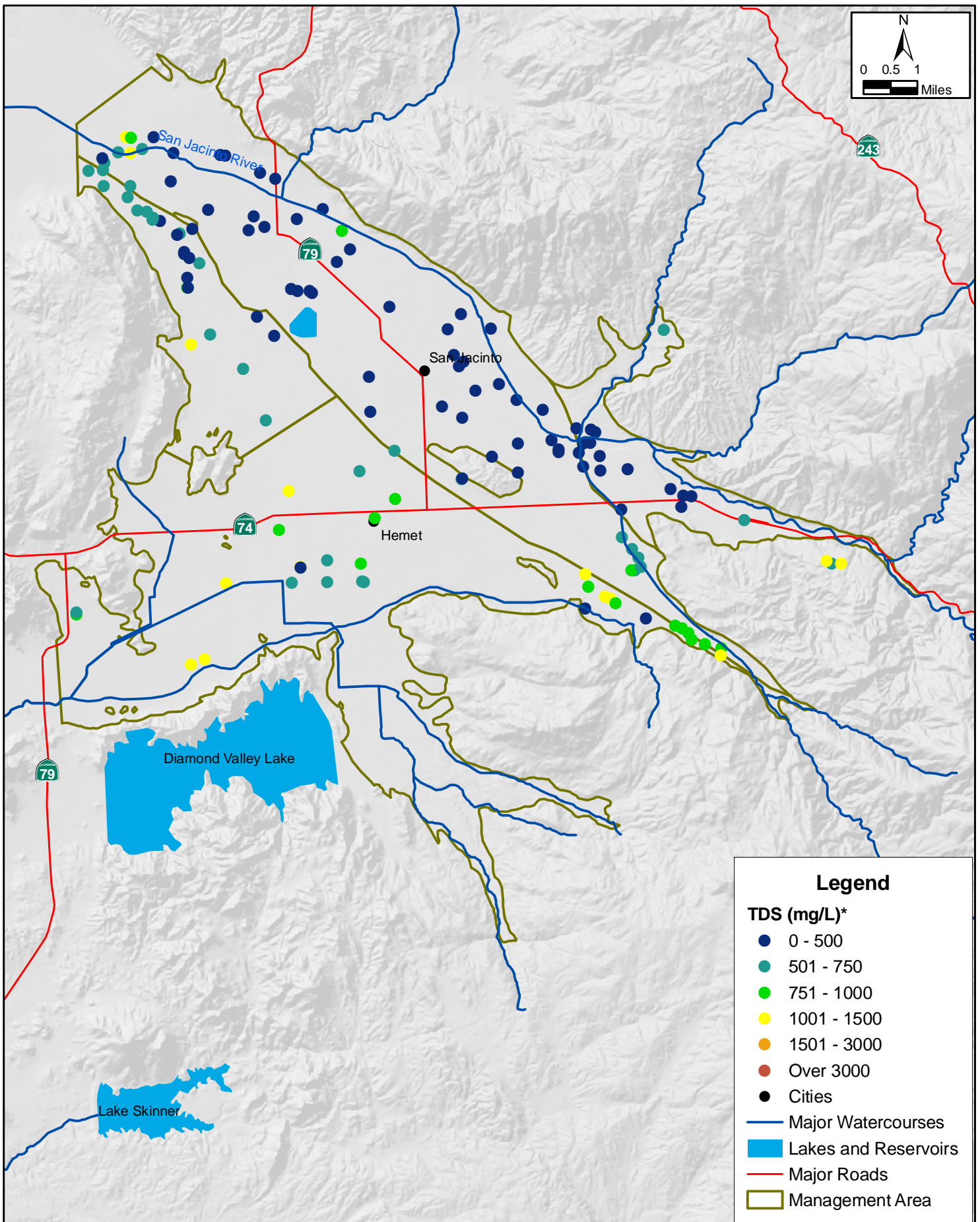
The most recent data from public and private wells, as compiled by EMWD, were used to plot the 2004 nitrate (as N) and TDS conditions as shown in Figures 4.36 and 4.37. While these values are taken from wells screened at different depths, the plots show the general variability in concentrations across the Management Area.



**Legend**

**Nitrate as N (mg/L)\***

- 0 - 2
- 3 - 5
- 6 - 10
- 11 - 15
- 16 - 30
- Over 30
- Cities
- Major Watercourses
- Lakes and Reservoirs
- Major Roads
- Management Area



**2004 TDS Concentrations in Groundwater (mg/L)**

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Hemet / San Jacinto Water Management Plan

\*Source: EMWD

Figure 4.37

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## 5.1 PROJECTED LAND USE CONDITIONS

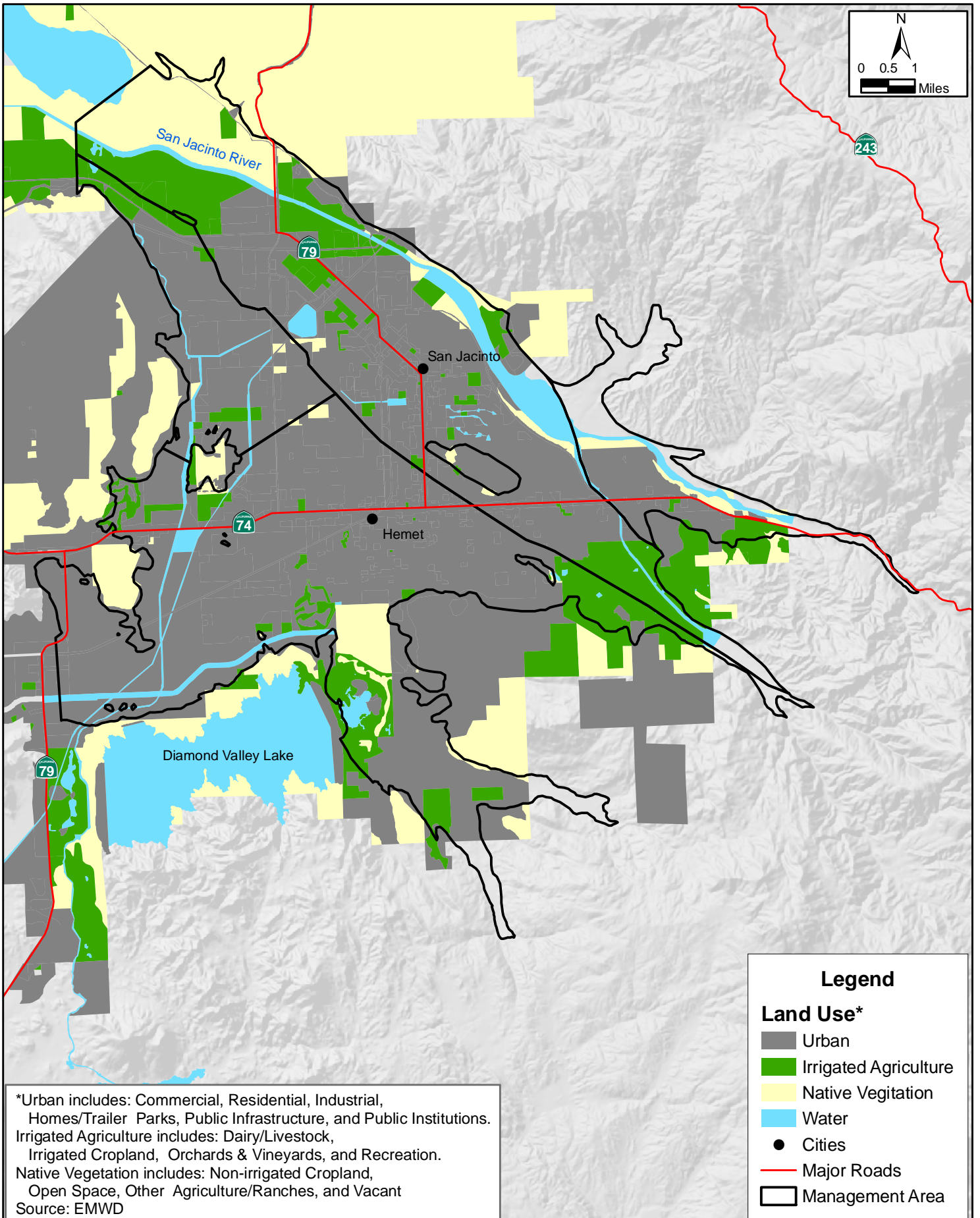
This Section presents a brief description of the projected land use conditions in the Management Area. Figure 5.1 shows the general land use categories at build-out.

Area UWMPs echo the projected urban growth indicated in the build-out land use:

- EMWD UWMP – EMWD service area population, including areas outside the Management Area, projected to increase from 494,000 in 2005 to 830,000 in 2025. (EMWD, 2005a)
- LHMWD UWMP – LHMWD service area population projected to increase from 39,100 in 2005 to 49,500 in 2025. (LHMWD, 2005)
- Hemet UWMP:
  - City of Hemet population projected to increase from 78,600 in 2005 to 154,000 in 2025; and
  - City of Hemet water system service area population projected to increase from 20,200 in 2005 to 22,300 in 2025. (Hemet, 2006)
- San Jacinto UWMP:
  - City of San Jacinto population projected to increase from 34,100 in 2005 to 63,600 in 2025; and
  - City of San Jacinto water system service area population projected to increase from 13,200 in 2005 to 24,000 in 2025. (San Jacinto, 2005)

The total land use acreage for each category is estimated and presented in Table 5.1.

Based on Tables 5.1 and 4.3, the urban area is projected to increase from 28% in the 1998 survey to 65% at build out. This increase is due to a combination of conversion of agricultural land and undeveloped land to urban uses. These future conversions have significant implications on the total projected water demand in the Management Area, as well as impacts on the precipitation, runoff, and recharge conditions. This concept is further discussed in the following sections.



## 2025 Projected Ultimate Land Use

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Figure 5.1





**Table 5.1 Generalized Projected Acreage in the Management Area**

Land Use	Total Acreage	Percent
Urban	37,100	65%
Irrigated Cropland	8,100	14%
Non-Irrigated Cropland	4,500	8%
Water	3,600	6%
Unmapped*	4,000	7%
Total	57,300	100%

\*Unmapped areas are outside EMWD’s service area and were not included in the EMWD ultimate land use dataset.

Source: EMWD ultimate land use (1998), based on city general plans

## 5.2 PROJECTED WATER DEMANDS

Projected water demands are based on information contained in 2005 UWMP, the *Hemet/San Jacinto Water Management Area 2004 Annual Report* (EMWD, 2005b), and *Basin Assessment Report Technical Memorandum No. 1* (WRIME, 2003a). The projected water demands of each of the stakeholders and of the Management Area as a whole are described below.

### 5.2.1 EMWD

Projected retail water demand for the portion of EMWD’s service area within the Management Area is based on the *Hemet/San Jacinto Water Management Area 2004 Annual Report*. Projected total demand is shown together with recent historical demand in Figure 5.2. Estimates of projected demand are also presented in the EMWD’s 2005 UWMP, but these values are for the entire EMWD service area; the UWMP system-wide projections show a similar rate of increase in water demand of approximately 50% from 2005 to 2020.

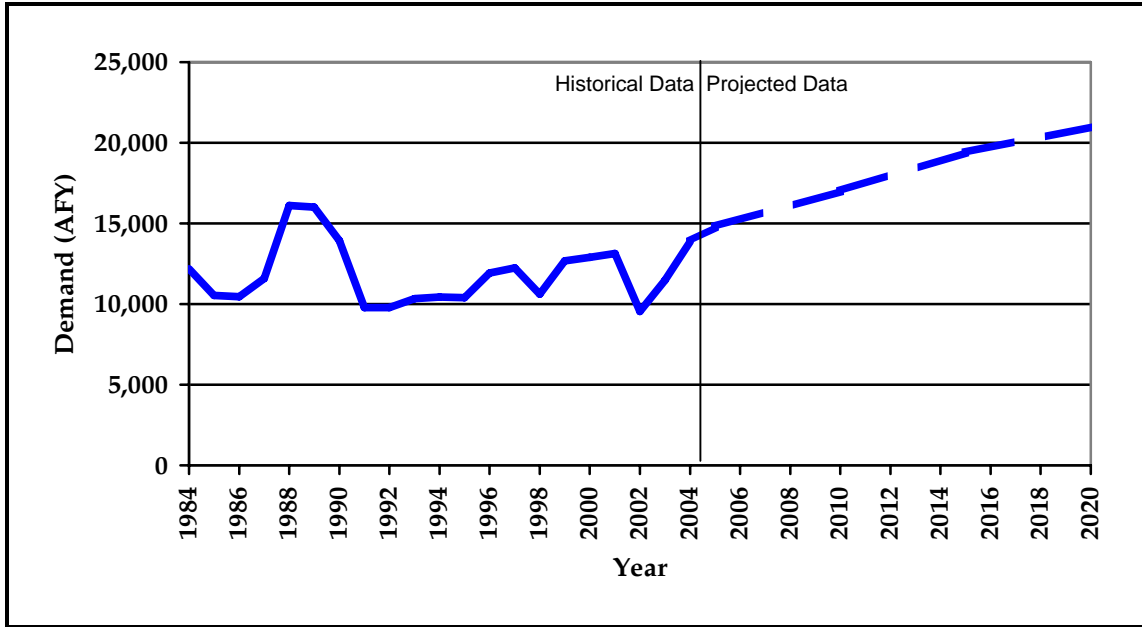


Figure 5.2 EMWD Historical and Projected Demand

5.2.2 LHMWD

Projected water demand is based on *Lake Hemet Municipal Water District 2005 Urban Water Management Plan* (LHMWD, 2005). Projected total demand is shown together with recent historical demand on Figure 5.3.

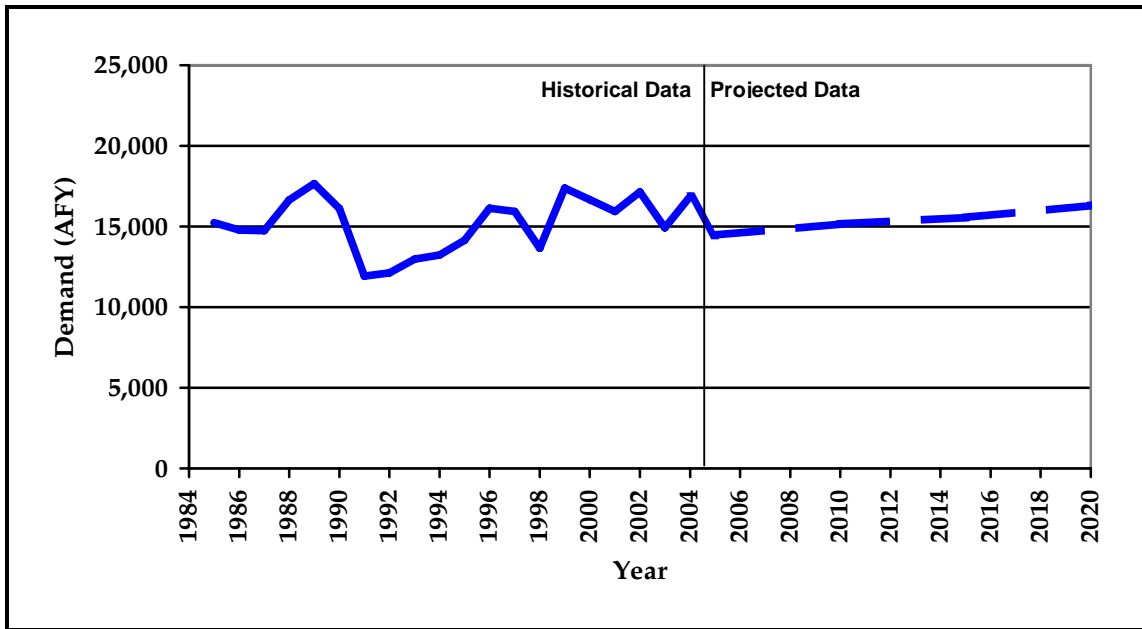
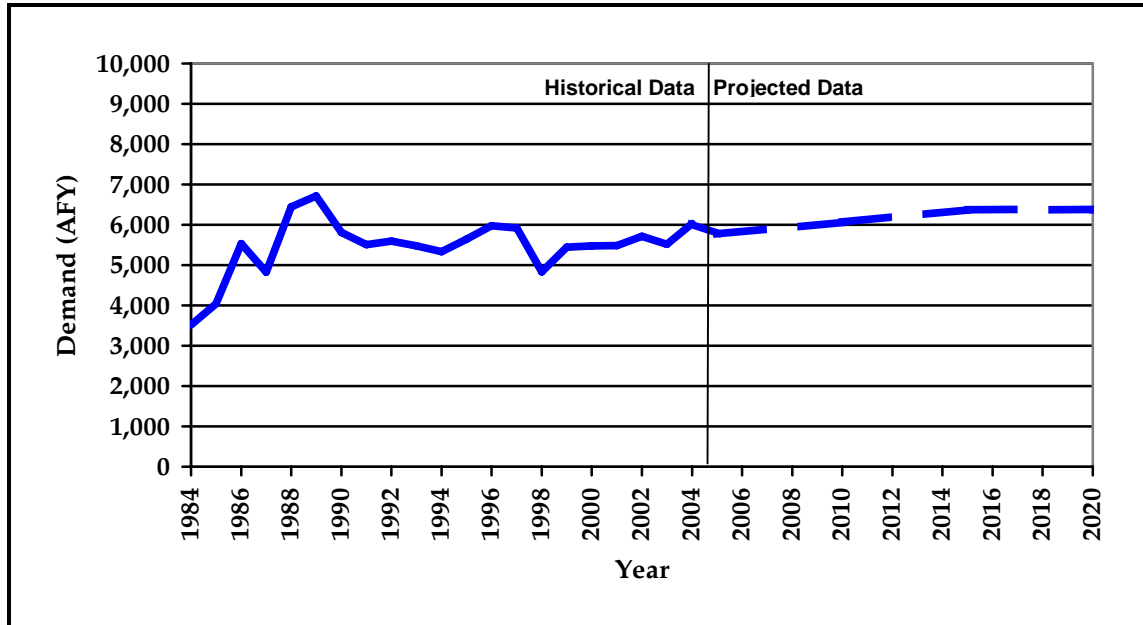


Figure 5.3 LHMWD Historical and Projected Demand

**5.2.3 CITY OF HEMET WATER SERVICE AREA**

Projected water demand in the City of Hemet’s water service area is based on *City of Hemet 2005 Urban Water Management Plan* (Hemet, 2006). Projected demand is shown together with recent historical demand on Figure 5.4.



**Figure 5.4 City of Hemet Water Service Area Historical and Projected Demand**

**5.2.4 CITY OF SAN JACINTO**

Projected water demand in the City of San Jacinto’s water service area is based on *City of San Jacinto 2005 Urban Water Management Plan* (San Jacinto, 2005). Projected demand is shown together with recent historical demand on Figure 5.5.

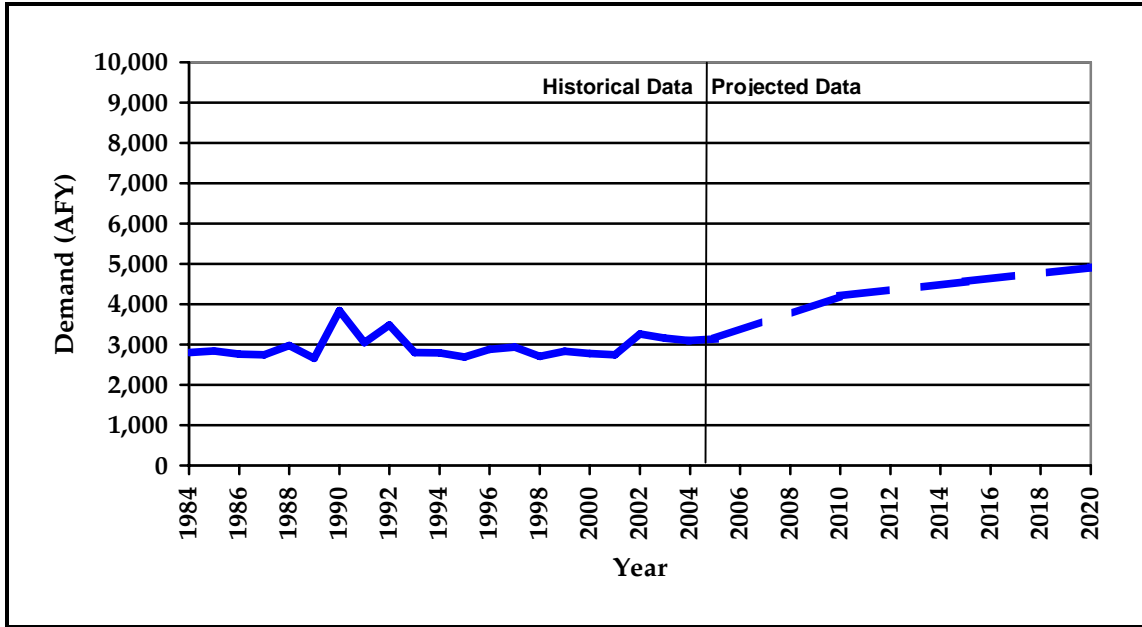


Figure 5.5 City of San Jacinto Water Service Area Historical and Projected Demand

5.2.5 SOBOBA TRIBE

Projected water demand for the Soboba Tribe is taken from the Settlement Agreement, assuming that the Settlement Agreement is implemented in 2008. Projected total demand is shown together with recent historical demand on Figure 5.6.

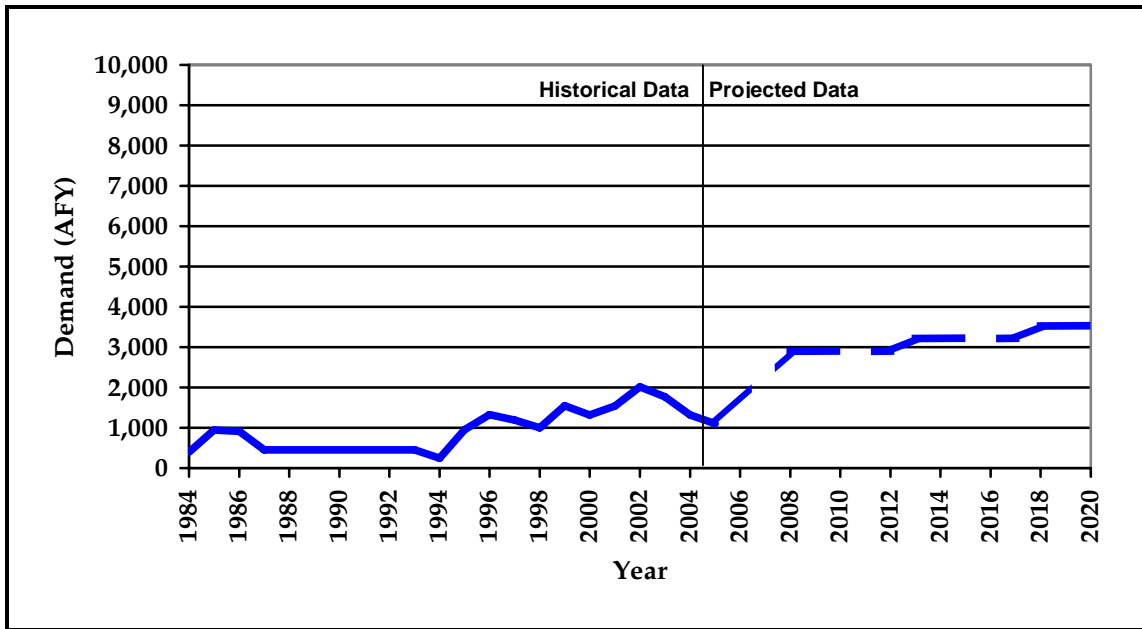


Figure 5.6 Soboba Tribe Historical and Projected Demand

### 5.2.6 PRIVATE WATER PRODUCERS

Projected water demand for the Private Water Producers is a refinement of estimates presented in the Operational Yield Study (WRIME, 2003d) based on updated information on current and future development and their impact on water demand. Figure 5.7 shows the assumed future agricultural water use by local producers together with recent historical demand.

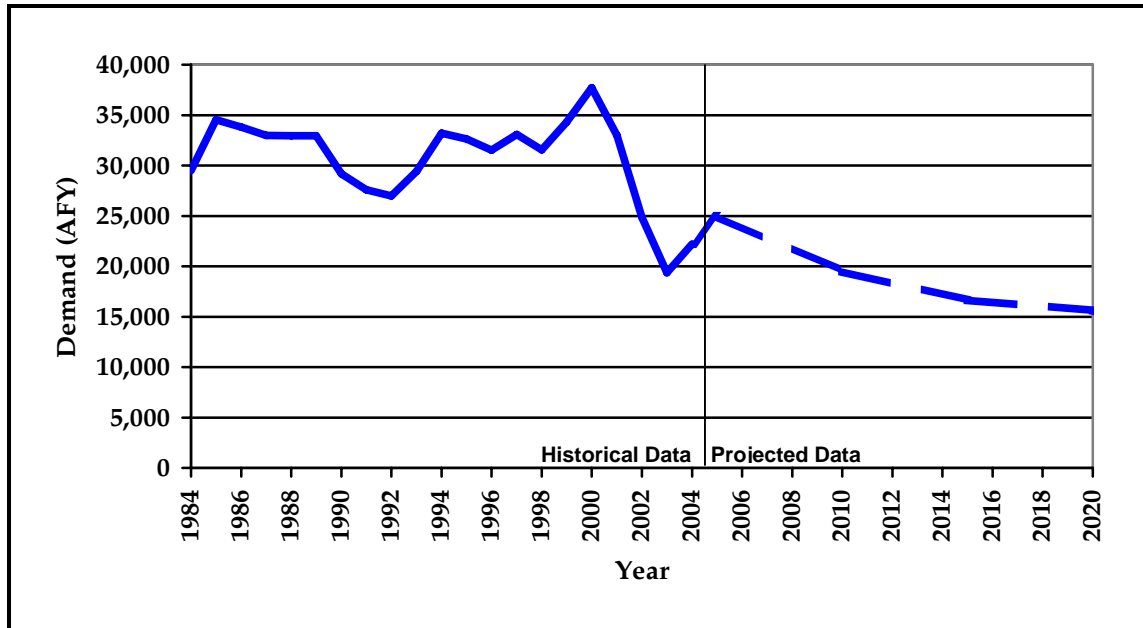


Figure 5.7 Private Water Producers Historical and Projected Demand

### 5.2.7 MANAGEMENT AREA

Projected and historical water demand for the Management Area as a whole presented in Figure 5.8 as the sum of the demand for the individual entities presented in the previous subsections.

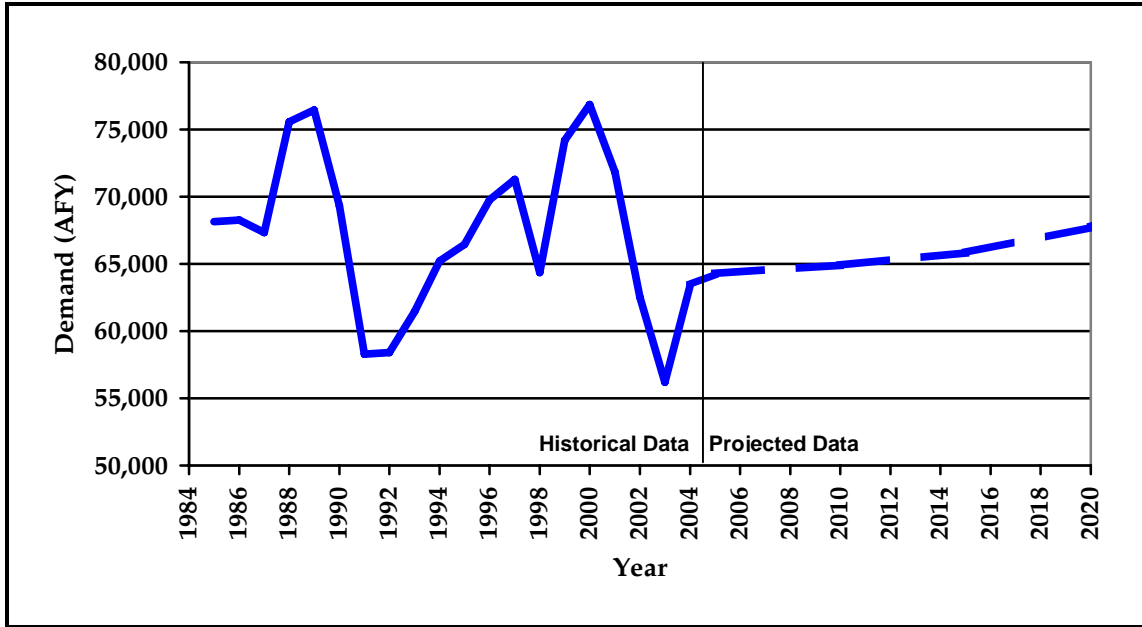


Figure 5.8 Management Area Historical and Projected Demand

### 5.3 FUTURE PLAN PHASES

The Integrated Recharge and Recovery Project is considered to be the core of the Physical Solution. The project is designed and implemented in two Phases. Phase I is described in Section 3 of this Plan. While Phase II facilities are described at the conceptual level, and the EIR is certified, there are additional projects that have been considered by the TC and will need to be evaluated for possible design and implementation. Following is a discussion of Phase II of the IRRP, along with other potential projects.

#### 5.3.1 SAN JACINTO RIVER INTEGRATED RECHARGE AND RECOVERY PROJECT, PHASE II

Phase II of the project consists of construction of the remaining portions of the San Jacinto Integrated Recharge and Recovery Project. The information presented here is based on previously published documents adjusted based on the latest knowledge at the time of publication from ongoing negotiations with regulators. Phase II will provide up to 110 cfs of recharge water capacity and will cost approximately \$50 million\*. A schematic of Phase II is shown in Figure 5.9. Major activities during Phase II are:

- 1. Construction of Recharge Basins** - This activity includes construction of nine additional recharge ponds within the San Jacinto River bed in three clusters of









\* Number has been updated since the publication of the IRRP Feasibility Report.

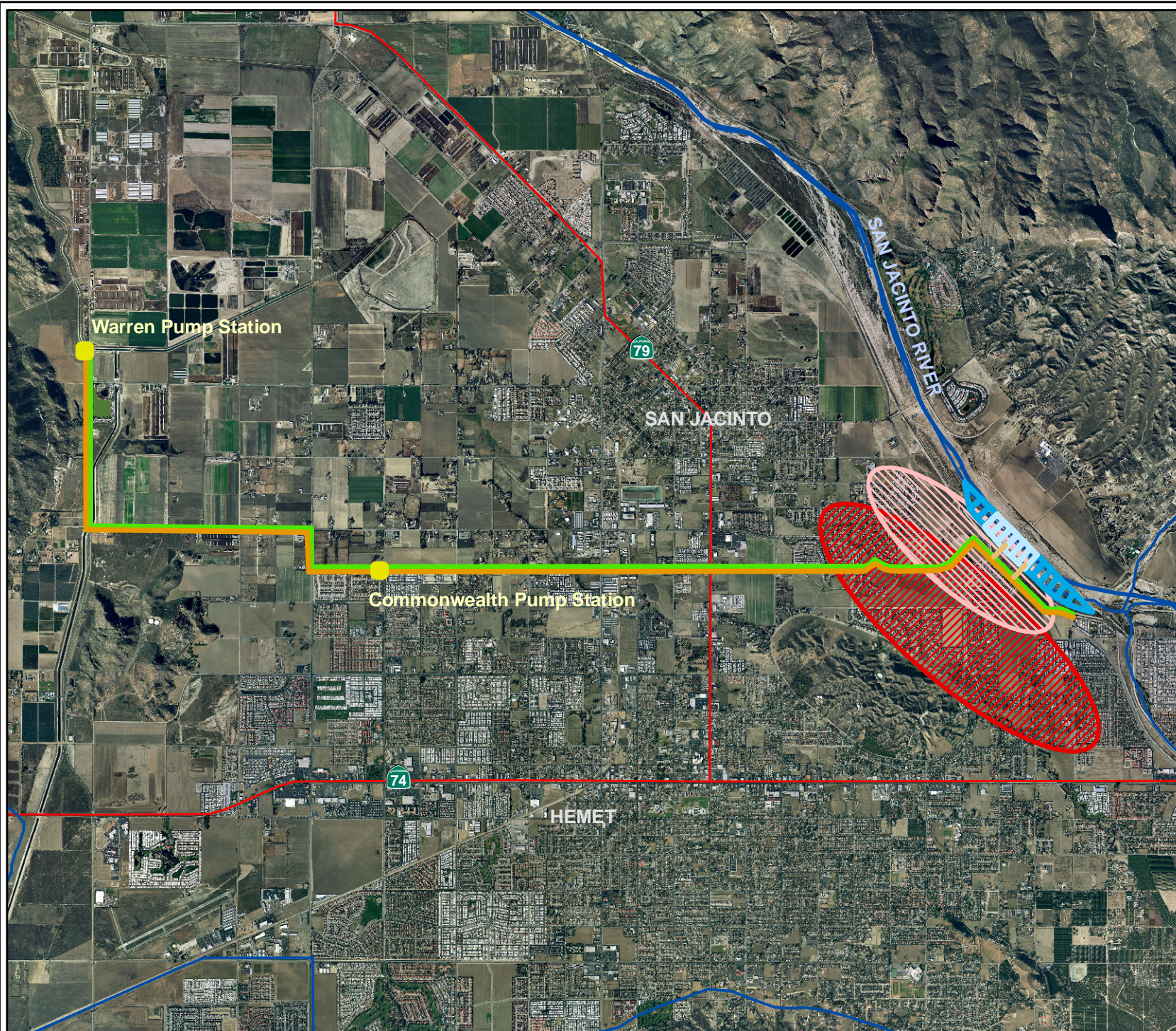


Hemet / San Jacinto  
Water Management  
Plan  
**Schematic of Integrated  
Recharge Recovery  
Program - Phases I and II**

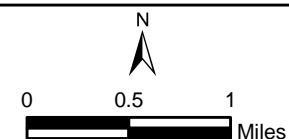
Figure 5.9

**Legend**

-  Pump Station
-  Phase I Pipeline
-  Phase II Pipeline
-  Phase I Ponds
-  Phase II Ponds
-  Existing Pipeline
-  Phase I Well Field
-  Phase II Well Field



Source: EMWD



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three basins each, covering approximately 35 acres. Combined Phases I and II will have 15 basins covering approximately 70 acres\*.

2. **Construction of Pipelines** - This includes design and construction of a 7.7 mile water supply pipeline from the EM-14 turnout to the proposed recharge basins. Included is increasing the capacity of the EM-14 turnout structure from 40 cfs to 110 cfs; replacing 200 feet of 48-inch-diameter pipeline with 63-inch-diameter pipeline; constructing 15,800 feet of new 54-inch-diameter pipeline paralleling the existing 39-inch-diameter pipeline; and constructing 24,800 feet of new 57-inch-diameter pipeline paralleling the existing 33-inch-diameter pipeline.
3. **Pump Station Upgrades** – Upgraded or new pump stations would be built to increase capacity at the Warren Road and Commonwealth pump stations.
4. **Drilling of Extraction Wells** - This includes construction and testing of up to five additional extraction wells designed and operated identically to those constructed in Phase I. The construction of these new wells will result in a total of up to eight Phase I and II extraction wells.
5. **Design and Construction of Monitoring Wells** – Up to three additional monitoring wells will be constructed, bringing the total number of Phase I and II monitoring wells to up to six wells.

Only Phase I has been designed in detail and funding sources are being secured.

### 5.3.2 POTENTIAL CONJUNCTIVE USE PROJECTS

Conjunctive use is the coordinated operation of surface water storage and use, groundwater storage and use, and conveyance facilities to meet water management needs. This recognizes that there is a hydrologic connection between the surface water resource and the groundwater resource (DWR, 2006). In the Management Area, conjunctive use helps utilize available subsurface storage along with seasonally available water (imports and local surface water) or recycled water. Methods currently being considered include direct recharge and in-lieu recharge.

As part of the basin planning process, the TC identified and selected seven potential direct recharge sites and two potential in-lieu recharge projects for further evaluation and prioritization out of a pool of 15 direct recharge sites and two in-lieu projects initially considered. Further information is provided in *Hemet/San Jacinto Basin Assessment – Basin Assessment Report/Integrated Water Management Plan, Technical Memorandum No. 2, Analysis of Impacts of Conjunctive Use Projects* (WRIME, 2003c).

The recharge sites were selected based on screening criteria that included:

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\* Number has been updated since the publication of the IRRP Feasibility Report.



- General site characteristics (size, recharge needs, ownership, etc.),
- Hydrogeologic suitability,
- Sub-basin interaction,
- Engineering suitability,
- Land use suitability, and
- Environmental impacts.

The seven potential direct-recharge sites and two in-lieu projects are shown on Figure 5.10. In general, the direct recharge sites would utilize imported water, surface water, or recycled water to recharge the groundwater through surface spreading; the in-lieu projects (Upper Pressure In-Lieu Project and Hemet-Simpson CU Area) were designed to reduce the amount of groundwater production by delivering imported water, from either the Colorado River or the State Water Project, to be used in conjunction and coordination with local groundwater.

A preliminary description of the recharge sites is presented based on information from City of Hemet, City of San Jacinto, LHMWD, and EMWD, along with a brief review of available reports. Table 5.2 summarizes the findings for the nine potential projects. All findings are tentative planning-level data and should not be used in any intensive analysis without further research.

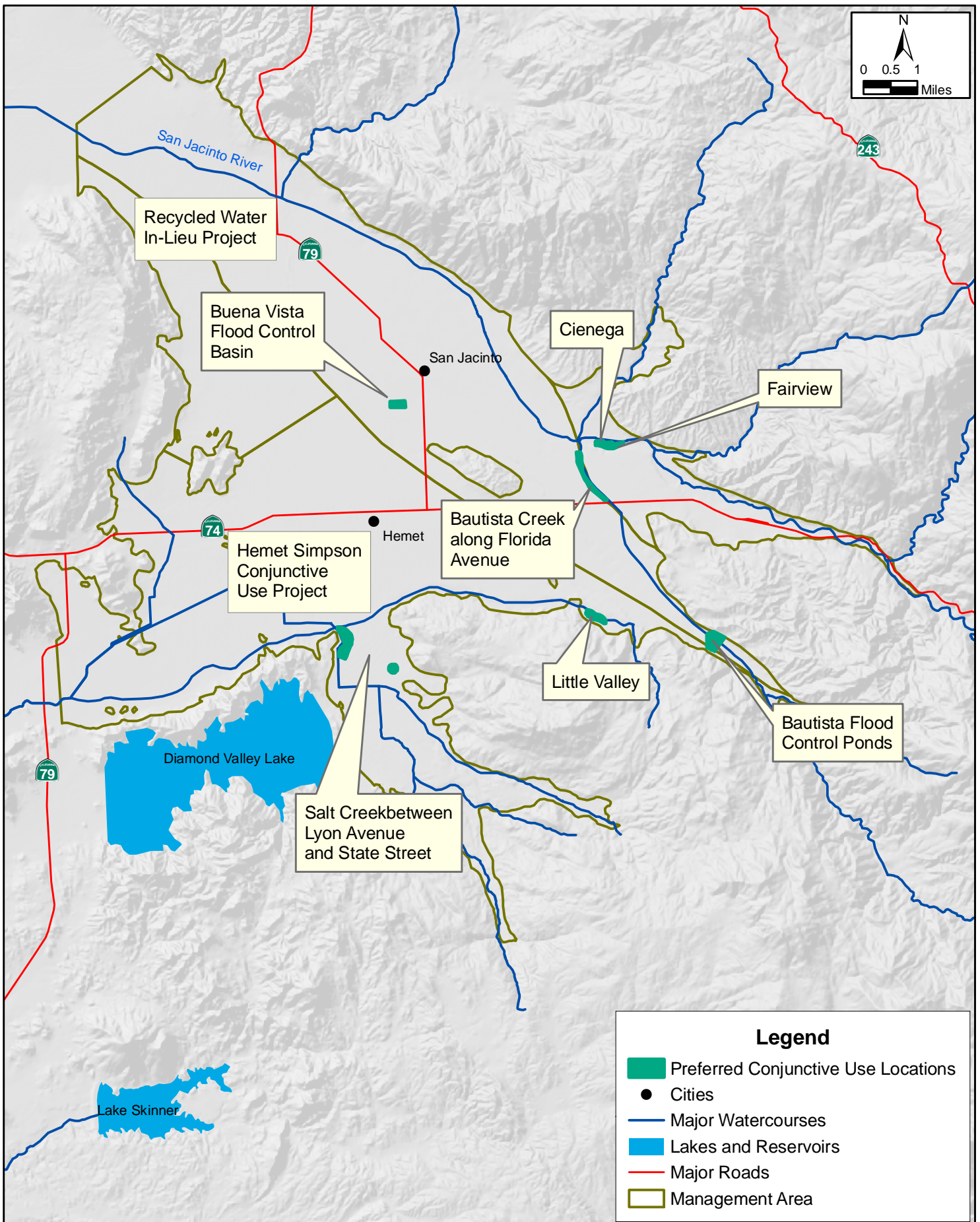
The identification of the potential sites allows for the concentration of future work on these sites. The future work includes:

- Evaluation of the general site conditions;
- Evaluation of water supply availability and reliability;
- Preparation of an environmental checklist; and
- Evaluation of the effectiveness of the projects in meeting the goals and objectives of the Management Area.

A more detailed description of each site is provided below.

### **5.3.3 DIRECT RECHARGE PROJECTS**

Direct recharge projects involve utilizing available imported, surface, or recycled water in a constructed basin for percolation to groundwater. Successful projects require a site with high permeability to allow for water to quickly percolate to groundwater; compatible nearby land uses; an available and accessible water supply; and the ability to either recapture the water or allow the water to raise groundwater levels. The Plan supports the use of direct recharge of water of suitable quality.



### Location of Nine Preferred Projects

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Figure 5.10



**Table 5.2 Summary of Selected Conjunctive Use Site Conditions**

Site	Project Type	Water Source	Annual Water Availability	Soils Infiltration Rate	Approximate Depth to Water (ft)	Potential Constraints
Buena Vista Flood Control Basin	Recharge	Runoff, recycled, or imported	600 AF	n/a	200 – 250	Groundwater quality
Cienega	Recharge	River diversion	n/a	High	210 - 240	Kangaroo Rat, water rights
Fairview	Recharge	River diversion	n/a	High	210 - 240	Kangaroo Rat, water rights
Bautista Creek along Florida Avenue	Recharge	Irrigation water, Bautista Creek, imported	n/a	Moderate	n/a	n/a
Salt Creek between Lyon Avenue and State Street	Recharge	Salt Creek diversion/runoff	1,000 AF	Moderate	200 - 250	n/a
Little Valley	Recharge	Runoff, LHMWD flume, imported	n/a	High and variable	85	Potential archeological sites, shallow bedrock
Bautista Flood Control Ponds	Recharge	Surface runoff/ river diversion	n/a	n/a	180 - 210	No proponent
Upper Pressure In-lieu Project	In-lieu	Imported (Colorado River)	n/a		n/a	Must gain agreements between many parties
Hemet-Simpson Conjunctive Use Project	In-lieu	Imported (Colorado River and State Water Project)	n/a		n/a	Must gain agreements between many parties

**5.3.3.1 Buena Vista Flood Control Basin**

The existing Buena Vista flood control basin has been identified as a potential recharge project site. Buena Vista basin, located at the end of Buena Vista Street north of Esplanade Avenue, is located in the Upper Pressure Management Zone and is owned and operated by RCFC&WCD.

The site would initially use storm water for recharge purposes. Recharge water would be conveyed to the site from the 2,700-acre drainage area by existing drainage facilities that are owned by RCFC&WCD. It is estimated that approximately 600 AF of water could be delivered to the basin via runoff, with a first flush volume of approximately 20 AF. Surface water quality is good, with some elevated levels of oil and grease, suspended residues, and iron, based on sampling on March 6, 1992 (Singh, 1992). The basin can be enlarged through excavation to provide an additional 36 AF of storage volume, approximately equal to the average storm event runoff.

There is an existing EMWD raw water pipeline that runs nearby along Oakwood Street. This pipeline could potentially be used to supply the project with recycled or imported water (if supplies were to be available) in the future, although it would require the construction of an approximately 4,000-foot pipeline to connect to the basin.

The following items should be considered before moving forward with this project:

- Availability of the site for use and coordination with flood control needs;
- Surface water quality;
- Water infiltration potential;
- Deep percolation potential;
- Availability of imported water to augment surface runoff;
- Subsurface conditions; and
- The clogging potential of surface soils with local runoff.

### **5.3.3.2 Cienega and Fairview**

The Cienega and Fairview sites are adjacent, thus conditions are essentially the same and described together. Preference between the two sites would be based on political, engineering, environmental, and operational factors.

The Cienega and Fairview sites are located in the Canyon Management Zone. Fairview was first used in the early 1990s by LHMWD. LHMWD cut basins near the riverbed and placed a diversion dam in the river. Water was diverted into the basins during the rainy season, typically the 1st quarter of the year. Future use of Fairview, potentially by LHMWD and/or EMWD, would likely involve an expansion of the basin area. Water would be supplied from the river during periods of increased flow, typically January through March. Imported water could also be used if water becomes available and the infrastructure could be built. Infiltration rates are considered high based on monitoring well responses during LHMWD's use, a study by EMWD at the Cienega blowoff pond, and the prevalence of coarse-sand riverbed deposits.

Potential problems for development of the project include San Bernardino Kangaroo Rat habitat, water rights, and limited available underground storage.

### **5.3.3.3 Bautista Creek along Florida Avenue**

Bautista along Florida is located along the boundary between Upper Pressure and Canyon Management Zones. There is an existing recharge site located along the west side of Bautista Creek. The creek was placed in a concrete channel in the 1970s and 1980s, reducing recharge to the aquifer system. The current recharge facility was installed in the 1960s and consists of 3 ponds located along the creek. The three ponds cover approximately 15–20 acres. Future use of the site could include increasing the pond area through expansion to the north and increasing the supply of water to the ponds. Water for the existing project is provided by a turnout that captures agricultural runoff of acceptable quality from Bautista Creek. In general, creek water is not diverted into the ponds. Currently, approximately 200-300 AFY is recharged. Future recharge activities could take advantage of the nearby imported (State Project Water) raw water line on Cedar Avenue. Percolation rates at the site are considered reasonable based on field observations of surface sediments.

### **5.3.3.4 Salt Creek between Lyon Avenue and State Street**

Two potential sites are identified along Salt Creek for a recharge project. One site, State Street Basin, is at the State Street crossing of Salt Creek; a second site, Lyon Basin, is downstream of State Street, near Lyon Avenue. Both sites are located in Hemet South Management Zone. Lyon Basin is the preferred location and is planned to be approximately 40 acres in size and approximately 5 feet deep, resulting in a maximum storage volume of 200 AF. The volume of the State Street Basin would likely be similar to that of the Lyon Basin. Both sites would initially use storm runoff for recharge purposes. Recharge water to both sites would be conveyed to the site via Salt Creek. It is estimated that five storm events per year could each fill the Lyon Basin, resulting in delivery of approximately 1000 AF/year for recharge. Anticipated future development of the watershed will likely increase the amount of available runoff. The State Street site would likely have slightly lower volumes due to its upstream location. Due to limited upstream development, water quality is anticipated to be good.

Potential problems for development of the project include water rights, relatively shallow depth to water and relatively shallow depth to bedrock that may limit the amount and rates of recharge at the sites.

### **5.3.3.5 Little Valley**

Little Valley is located in Hemet South Management Zone. Previously in a pilot project, water was supplied over 2 or 3 years via a LHMWD flume to the area. Water for the recharge basin would be provided by local surface runoff, the LHMWD flume, or from imported water. Infiltration testing in the past has shown rates between 0.6 and 1.4 ft/day in the central part of the valley and 2.0 and 4.6 ft/day in the eastern part of the valley (Rees, 1994).

The following items should be considered before moving forward with this project:

- Potential environmental constraints including possible archeological sites; and
- Shallow depth to bedrock may limit the amount and rate of recharge at the site.

### **5.3.3.6 Bautista Flood Control Ponds**

The Bautista Flood Control Ponds are located in the Upper Pressure Management Zone, very close to the boundary with the Hemet South Management Zone.

The existing ponds are owned and operated by RCFC&WCD and are comprised of a debris dam that creates the 49-acre pond. Future use of the site, apart from continued flood control, would likely be for water harvesting.

## **5.3.4 IN-LIEU PROJECTS**

In-lieu recharge projects involve reducing the usage of groundwater and substituting it with available imported, surface, or recycled water. Successful projects require water users whose needs coincide with the availability and quality of the alternate water supply. The Plan supports the use of quality direct recharge projects.

### **5.3.4.1 Raw Water In-Lieu Projects**

Imported raw water is available from MWD and provides opportunities for in-lieu recharge projects for agricultural users or landscape irrigation. Raw water is available from the State Water Project via EM-14 and from the Colorado River Aqueduct via EM-1. Proximity to these connections is an important factor for keeping costs low for in-lieu projects. One hurdle for such projects is that the period when there is the most availability of raw water, winter, coincides with the period of lowest demand for most agricultural users. Another hurdle is the need for blending the raw water with higher quality groundwater supplies to meet the needs of some of the more sensitive users, such as dairies.

#### **5.3.4.2 Recycled Water In-Lieu Projects**

Recycled water is a reliable source of water year round and offers an opportunity for in-lieu use. Public perception generally limits the usage of recycled water to agricultural and landscape irrigation uses. The nearest source of recycled water is the San Jacinto Valley Regional Water Reclamation Facility. Proximity to this source is an important factor for keeping costs low for in-lieu projects.

One project already in the planning stages would deliver between 3,500 and 8,000 AFY of recycled water to Rancho Casa Loma and the Scott Brothers Dairy, both located roughly between Ramona Expressway and Gilman Springs Road and between Sanderson Avenue and Bridge Street in the northwestern-most portion of the Upper Pressure and Hemet North Management Zones. The delivered recycled water would coincide with an equivalent reduction in groundwater pumping by both Rancho Casa Loma and Scott Brothers Dairy. Details of the project include construction of approximately 13,000 linear feet of 24-inch pipeline, and acquisition of property in fee title and easement. Project costs would be split between the Public Agencies based on the pro-rata share of proposed production rights. Agreements with Rancho Casa Loma and the Scott Brothers Dairy would set limits on groundwater production and provide for payment of a portion of the O&M costs.

#### **5.3.4.3 Hemet-Simpson Conjunctive Use Project**

Currently MWD delivers treated water from Colorado River and State Water Project to its wholesale customers using the Skinner Water Treatment Plant. Although the Skinner plant is at full capacity, during wet years there appears to be excess water available from the plant for other potential wholesale customers.

The Simpson pump station is currently capable of pumping water to both the west and east. The treated water available from the Skinner plant would be used by customers such as the City of Hemet in lieu of groundwater pumping. The Simpson pump station has a capacity of approximately 14.5 cfs.

The following issues and constraints should be evaluated for this project:

- Quantity and timing of water available from the Skinner Plant;
- Quality of Skinner Plant water in relation to the groundwater quality used by customers such as City of Hemet, and any blending issues;
- Use of chlorinated water from Skinner Plant versus well water that does not contain chlorine;

- Transmission pipeline from Skinner line to the Simpson pump station and from Simpson pump station to local distribution system;
- Connections to the local distribution system and their impacts on the distribution system pressure zones; and
- Cost of MWD water and the cost distribution of such delivery.

#### **5.3.4.4 Hemet Water Filtration Plant**

Availability of treated imported water for distribution, in-lieu of groundwater production, has become a significant source for reducing stress on the groundwater system. One of the limiting factors in the substitution of imported water for groundwater is the ability to treat the imported water, which requires more treatment than groundwater. To allow for increased use of imported water, EMWD is building the 10 mgd (11,000 AFY) Hemet Water Filtration Plant near the intersection of Commonwealth Avenue and Kirby Street in Hemet. The plant will utilize State Water Project supplies.



The purpose of this Section is to document the background and settings in establishing the groundwater production rights for each Public Agency. The Base Production Rights and the method for determining Adjusted Production Rights have been established in a collaborative manner among the agencies, and have been the basis for the distribution of costs in a number of occasions during the development of the Plan.

## 6.1 PUBLIC AGENCIES BASE PRODUCTION RIGHTS

### 6.1.1 GENERAL

Together, the Public Agencies agreed upon some basic principles as a basis for allocating Base Production Rights. The base period for documenting actual pumping was determined to be calendar years 1995 through 1999. Figure 6.1 shows the average annual groundwater production by each Public Agency for 1995 – 1999. It was also recognized that, as a result of various operational activities of the Public Agencies, several adjustments would need to be made to the raw pumping data for 1995-1999. It was ultimately agreed to finalize all appropriate adjustments and to make one comprehensive adjustment to each Public Agency's raw 1995-1999 recorded pumping.

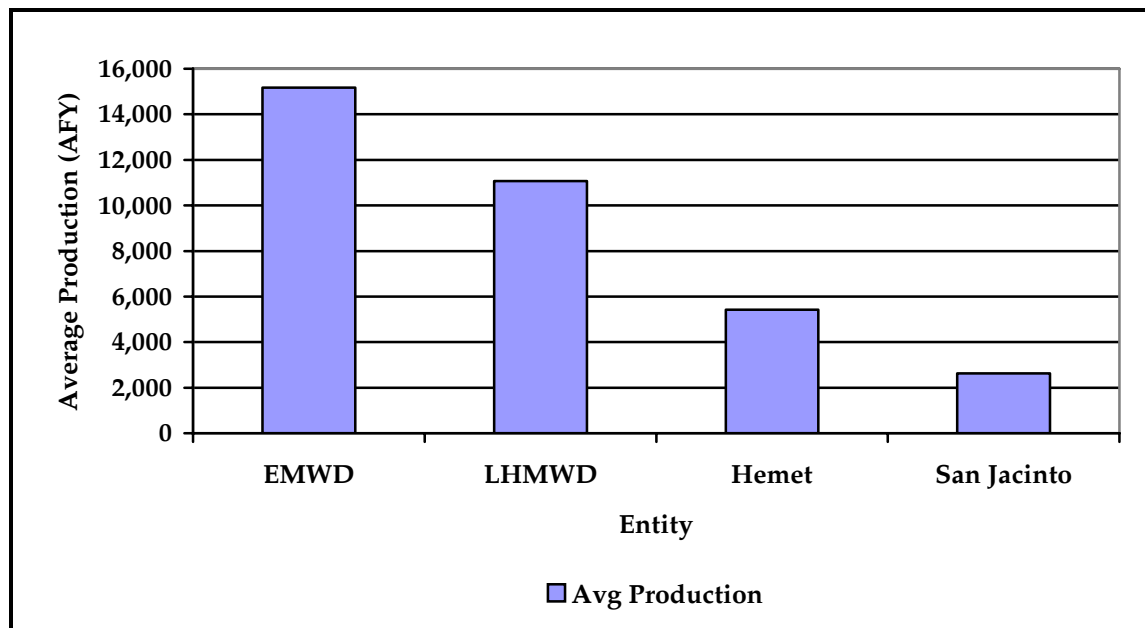


Figure 6.1 Average Annual Groundwater Production, 1995 - 1999

The operational activities that impacted groundwater resources, and therefore were used to make appropriate adjustments to raw 1995-1999 pumping data, include:

- Recharge Activities;
- MWD San Jacinto Tunnel Seepage;
- Fruitvale Entitlement Water Sold by EMWD to LHMWD, City of Hemet and City of San Jacinto;
- River Diversions;
- Conveyance Water Deliveries; and
- Other Considerations.

The Fruitvale Entitlement allocation amount was determined to be a total of 597 acre-feet for LHMWD, and Cities of Hemet and San Jacinto. The Tunnel Seepage allocation amount was determined to be 1,800 AFY, and the river diversions were determined to be 3,635 AFY for pro-ration to the four agencies. The Public Agencies have, therefore, been assigned the pro-rata shares of Base Production Rights as shown in Table 6.1:

**Table 6.1 Base Production Rights**

<b>Public Agency</b>	<b>Base Production Rights (AFY)</b>	<b>Base Production Rights (Percent)</b>
EMWD	10,869	33.7%
LHMWD	11,063	34.2%
City of Hemet	6,320	19.6%
City of San Jacinto	4,031	12.5%
<b>Total</b>	<b>32,283</b>	<b>100 %</b>

The details of the Public Agencies Base Production Right, with their corresponding adjustments, are described below:

### 6.1.2 EMWD BASE PRODUCTION RIGHTS

For EMWD, the 1995-1999 actual average annual pumping was determined to be 15,166 AFY. After consideration of all appropriate adjustments, it was determined that EMWD's Base Production Right would include a deduction of 2,497 acre-feet for conveyance water and an additional net deduction of 1,800 acre-feet for other operational activities, including tunnel seepage, export, and Fruitvale Entitlement water sales. Therefore, EMWD's Base Production Right was set at 10,869 AFY.

### **6.1.3 LHMWD BASE PRODUCTION RIGHTS**

For LHMWD, the 1995-1999 actual average annual pumping was determined to be 11,063 AFY. There were no net adjustments for LHMWD as their credit for the Fruitvale entitlement water purchase tunnel seepage was deemed to be equivalent to their surface water diversion. Thus, the Base Production Right for LHMWD is set to 11,063 AFY.

### **6.1.4 CITY OF HEMET BASE PRODUCTION RIGHTS**

For the City of Hemet, the 1995-1999 actual average annual pumping was determined to be 5,420 AFY. After consideration of all appropriate adjustments, it was agreed that the City of Hemet's Base Production Right would include an additional 900 AFY pumping right to account for Fruitvale Entitlement water purchase tunnel seepage credit, and surface diversion water. Therefore, the City of Hemet's Base Production Right was set at 6,320 AFY.

### **6.1.5 CITY OF SAN JACINTO BASE PRODUCTION RIGHTS**

For the City of San Jacinto, the 1995-1999 actual average annual pumping was determined to be 2,631 AFY. However, review of the city's historic pumping showed the 1995-1999 base period was not as representative as other historic pumping periods. Therefore, it was agreed for the City of San Jacinto to receive an additional 500 AFY of pumping rights. In addition, after consideration of all other appropriate adjustments, it was determined that San Jacinto's Base Production Right would include an additional 900 AFY pumping right to account for Fruitvale Entitlement water purchase tunnel seepage credit and surface diversion water. Therefore, the City of San Jacinto's Base Production Right was set at 4,031 AFY.

## **6.2 PRIVATE WATER PRODUCER'S PRODUCTION RIGHTS**

### **6.2.1 GENERAL**

Development of the Hemet-San Jacinto Water Management Plan recognizes the rights of the overlying pumpers to pump and beneficially use needed groundwater. The overlying pumpers within the management area include Private Water Producers (and the Soboba Band of Luiseño Indians, discussed later). In recognition of the Private Water Producers' overlying rights, the management plan does not adversely impact or affect these rights and uses that are consistent with historical uses.

The Plan provides for the Private Water Producers to be Non-participants, Class A Participants, or Class B Participants. For Non-participants, the private producer(s) may elect to not participate and/or not acknowledge the Plan's existence. Non-participants are free to continue their past practices of pumping groundwater for beneficial uses according to state law. Non-participants are also excluded from future participation in the Plan. Class A and Class B Participants are described below.

### **6.2.2 CLASS A PRODUCTION RIGHTS**

Class A Participants in the Plan have agreed to cooperate with the administrative and pumping accounting portions of the Plan. While historic pumping and beneficial uses may continue, the Class A Participants' pumping facilities are subject to metering, testing, and water level and water quality sampling at no cost to the owner. This information is valuable for successful implementation of the Plan. Class A participants are eligible to convert to Class B Participant status during the first three years of formal Plan implementation (Entry of the Judgment), with the payment of all past assessments (without interest) that would have been incurred as a Class B Participant.

### **6.2.3 CLASS B PRODUCTION RIGHTS**

Class B Participants become participants to the Plan and have their water rights determined. The annual Base Production Right shall be determined based upon the average annual production from 1995 to 1999, less any amount of water that had been used on land that was developed for non-agricultural purposes after 1999, which is the Participant's Base Production Right. The Class B Participant shall pay Replenishment Water Assessments for pumping in excess of the individual Base Production Right. Class B Participants are not subject to Administrative Assessments, and until conversion to a Public Agency, not subject to reduction in Safe Yield. Class B Participants may sell or lease unused groundwater to the Watermaster or one of the Public Agencies, under terms and conditions approved by the Watermaster. Upon conversion of a Class B Participant's land from agricultural to a use that requires water service from a Public Agency, the Public Agency shall credit, to the extent legally permissible, the Class B Participant's Base Production Right, adjusted pursuant to certain reductions, against any requirement then in effect for any water supply assessment requirements, or against any fees associated with water supply that the Public Agency may then have in effect. The Public Agency serving the converted land shall receive a credit added to its Base Production Right as set forth in the Judgment. Class B Participants to the Plan have also agreed to participate in the groundwater monitoring and pumping accounting portion of the Plan, at no cost to the owner.

### **6.3 SOBOBA TRIBE WATER RIGHTS**

Section 8 of this document provides a detailed description of the Soboba Indian Tribe water rights.

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This Section provides a description of the surface water rights and licenses held by LHMWD and EMWD. The contents of this Section are provided for general information and documentation of the surface water rights only; such rights are not affected by the Stipulated Judgment or this Plan.

## **7.1 LHMWD'S DIVERSION RIGHTS**

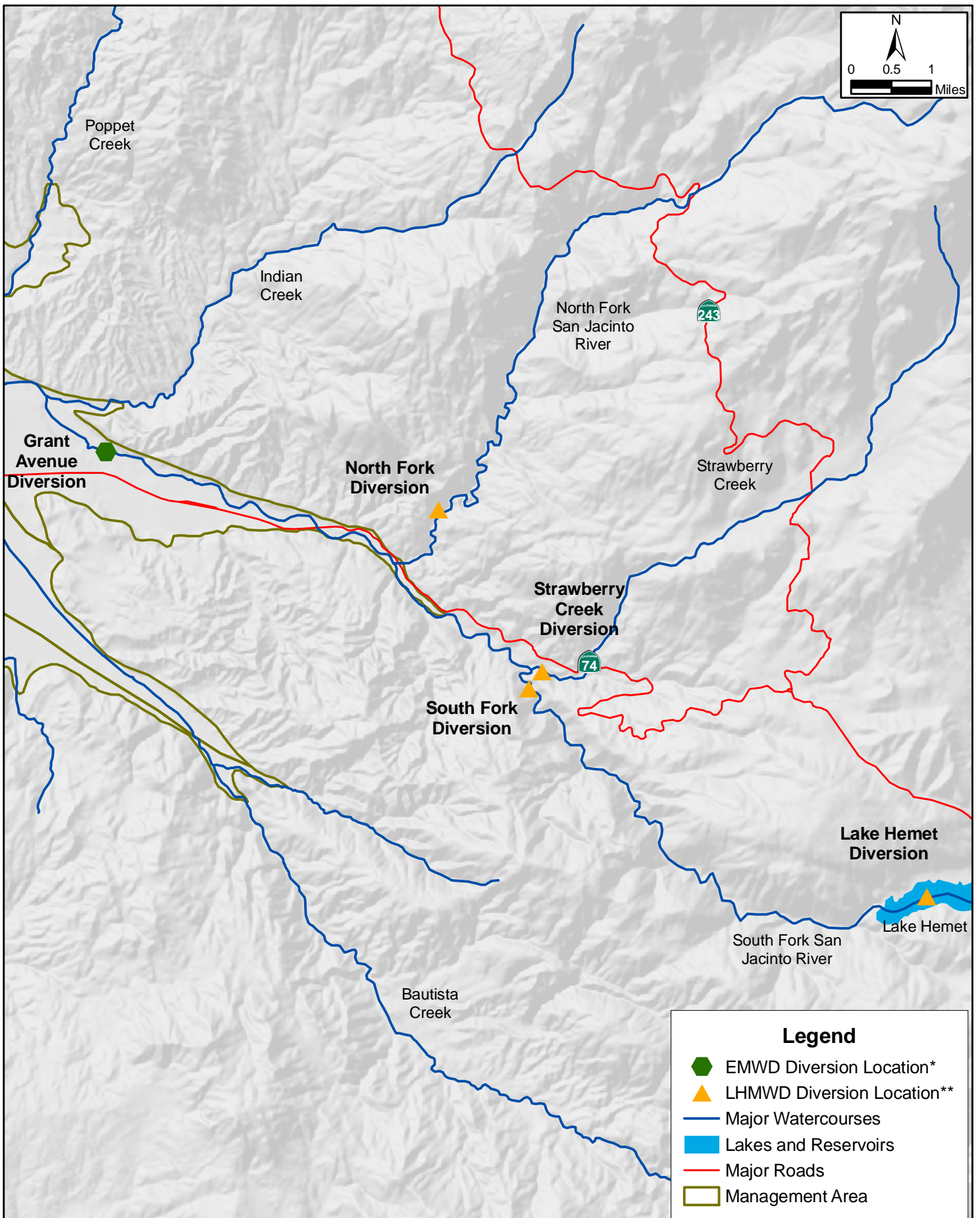
LHMWD holds pre-1914 rights to divert and store water in Lake Hemet, and to divert water from Strawberry Creek, and from the North and South Forks of the San Jacinto River (See Figure 7.1). These rights have been acquired as the successor-in-interest to rights established by the Fairview Land and Water Company, the Lake Hemet Company, the Lake Hemet Water Company, the Florida Water Company, Charles Thomas, H. M. Johnston, E. L. Mayberry, W. F. Whittier, William B. and Mary Webster, and others.

### **7.1.1 LAKE HEMET**

Construction of Lake Hemet Dam began in 1889 and was completed in 1895. The reservoir is located in Township 6S, Range 3E, Sections 7 and 8. Water rights for the diversion and storage of water are based on actual use and upon at least these Notices of Appropriation filed on November 18, 1884 in Book 1 of Water Claims, page 38; on January 19, 1885 in Book 1 of Water Claims, page 47; on December 23, 1885 in Book 1 of Water Claims, page 115; on April 7, 1886 in Book 1 of Water Claims, page 134; and on October 18, 1890 in Book 2 of Water Claims, page 61. The reservoir impounds water from Hurkey Creek and the South Fork of the San Joaquin River, and has a capacity of 12,775 acre-feet. Releases from the reservoir are discharged into the South Fork of the San Jacinto River.

### **7.1.2 SOUTH FORK OF THE SAN JACINTO RIVER**

This diversion site is located about a quarter of a mile upstream of the river's confluence with Strawberry Creek. A wooden diversion dam was originally constructed in 1888, but later replaced with a concrete diversion dam, taking water through a tunnel on the right bank of the stream into a 30-inch pipeline. Water rights are based on actual use and upon at least these Notices of Appropriation filed on June 6, 1885 in Book 1 of Water Claims, page 61; on August 11, 1886 in Book 1 of Water Claims, page 160; and on the Judgment entered



## Location of Surface Water Diversions

October 2007



Hemet / San Jacinto Water Management Plan

\*Source: EMWD  
\*\*Source: LHMWD

Figure 7.1



November 24, 1894 in the case of Florida Water Company v. Mary Webster, et al., No. 169, Riverside Superior Court.

### **7.1.3 NORTH FORK OF THE SAN JACINTO RIVER**

This diversion site is now located on the North Fork of the San Jacinto River near the “Falls” in Section 17, T5S, R2E. The original facilities consisted of a small rock dam and a 10-inch sheet iron pipe constructed in about 1887. Current facilities, constructed in 1969-1970, consist of a concrete diversion dam, concrete intake and control structure, and 24-inch steel pipeline. Water rights are based on actual use and upon at least these Notices of Appropriation filed on September 14, 1886 in Book 1 of Water Claims, page 173; on May 19, 1897 in Book 1 of Water Claims, page 159; and on the Judgment described above.

### **7.1.4 STRAWBERRY CREEK**

LHMWD’s diversion site on Strawberry Creek is located in Section 28, T5S, R2E, about 1,300 feet upstream of its confluence with the South Fork of the San Jacinto River. Original construction of a concrete diversion dam and flume, carrying the water over the South Fork and into the main water line, occurred in about 1905. Current facilities consist of a concrete diversion dam, intake structure, and 28-inch pipeline. Water rights are based upon actual use and at least on these Notices of Appropriation filed on January 27, 1885 in Book 1 of Water Claims, page 49; on August 11, 1886 in Book 1 of Water Claims, page 160; and on deeds recorded July 24, 1885 in Book 51, page 145; on August 25, 1886 in Book 64, page 223; on February 21, 1887 in Book 73, page 235; on April 21, 1887 in Book 79, page 264; on April 27, 1887 in Book 79, page 266; and on the Judgment described above.

## **7.2 EMWD’S DIVERSION RIGHTS**

EMWD holds a license to divert water from the San Jacinto River (see Appendix G). EMWD currently does not divert surface water for direct use, but recharges the water, when available, into the aquifer to augment groundwater supplies. Thus, the diversion is not directly part of EMWD’s water supply. However, it plays an indirect role in groundwater resources. Information on these diversions is presented here.

EMWD’s recharge of surface water from the San Jacinto River to the Canyon Management Zone takes place at EMWD’s Grant Avenue Ponds in the Valle Vista area (See Figure 7.1). An application for a permit to appropriate water from the San Jacinto River and Indian Creek, Application 924, was filed on February 14, 1918 by the Citizens Water Company. Permit 468

was subsequently approved on August 15, 1918. On November 23, 1920, the filing was assigned to the FMWC as the successor-in-interest to the Citizens Water Company. Upon its 1971 acquisition of the FMWC, EMWD became the successor-in-interest to the filing.

Based on Application 924 and Permit 468, the State Water Resources Control Board issued License No. 10667 for the Diversion and Use of Water to EMWD on June 8, 1976. This license, still held by EMWD, allows for the diversion, underground storage by spreading, and subsequent extraction and beneficial use of 5,760 AFY of San Jacinto River water to be collected from November 1 of each year to June 30 of the succeeding year at a rate of 41 cfs. Additionally, the rate of diversion may be increased to a maximum of 100 cfs provided that the total quantity in any 30-day period does not exceed 2,442 AF.

**8.1 ORIGINAL SOBOBA CLAIM**

In 1995 the Soboba Tribe filed claims against EMWD and LHMWD for an alleged infringement of their water rights, and for damages in the sum of \$70 million related to the alleged historical interference with the Tribe's rights and the unauthorized use of its water. EMWD and LHMWD denied any such interference or wrongful use of Tribal water, but agreed to negotiations to determine the water rights of the Tribe.

**8.1.1 EARLY NEGOTIATIONS**

Negotiations with the Tribe began in 1995 and in time involved the active participation of the United States.

**8.1.2 UNITED STATES SETTLEMENT PROPOSAL**

In 1998, the United States proposed a settlement whereby the Tribal Water Right would be determined to be 9,000 AFY, and the Federal government would provide a supply of 7,500AFY. Subsequently this proposal proved not to be feasible.

**8.1.3 TRIBAL CLAIM AGAINST MWD**

In 2000 the MWD was brought into the dispute when the Tribe filed suit against MWD in the U.S. District Court in Los Angeles, Case No. 00-04208 (GAF) (MANx) ("Los Angeles case"). The complaint alleged that the MWD tunnel drilled through Mt. San Jacinto in the 1930's had dried up springs on the Reservation and otherwise interfered with the Tribe's water supply.

**8.1.4 MWD'S CROSS COMPLAINT**

MWD brought EMWD into the Los Angeles action based upon an indemnity agreement signed by EMWD when the District was annexed to MWD, and in return for seepage water that continued to flow into the San Jacinto tunnel.

### **8.1.5 FINAL NEGOTIATIONS**

After lengthy negotiations among the Tribe, United States, EMWD, LHMWD and MWD, the parties reached an Agreement in 2004, subject to approval of Congress.

### **8.1.6 STATUS OF CONGRESSIONAL APPROVAL**

The Agreement has not yet been approved by Congress, and it expires if such approval is not obtained by December 31, 2007.

## **8.2 FRAMEWORK OF THE SETTLEMENT AGREEMENT**

The Agreement determines the water rights of the Tribe, and settles all claims among the parties, including those made in the Los Angeles case. The Agreement will be incorporated into a Stipulated Judgment in the Los Angeles case, and made subject to the continuing jurisdiction of the Court.

## **8.3 TRIBAL WATER RIGHT**

Under the Agreement, the Tribe has a prior and paramount right, superior to all others, to pump 9,000 acre-feet annually from the Canyon Sub-basin and the Intake portion of the Upper Pressure Sub-basin for any use on the Reservation, and on lands now owned or hereafter acquired by the Tribe contiguous to the Reservation or within the above-mentioned Sub-basins. The Tribe's right is subject to an agreement to limit its pumping according to a yearly schedule, with a maximum of 4,100 AFY, for 50 years after the effective date of the Agreement.

## **8.4 PAYMENTS TO THE TRIBE**

The United States agrees to pay \$11 million to the Tribe, and EMWD and LHMWD are obligated to pay \$17 million to the Tribe.

## **8.5 FUNDS RECEIVED BY THE LOCAL AGENCIES**

The United States agrees to contribute to EMWD, on behalf of the participants in this Water Management Plan, the sum of \$10 million for construction and operation of recharge facilities to accommodate deliveries of Imported Water.

## **8.6 IMPORTED WATER**

MWD agrees to provide an average supply of 7,500 AFY of Imported Water to recharge the Canyon Management Zone and Intake portion of the Upper Pressure Management Zone, at untreated replenishment rates, until 2035, and to negotiate in good faith for an extension of the supply for a total of 50 years after the effective date of the Agreement.

### **8.6.1 MWD STORAGE RIGHT**

The local agencies are obligated to provide groundwater recharge facilities to accommodate a flow rate of 42 cfs and to store up to 40,000 acre feet of Imported Water.

### **8.6.2 USE OF MWD SUPPLY**

The supply of Imported Water provided by MWD is to supply water for the Tribe, and to reduce overdraft. Water not used by the Tribe is available for use by the participants in the Water Management Plan, pursuant to the terms hereof.

## **8.7 WATER QUALITY REQUIREMENTS**

The Agreement provides that all water recharged shall conform to all applicable State water quality regulations and recharge in the Canyon Sub-basin and shall not exceed Federal or State primary or secondary drinking water quality standards (except for turbidity, color or coliform bacteria), nor 0.3 mg/l boron, or 0.05 mg/l lithium.

## **8.8 PROPERTY TRANSACTIONS**

EMWD shall convey to the Tribe approximately 106 acres of land at Domenigoni Parkway and Highway 79. MWD shall convey to the Tribe approximately 21.7 acres of land. LHMWD shall make available for environmental mitigation purposes approximately 12 acres in the San Jacinto River bed. The Tribe shall make available up to 98 acres of land for habitat preservation and/or environmental mitigation in connection with the recharge facilities.

## **8.9 APPROVAL OF WATER MANAGEMENT PLAN**

The Agreement provides that EMWD and LHMWD, with the cooperation of other groundwater producers, shall develop and implement a Water Management Plan for the Canyon

Management Zone and Intake portion of the Upper Pressure Management Zone that will address the current overdraft, and recognize and take into account the Tribal Water Right. This Plan is intended to meet such requirements of the Agreement, and is subject to the approval of the Soboba Tribe and the United States. No implementation or subsequent modification of this Plan shall threaten or adversely affect the rights of the Tribe under the Agreement, and the Tribe and the United States shall have the right under the continuing jurisdiction of the Court in the Los Angeles case to litigate any such issue.

**9.1 PURPOSE**

The purpose of the Watermaster is to implement the Water Management Plan (The Plan) as embodied in the Stipulated Judgment (JUDGMENT) in Eastern Municipal Water District v. Lake Hemet Municipal Water District, et al.; said implementation may be by Watermaster actions alone, actions undertaken through or in conjunction with one or more Public Agency Members or through a Joint Powers Authority (JPA) composed of some or all of its Public Agency Members.

**9.2 WATERMASTER****9.2.1 COMPOSITION**

The Watermaster Governing Board will consist of one (1) elected official representing each of the Public Agencies, namely, EMWD, LHMWD, and the Cities of Hemet and San Jacinto (collectively, Public Agencies), and one (1) representative selected by the Class A and Class B private groundwater producers (Private Water Producers).

**9.2.2 TERMS OF OFFICE**

Each member of the Watermaster shall serve until replaced by the Public Agency or Private Water Producers that made the original appointment.

**9.2.3 REMOVAL AND REPLACEMENT**

Any Watermaster member may be removed and replaced by the same procedure used in his or her appointment.

**9.2.4 VOTING**

Each member of the Watermaster shall have one (1) vote. All actions by the Watermaster shall require three (3) affirmative votes, except actions in the following matters that shall require four (4) affirmative votes:

- Any change sought in the form of governance;

- Any change in voting requirements;
- Establishing, levying, increasing or decreasing all assessment amounts;
- Determining the extent of overdraft and quantifying safe yield;
- Determining Adjusted Production Rights;
- Decisions regarding the financing of supplemental water or facilities, other than any financing provisions included in the Judgment;
- Decisions regarding ownership of facilities, other than ownership of the Phase I facilities (described in Section 3.2.2.1), which facilities shall be owned by EMWD, subject to a right of use by those parties participating in the financing thereof;
- Policies for the management of the Management Area;
- Any decision that involves a substantial commitment by the Watermaster, including any contracts for conserved water;
- Retaining the services of legal counsel or Advisor; and
- Adoption or amendment of an annual budget.

### **9.3 RULES AND REGULATIONS**

The Watermaster may make such rules and regulations as may be necessary for the implementation of the Water Management Plan and Judgment, and for its own operations and procedures, subject to Court approval.

### **9.4 MEETINGS**

The meetings of the Watermaster and standing committees will be subject to those provisions of the California Government Code known as the Brown Act (also popularly known as the Open Meeting Laws).

### **9.5 WATERMASTER ORGANIZATION**

In carrying out its development and implementation responsibilities, the Watermaster may hire full-time or part-time personnel, such as managers, engineers, attorneys, hydrologists, geologists, accountants, operators, secretaries, clerical or others; may retain outside consultants on a full-time, part-time, or as-needed basis; and may contract with other agencies to perform some or all of the development and implementation tasks.

The Watermaster shall retain the services of an independent attorney or law firm to act as the Watermaster's legal counsel.



The Watermaster shall retain the services of a qualified independent individual or engineering firm with appropriate experience in hydrology to serve as Advisor to the Watermaster. The Advisor shall assist the Watermaster in the performance of the Watermaster's responsibilities as follows:

- Provide advice to the Watermaster on all matters within the authority and jurisdiction of the Watermaster;
- Provide recommendations for action to the Watermaster on all matters within the authority and jurisdiction of the Watermaster;
- Evaluate proposals for projects and/or recommendations for action received from members of the Watermaster regarding matters within the authority and jurisdiction of the Watermaster;
- Propose and/or evaluate contracts and other agreements to be entered into by the Watermaster necessary to the performance of its responsibilities;
- To administer all contracts and agreements entered into by the Watermaster;
- Assist the Watermaster in evaluating and analyzing data, the collection of which is required under the Judgment and/or Water Management Plan;
- Coordinate the evaluation and analyses of data, proposals, projects, and recommendations by the TC with members of the Watermaster and other consultants of the Watermaster;
- Serve as the Chairman of the TC; and
- Perform such other services, and take such actions, as may be approved by the Watermaster, that are necessary to implement and execute the directions and policies of the Watermaster.

The Watermaster retains the authority to assign or contract the performance of any task or function necessary to consider or perform any matter within the authority and jurisdiction of the Watermaster to any member of the Watermaster, the TC, or any other independent engineering firm or qualified individual. Such assignment or contract shall be coordinated and administered by the Advisor.

As used herein, the term independent means that the Consultant's or Advisor's representation of the Watermaster does not create any actual or potential conflict of interest between the Consultant or Advisor and any other member entity under applicable California statute, regulation, or court decision, or under the common law. Nothing in this definition shall prohibit the Watermaster and affected entity, after appropriate vote, from waiving such conflict in writing.

## 9.6 GENERAL DUTIES

The general duties of the Watermaster in order to implement the Judgment fall into three categories, as follows:

### 9.6.1 POLICY

The Watermaster is responsible for the administration of the Judgment and for the development of policies necessary to carry out the implementation of the Water Management Plan, and for additions and modifications thereof.

### 9.6.2 WATER MANAGEMENT PLAN IMPLEMENTATION

The Watermaster shall implement a water management plan; its responsibilities in that regard include the following:

- Calculating and making determinations regarding the following: (i) safe yield of the Management Area; (ii) each member's share of safe yield; (iii) necessary reductions in each member's Base Production Right to ensure production ultimately equals safe yield; (iv) unused storage capacity which may be used for put and take operations of recycled or imported water; and (v) whether replenishment of exported water is accomplished with an appropriate amount of similar or better quality water.
- Approving projects to be undertaken by the Watermaster in collaboration with member entities as proposed by members of the Watermaster or by the Advisor.
- Providing for the recharge of the Management Area. This includes: (i) implementing a replenishment program for the Management Area; (ii) acquisition of supplemental water supplies (imported, recycled, and Soboba Tribe water); and (iii) providing for the construction and operation of all necessary facilities (including surface and sub-surface percolation and injection facilities).
- Determining the amount of, and levying, billing, and collecting the administrative and replenishment assessments.
- Budgeting and appropriating funds collected by or on behalf of the Watermaster and paying, or authorizing the payment of, costs and expenses of the Watermaster consistent with the Judgment and Water Management Plan.
- Initiating and performing such planning and study activities as may be necessary to implement the Judgment and Water Management Plan, including, but not limited to, preparation of a Watermaster's Annual Report.

- Initiating necessary conservation and drought management measures, and developing water conservation agreements with the Private Water Producers and/or Soboba Tribe for local conservation measures.
- Identifying and participating in the in-lieu replenishment projects.
- Performing all other tasks and taking all other actions as may be necessary to carry out the purpose and intent of the Judgment and the Plan.

### **9.6.3 TECHNICAL OVERSIGHT**

#### **9.6.3.1 Technical Committee Composition**

The Stipulated Judgment provides for the operation of a TC, consisting of representatives named in a written designation by EMWD, LHMWD, the Cities of Hemet and San Jacinto, and the Private Water Producers (as one entity). The representative(s) of an entity may be changed by that entity by written notice of the change to the Watermaster.

#### **9.6.3.2 Technical Committee Purpose**

The TC will provide such technical assistance as the Watermaster may request and should make recommendations to the Advisor and to the Watermaster on all matters requiring four votes for Watermaster action as outlined in the Voting section above, and on such other matters as requested by the Watermaster. The TC members shall also keep their respective City Councils and Boards of Directors of the Public Agency parties and the Private Water Producers fully informed about the implementation of the Plan.

#### **9.6.3.3 Technical Committee Chairperson**

The Advisor will act as the TC's Chairperson and fulfill all the necessary administrative functions required on behalf of the TC.

#### **9.6.3.4 Technical Committee Costs**

Costs incurred by individual TC members are the responsibility of the entity appointing that member, and Watermaster funds cannot be used to cover the costs and expenses incurred as a result of the TC activities and functions.

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## 9.7 WATERMASTER INTERACTION WITH EMWD

### 9.7.1 CONTRACT FOR SERVICES

The Watermaster will contract with EMWD to provide the following services:

- Collection and maintenance of all production, water level, water quality, and other technical data necessary under or required by the Water Management Plan and the transmittal of such data to the Watermaster, its Advisor, and the TC as directed by the Watermaster; the foregoing shall not restrict the Watermaster from entering into other agreements with other members of the Watermaster and/or private firms and individuals for the collection of data.
- Obtaining imported water from MWD or other sources as requested by the Watermaster for replenishment or direct delivery; the foregoing shall not restrict the Watermaster's ability to enter into other agreements with other members of the Watermaster and/or private firms and individuals for the purchase and delivery of imported and/or supplemental water.
- Construct and operate the Phase I facilities (existing EMWD facilities, expansions thereof, and newly constructed facilities) in a manner consistent with the Water Management Plan.
- Perform the accounting functions necessary under the Judgment, i.e., the levy, billing, and collection of all assessments provided for under the Judgment; the payment of costs and expenses of the Watermaster; and related and required accounting and related functions. All funds collected shall be held in a segregated account. All expenses and disbursements shall be separately accounted for. The foregoing shall not restrict the Watermaster from entering into other agreements with other members of the Watermaster and/or private firms and individuals to perform some or all of the accounting functions.

### 9.7.2 FINANCIAL RESPONSIBILITIES

EMWD will establish restricted accounts and hold all funds collected on behalf of the Watermaster separate from other EMWD funds. All expenditures, encumbrances, and use of funds from these accounts are subject to Watermaster authorization and will be limited to activities related to the Plan. EMWD will transmit periodic reports regarding its financial activities to the Advisor, including annual reporting summarizing the preceding fiscal year financial activities for the approval of the Advisor and the Watermaster.

**10.1 ANNUAL BUDGET**

The Advisor shall prepare an Annual Budget for review, approval, and adoption by the Watermaster. This Budget shall identify each Public Agency member's financial obligations and assessments and a description of budgeted expenditures, including:

- Replenishment water purchase;
- Operation and maintenance;
- Data collection and evaluation;
- Plan implementation administration;
- Project planning and reporting;
- Billing and assessment collection;
- Capital facilities financial obligations; and
- Preparation of an Annual Audit.

**10.2 OWNERSHIP OF FACILITIES**

Each Public Agency will continue to own its existing capital facilities for water management. However, in some situations, it may be necessary and/or convenient to form a JPA to finance and build specific capital facilities. Responsibility for the cost of any existing and future capital facilities of the Management Plan should be apportioned among the Public Agencies based on relative benefit to be derived by each Public Agency.

**10.2.1 EXISTING FACILITIES**

The existing groundwater recharge facilities in the Management Area are owned by EMWD. The Phase I project which is an upgrade of the existing recharge facilities is defined in Section 3.2.2 of this document, and EMWD will own these upgraded facilities. However, the use of the upgraded facilities and the benefits of the low-cost MWD water deliveries through this system will be shared by all agencies based on the level of construction funding contributions for the Phase I facilities and level of participation in the Soboba Settlement financing.

### 10.2.2 FUTURE PROJECTS

Any of the participating Public Agencies may propose water supply projects to the Watermaster for inclusion in the Plan. Such proposals, after evaluation by the Advisor and the TC, shall be presented to the Watermaster for approval or rejection. If the Watermaster chooses to reject the proposal, the proposing Public Agency may implement the rejected project as long as it does not significantly impact the implementation of the Plan and/or interfere with ongoing groundwater production by the Public Agencies.

### 10.2.3 USE OF MEMBER AGENCY ASSETS

It is the intent of the Member Agencies that their respective facilities shall be used in a manner that facilitates the implementation of the Plan, on terms that are equitable to all parties and consistent with each agency's obligations to its customer base.

## 10.3 ASSESSMENTS

Public agencies participating in the Plan are subject to two different assessments:

- Administrative Assessment; and
- Replenishment Assessment.

The purpose and use of these assessment funds are described in the following two sections:

### 10.3.1 ADMINISTRATIVE ASSESSMENTS

Administrative Assessments will be levied on each acre-foot pumped by each Public Agency up to the agency's Adjusted Production Right. These assessments can be used to pay costs associated with:

- Advisor's activities and his/her administrative expenses;
- Billing and assessment collection costs;
- Data collection and evaluation projects;
- Plan implementation administration, including monitoring plan, and associated salaries and overhead; and
- Project planning and reporting expenses.

Initially, the Administrative Assessment shall be Fifty Dollars (\$50.00) per AF, subject to adjustment by the Watermaster.

At the discretion of the Watermaster, any excess funds not used for the above expenditures at the end of the fiscal year can be used to purchase, deliver, and recharge the groundwater within the Management Area. These recharge waters are above and beyond groundwater replenishment waters purchased using the replenishment assessments, and should not be credited to individual Public Agencies as part of their required replenishment obligations. This shall not prohibit the development of a program or plan to provide credits for water purchased above and beyond that needed to satisfy a party's replenishment obligation.

Subject to the Watermaster's approval, funds may also be used to acquire and deliver water for direct use in lieu of pumping.

### **10.3.2 REPLENISHMENT ASSESSMENTS**

Replenishment Assessments will be levied on each acre-foot of water pumped in excess of each Public Agency's or Class B Participant's Adjusted Production Right. Replenishment Assessments will be in amounts equal to the cost of importing or acquiring supplemental water to recharge the Management Area. The component costs will include the cost of the water (including conveyance, transportation and energy costs, operations and maintenance costs, a reserve for replacement and other administrative costs). These assessments will be levied on a per AF of water in excess of each respective member's adjusted Base Production Right. The revenue received for the replacement component shall be placed in a separate reserve fund to be used to fund the replacement cost of the existing system. New and/or expanded facilities will be financed from other resources.

### **10.3.3 COLLECTIONS AND ACCOUNTS**

All the collected assessments and accounts associated with the Plan will be administered by the EMWD and are subject to the policies set by the Watermaster. All payments made to the Watermaster shall be maintained in a separate restricted account established by EMWD, and all accounts shall be subject to annual independent financial audits.

All revenues and assessments shall be used exclusively to acquire supplemental water for the recharge of the management Area and for the facilities and operational and administrative expenses associated with the Plan.

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## **10.4 PHASE I FACILITIES CONSTRUCTION AND SOBOBA SETTLEMENT FINANCING**

### **10.4.1 EMWD CONSTRUCTION COST**

The initial facilities, Phase I, shall consist of existing EMWD facilities and expansion and additions to be constructed by EMWD at a cost currently estimated at \$16.12 million less public grants totaling \$5.0 million, for a net cost of \$11.12 million. EMWD shall finance the construction of these facilities through a bond issue or cash payment or by combination thereof. Each Public Agency shall be responsible for pro-rata repayment of the bonds through EMWD or reimbursement to EMWD (to the extent EMWD pays cash for said construction) based on that Agency's Base Production Right allocation percentage, i.e., 34.2% for LHMWD, 33.7% for EMWD, 19.6% for the City of Hemet, and 12.5% for the City of San Jacinto.

### **10.4.2 PAYMENTS TO SOBOBA TRIBE**

In addition to the financing of the construction of Phase I facilities referred to in Section 10.4.1 above, the Soboba Settlement requires the payment of an additional \$17 million to the Soboba Tribe in return for the right to use low cost MWD water delivered for the benefit of the Tribe but which the Tribe does not use and other unused Tribal water. The \$17 million will be financed in the same manner as the construction of the initial Phase I facilities, i.e., by bond issue or cash payment by EMWD or a combination thereof. The \$17 million obligation will be partially offset by a \$10 million contribution by the United States toward the costs of constructing the Phase I facilities. Each Public Agency shall be responsible for pro-rata repayment of the bonds through EMWD or reimbursement to EMWD (for cash payment) based on that Agency's Base Production Right allocation percentage, as set out in Subparagraph (a) above.

#### **10.4.2.1 Water Cost**

The payment described above to the Soboba Tribe for the right to use low-cost MWD water delivered for the benefit of the Tribe but not used by the Tribe does not include the price of the water itself, which must be paid to MWD. Each Public Agency shall contractually agree with EMWD to pay its share of MWD's price for such water that it acquires for use to EMWD to enable EMWD to pay MWD.



### **10.4.3 EMWD OBLIGATION**

Agreements between EMWD and each other Public Agency setting forth that Agency's financial commitment as required under Sections 10.4.1 and 10.4.2 (*citation*) above will be required as a condition precedent to EMWD's obligation to finance the facilities construction and the payment to the Tribe so as to establish a dedicated source of revenue for bond repayment or reimbursement, as appropriate. Said agreements shall also provide that, in return for said financial commitment, the Public Agency shall be entitled to: (1) share in the capacity of the Phase I facilities (those in existence and those to be constructed) and (2) share in the rights to the MWD water not used by the Tribe and other unused Tribal water, in each case based on the Agency's Base Production Right allocation percentage, as set out in Subparagraph (a) above. Each agreement with EMWD shall provide for the Agency's method of pro-rata repayment of bonds or reimbursement to EMWD, provided, however, that no Agency will be required to do so by cash payment without its consent.

### **10.4.4 RIGHT TO TRANSFER ENTITLEMENT TO USE FACILITIES AND/OR ENTITLEMENT TO SHARE IN RIGHTS TO WATER NOT USED BY TRIBE**

Each Public Agency shall have the right to sell, lease or otherwise transfer the rights and obligations it holds to use the Phase I facilities described in Section 10.4.1 above and/or to share in the rights to the MWD water not used by the Tribe or other water not used by the Tribe described in Sections 10.4.2 and 10.4.3 above, provided that the transferee thereof shall be bound by said obligations. The foregoing notwithstanding, the Watermaster shall have the right of first refusal regarding any such transfer proposed by a Public Agency.

## **10.5 FUTURE CAPITAL FACILITIES**

Future facilities may be required to meet the growth needs of the Management Area, which may require that a JPA or other financing conduit be formed. In either case, each Public Agency's contribution toward the cost of acquiring the added facilities shall be established by the Watermaster at the time such facilities will be needed. The use of such facilities shall be at the discretion of the Watermaster and be dedicated to replenishment activities. The foregoing shall not affect the right of a Public Agency to undertake a water supply project pursuant to Section 10.4.2 above.

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The five-member Watermaster Governing Board (Watermaster) will be composed of one elected official each from the City of Hemet, City of San Jacinto, LHMWD, and EMWD (Public Agencies) and one representative elected by the private groundwater producers (Private Water Producers). Each member of the Watermaster will have one vote and will serve until replaced by the entity (Public Agencies or the Private Water Producers) making the original appointment.

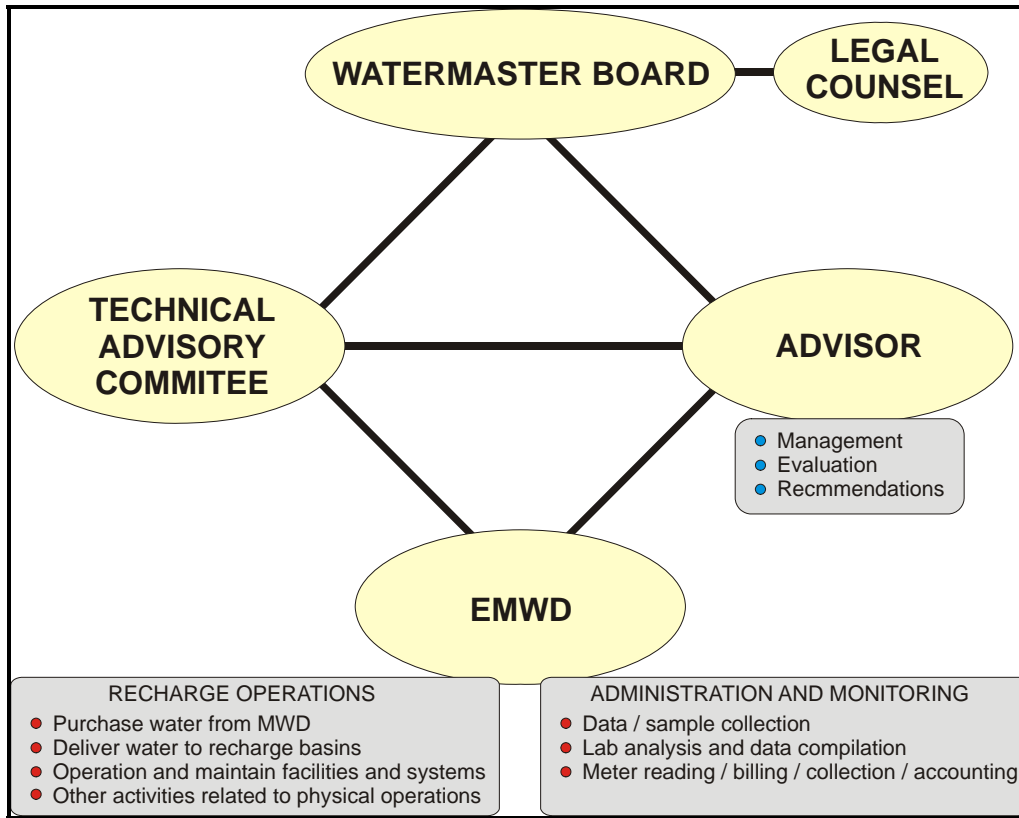
The Watermaster is responsible for administering and enforcing the provisions of the Stipulated Judgment and any subsequent instructions or orders of the Court. The implementation of the Management Plan, along with any additions or modifications as may from time to time be appropriate, and all financial matters relating to Management Plan Activities are the responsibility of the Watermaster.

This section describes how the Watermaster is expected to implement different elements of the Physical Solution outlined in the Stipulated Judgment. Information provided in this section should be used for planning purposes and is not intended to set or change any conditions imposed by the Stipulated Judgment. The timelines provided in this section should be used as guidelines and are not meant to imply any obligation to be met by the Watermaster. The Watermaster is expected to use the information provided in this section during the early years after its formation and refine, revise, or redefine the information, as it deems appropriate.

## **11.1 ORGANIZATION**

The Watermaster will receive assistance and support from legal counsel, an Advisor, a Technical Committee (TC), and Eastern Municipal Water District (EMWD). The duties and responsibilities of each entity are outlined in subsequent sections. Figure 11.1 demonstrates the relationships between the Watermaster and its supporting entities.

Within one month of the Stipulated Judgment approval, the Private Pumpers identified as Class A and B participants are expected to develop a procedure for electing their representative. The elected officials from the Agencies and the Private Pumpers serving as the Watermaster should be identified within the first two months of Stipulated Judgment approval, and the Watermaster should conduct its first meeting at a mutually acceptable location within one month after that.



**Figure 11.1 Relationships between Entities**

Within three months of the Watermaster’s first meeting, the Watermaster will retain the services of an independent attorney or legal firm (Legal Counsel) to provide assistance with legal matters and to provide ongoing advice and recommendations in legal areas appropriate to the Watermaster carrying out its duties

Also within three months of the Watermaster’s first meeting, the Watermaster will contract with either an independent engineering firm or a qualified individual (Advisor) experienced in hydrology to evaluate and analyze the data collected by EMWD and any conclusions based on that data, and to make recommendations to the Watermaster. The Advisor will provide general coordination between the Watermaster, the Technical Committee, and EMWD with respect to their respective functions, and will also perform such executive functions as the Watermaster may direct. The Watermaster may refer any matter it chooses to any person it may select for assistance in carrying out its duties under the Judgment.

The TC will consist of managerial and technical representatives of the Agencies and Private Water Producers. The Advisor will serve as the TC chairman. The TC will provide technical assistance at the request of the Watermaster. The TC will make recommendations to the Advisor and to the Watermaster on all matters requiring four votes for Watermaster action, which are:

- Any change in the form of governance;
- Any change in voting requirements;
- Retaining the services of legal counsel and Advisor;
- Establishing, levying, increasing or decreasing all assessment amounts;
- Adopting or amending the annual budget;
- Determining the extent of overdraft and quantifying safe yield;
- Determining Adjusted Production Rights;
- Decisions regarding the financing of Supplemental Water or facilities;
- Decisions regarding ownership of facilities, other than ownership of the Phase I facilities, which will be owned by EMWD, subject to a right of use by those parties participating in the Phase I financing;
- Management policies for the Management Area; and
- Any decision that involves a substantial commitment by the Watermaster, including any contracts for conserved water.

In addition, the TC will receive all Monitoring Program and associated data from EMWD for review and evaluation. The TC members are anticipated to keep the City Councils, Agency Boards of Directors, and participating Private Pumpers informed about the Watermaster activities and the Water Management Plan's status.

Within six months of Stipulated Judgment approval, the Watermaster will prepare and adopt Rules and Regulations for its own operation as well as for the operation of the Water Management Plan and Judgment. A dispute resolution process will be included in the Rules and Regulations.

## 11.2 MONITORING PROGRAM IMPLEMENTATION

The Monitoring Program was initiated with the execution of the September 2003 *Agreement to Develop a Groundwater Monitoring Program in the Hemet/San Jacinto Management Area* between the Cities of Hemet and San Jacinto, EMWD, and LHMWD. Its purpose was to measure and monitor groundwater levels to assist in the accurate evaluation of conditions of overdraft and the evaluation of the operational safe yield in the Management Area. In addition to water levels, the program included water quality and production monitoring. The agreement for 2005 added surface water monitoring of San Jacinto River flows in conjunction with the U.S. Geological Survey. Funded equitably among the agencies, the Monitoring Program has been managed by EMWD. The monitoring locations currently are sampled annually for quality and are measured semi-annual for water levels. The locations are presented in Figure 11.2. These

locations may be updated based on the recommendations in the annual monitoring program as discussed later in this Section.

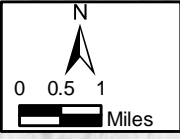
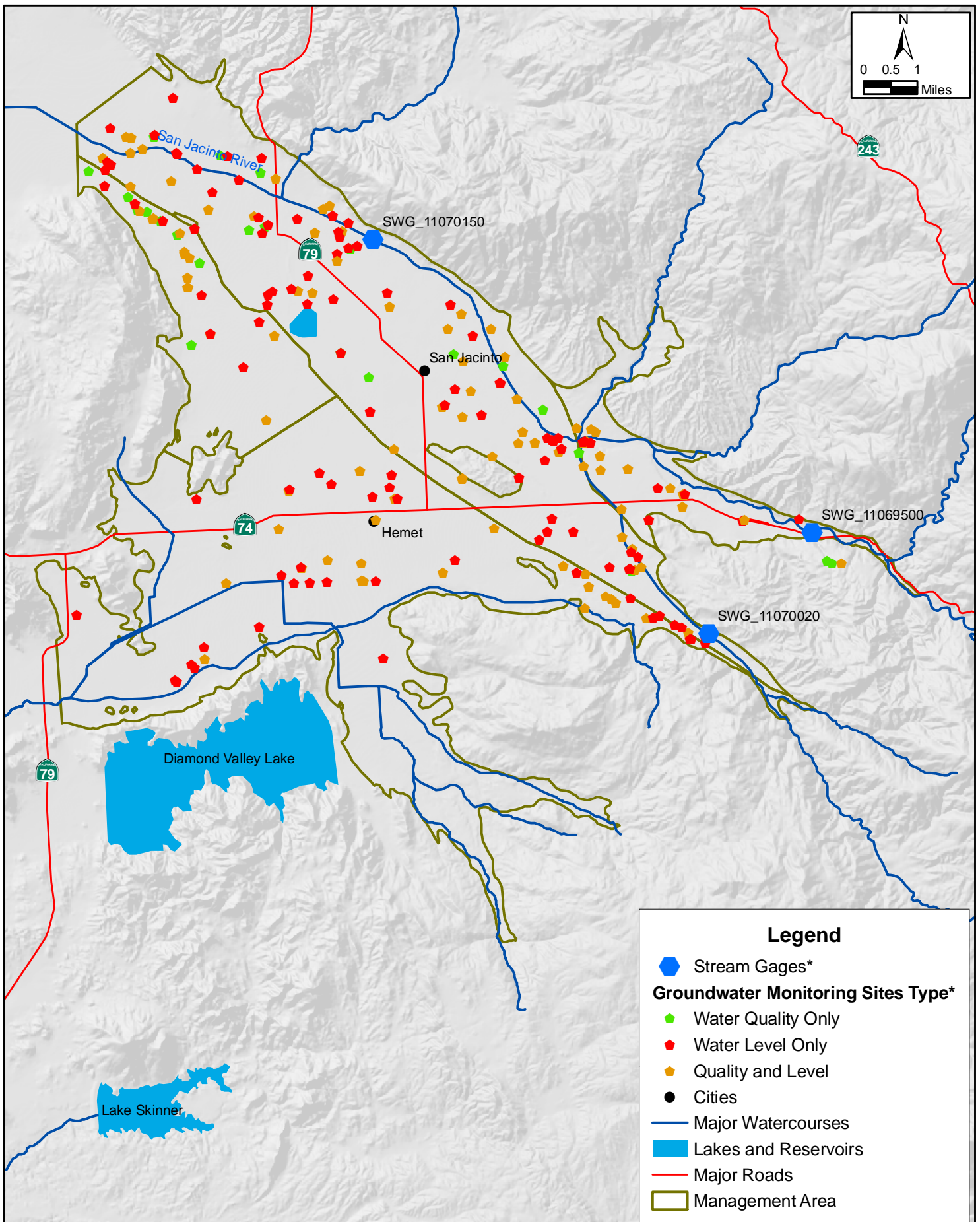
To protect groundwater supplies, an Inactive Well Capping/Sealing Program is included in the Monitoring Programs. Under this program, an inactive well or open casing will be capped/sealed at no charge to the well owner. These wells may still be used for water level and, in some cases, water quality monitoring. Priority is given to those wells that are potentially dangerous open holes (16-18" casings) or those located in areas where flooding resulting from precipitation might carry manure, fertilizers, or other contaminants into the well.

Any Agency or well owner can provide the Watermaster or Monitoring Program personnel with the location of an unused well or open casing for consideration for the Inactive Well Capping/Sealing Program.

Under a contract with the Watermaster, EMWD will lead the Monitoring Program effort. Prior to January 1<sup>st</sup> of any given year, EMWD staff will present a proposed Monitoring Program to the Advisor. The program is anticipated to include:

1. Estimated number of wells to be monitored for groundwater levels;
2. Estimated number of wells to be sampled for water quality;
3. Number of meters to be read monthly or installed or repaired;
4. Estimated number of inactive wells to be capped;
5. Any changes or variation from the previous year's activities; and
6. Estimated budget to include cost for the field activities and development of the annual report.

The Advisor will review, revise, approve or reject the proposed monitoring program and initiate the annual monitoring program before the end of January of each year. The annual Monitoring Program budget must be approved by the Watermaster before the end of February of each year. The Monitoring Program is run on a calendar year basis and each annual report and associated budget will reflect such a calendar year time period.



**Legend**

- ◆ Stream Gages\*
- Groundwater Monitoring Sites Type\***
- ◆ Water Quality Only
- ◆ Water Level Only
- ◆ Quality and Level
- Cities
- Major Watercourses
- ▭ Lakes and Reservoirs
- Major Roads
- ▭ Management Area



## Stream Gages and Groundwater Monitoring Sites

Hemet / San Jacinto Water Management Plan

October 2007

\*Source: EMWD

Figure 11.2

Data to be considered for collection and inclusion in the Hemet/San Jacinto Water Management Area Annual Reports to assess the status of the basins and to monitor the responses for future management activities may include, but is not limited to:

- Groundwater level monitoring results;
- Groundwater quality monitoring results;
- Groundwater production;
- Surface water flow monitoring results;
- Surface water quality;
- Surface water diversions;
- Imported water;
- Hydrologic data (rainfall and evaporation);
- Recycled water production;
- Recycled water sales/use;
- Conveyance water;
- Water conservation measures;
- Population growth and development; and
- Land use and crop mix.

EMWD will submit the Annual Hemet/San Jacinto Water Management Area Report resulting from the Monitoring Program to the Advisor for review within four months after completion of each calendar year's monitoring program. The Advisor will then provide the Watermaster with recommendations on how best to operate the Management Area as well as provide a proposed determination of Administrative and Replenishment Assessments for each agency based on previous year's activities. Within the first six years, the Watermaster, with input from its Advisor and the TC, will make a determination of the safe yield of the Management Area. Thereafter, the safe yield shall be reviewed and modified, if necessary, upon the recommendation of the TC or as the Watermaster may determine.

The Watermaster will use information provided in the Annual Hemet/San Jacinto Water Management Area Report and Advisor's recommendations to decide on how to meet the goals for the upcoming year(s).

### **11.3 MANAGEMENT PLANNING TOOLS**

In the future, the Watermaster may want to develop or use databases and other numerical models as planning tools. EMWD maintains a RWRD. Data from the Groundwater and Surface



Water Monitoring Programs, as well as other water and groundwater-related data, are stored in this database. These data form the basis of the Hemet/San Jacinto Water Management Area Annual Reports and can be made available to the Advisor.

EMWD's groundwater flow/transport numerical model can also be made available to assist the Advisor and the Watermaster in evaluating different water resources management alternatives for future projects, for planning purposes, for analysis as in the Regional Water Quality Control Board permitting process, and for determining safe yield. The model is capable of calculating the water budget, exhibiting trends, evaluating regulatory constraints, and can be used as a planning tool. It is recommended that the model be updated every three to five years at the discretion of the Watermaster.

To use EMWD's RWRD and groundwater flow/transport numerical model, the Watermaster is anticipated to enter into a contract with EMWD to cover the Watermaster related cost of software upgrades, necessary hardware, and resources required for maintenance of these tools.

#### **11.4 FINANCIAL ADMINISTRATION**

The Watermaster is responsible for the levying, billing, and collection of all assessments provided for under the Judgment, for the payment of all costs and expenses of the Watermaster, and for the performance of accounting and related functions required in connection with performing the Watermaster's duties. The Agencies' groundwater production will be subject to Administrative and Replenishment Assessments. Class B participants are only subject to Replenishment Assessments.

The Watermaster will determine the amount of the Administrative Assessments. For the first year of implementation these assessments are set at \$50 per acre-foot. The amount of the Replenishment Assessments will equal the cost of providing a like quantity of supplemental water to recharge the Management Area. The cost of providing a like quantity of water will include the costs of water, operations and maintenance costs of the replenishment system; capital recovery, and other administrative costs as defined in the Stipulated Judgment. An Administrative Assessment will be levied on each acre foot pumped by an Agency up to its adjusted base production right excluding any adjustments as outlined in the Stipulated Judgment.

In order to obtain operating funds for the Watermaster, the Agencies will advance payment of their share of the Administrative Assessments. These payments are anticipated to be paid within the first quarter of each year. Replenishment Assessments due will be determined on the basis of production during the prior calendar year, and are expected to be paid within the first

quarter of the year following the prior calendar year's production. Replenishment Assessments will be collected prior to actual recharge by the Watermaster.

In addition, the Agencies will be required to make payments as required under other obligations with EMWD, such as, Phase 1 Facilities and Construction Cost and Use, and delivery and use of recycled water agreements.

Starting with the second year, the Watermaster's invoices should reflect the balance of the Administrative and Replenishment Assessment payments from the previous year as a credit or debit on the invoices.

Within three months of Stipulated Judgment approval, the Watermaster is anticipated to contract with EMWD to perform the Watermaster's accounting functions including billing, collection, and accounting. EMWD will maintain a restricted account for such activities as the operation of the Monitoring Programs and purchase of replenishment water. In addition, EMWD will invoice the Watermaster for its share of imported water costs. EMWD's restricted accounts will be included in the Watermaster's year-end audits to be conducted in accordance with accepted accounting principles.

Funding for the monitoring program, development and use of the management planning tools, and the financial management of the accounts are anticipated to come from Administrative Assessments.

All funds collected by EMWD must be held in a segregated account and all expenses and disbursements must be separately accounted for.

## **11.5 STIPULATED JUDGMENT ADMINISTRATION**

The Watermaster shall prepare, file with the Court, and distribute to relevant parties a Watermaster Annual Report including a summary of all activities during the preceding calendar year, an audited statement of all accounts and financial activities of the Watermaster, and a summary of extractions and replenishments as well as all other pertinent information. The Watermaster will provide the Court updated estimates of the groundwater budget, safe yield, and overdraft as required.

During the development of the Water Management Plan, a number of Agreements and MOUs were initiated among and between the Agencies. Within three months of the Stipulated Judgment approval, the Watermaster will review and re-issue the Agreements and MOUs in the name of the Watermaster if necessary and appropriate. The current MOUs are presented in Appendix H.

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Upon Settlement Agreement implementation, the Watermaster will recognize the Tribal Water Rights, as set forth in the Stipulated Judgment and the applicable provisions of the Soboba Tribe Settlement Agreement.

## 11.6 FACILITIES AND PROJECTS

Each Agency shall continue to own its existing capital facilities for water management. However, capital facilities may be jointly constructed and owned by the Management Plan. Joint financing of such facilities may be funded by regional capital fees, loans and grants, municipal bonds, and contributions for storage by The Metropolitan Water District of Southern California or other third parties. Responsibility for the costs of any existing and future capital facility of the Management Plan should be apportioned among the Agencies based on the relative benefit to be derived by each Agency. Any Agency may propose a project to be included in the Management Plan to increase Management Area water supply. Such proposals, after evaluation by the Watermaster, shall be included or rejected. If the Watermaster chooses to reject a proposal, the proposing Agency may implement the rejected project as long as it does not significantly impact the implementation of the Management Plan and/or interfere with the ongoing production by the Agencies. The maintenance and upgrading of facilities currently owned by any Agency, and used to further the goals of the Management Plan, will be considered by the Watermaster for funding.

The Agencies have been evaluating and developing a number of programs to mitigate overdraft. The stakeholders agreed that the primary project, the core of the Physical Solution, is the IRRP. This project involves the artificial recharge of imported water into the basin along the San Jacinto River. An agreement that documents the ownership, financing, and operation of the facilities for Phase I of the IRRP is anticipated to be executed after completion of the California Environmental Quality Act (CEQA) process.

The Recycled Water In-Lieu Program identifies large agricultural pumpers in the Management Area that can use recycled water as their source of supply instead of producing groundwater. Providing recycled water to these producers will reduce the stress on groundwater resources and will reduce the community's long-term need for imported replenishment water.

The Watermaster, with assistance from the Advisor, TC, and EMWD, will develop recycled water strategies. The operational feasibility of these strategies will be assessed and determined by the Advisor and EMWD. The Advisor will recommend economically feasible projects to the Watermaster for implementation. It is anticipated that EMWD, as the sole recycled water provider in the Management Area will, own, operate and administer facilities required for these projects.

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## 11.7 SPECIAL PROJECTS AND STUDIES

It will be necessary to conduct technical or other investigations such as hydrogeologic investigations, GIS analyses, field investigations, numerical modeling, or feasibility studies. The Watermaster may act individually or participate with other entities to conduct such investigations or to collect data necessary to accomplish the main goals of the Management Plan. In addition, any Agency may propose investigations or studies that are appropriate to the goals of the Management Plan. Such proposals, after review by the Advisor and evaluation by the Watermaster, shall either be accepted or rejected. If the Watermaster rejects a study, the proposing Agency may still implement the investigation or study so long as it does not significantly impact the implementation of the Management Plan or interfere with the ongoing activities by the Agencies.

## 11.8 CONSERVATION PROGRAMS

Each agency maintains its own individual Conservation Program. Additional conservation measures can be designed and implemented using Best Management Practices by the agencies and/or implemented by the agricultural producers and dairy water users. The Watermaster has the discretion to expand its involvement in local conservation programs and if appropriate, lead any collaborative conservation program amongst the agencies.

## 11.9 WELL CONSTRUCTION, ABANDONMENT, AND DESTRUCTION

Riverside County regulates the construction, reconstruction, abandonment, and destruction of community water supply wells, individual domestic wells, and agricultural wells. Through the offices of the Department of Environmental Health, the County is responsible for issuing permits for well drilling or abandonment.

Section 10 of the Ordinance No. 682.3 states, *“Standards for the construction, reconstruction, abandonment, or destruction of wells shall be the standards recommended in the Bulletins of the California Department of Water Resources as follows: Bulletin NO 74-81 Chapter II Water Wells, and Bulletin NO 74-90 (Supplement to Bulletin 74-81) and as these Bulletins may be amended by the State of California from time to time.”*

To oversee management of the groundwater resources in the area, the Watermaster is expected to coordinate with the County of Riverside, and track new developments in the area. This will help the Watermaster to identify critical groundwater monitoring wells that are located in areas to be developed. A plan for proper abandonment and/or destruction, and replacement of the well as a monitoring well, if appropriate, will then be set in motion.

If the well is critical in providing data for the Management Area Monitoring Program, the Watermaster will work with the appropriate jurisdictional agency and the well owner to save the well for monitoring or to replace it with a new monitoring well in an area adjacent to a retention basin, park, green belt, or other community area in the vicinity of the original well location.

The Advisor, with the concurrence of the Watermaster, will arrange meetings with the Agencies to discuss and review future construction of any facilities that may be of value or interest to the Management Plan area. The Watermaster will work with the project proponent with regard to enhancing and or modifying the facilities to maximize the benefit to the Management Plan effort.

### **11.10 PUBLIC PARTICIPATION**

The process by which interested and affected individuals, organizations, agencies and government entities are consulted and included in decision making, has been the driving force in the development of the Water Management Plan. Stakeholders in the Hemet/San Jacinto basins have recognized for several years that their groundwater basins are in a state of overdraft. The Soboba Water rights Proposal presented in February of 1995 provided the impetus for the examination of the overdraft problem. The topic of discussion of a public meeting held on December 13, 2000 was the state of the Hemet/San Jacinto groundwater basins.

EMWD sponsored community discussions in early 2001 entitled: "Groundwater Management: Avoiding Political Pitfalls", "State of the Hemet/San Jacinto Basins", and "Cooperate to Self-govern". The Principles for Water Management were drafted as the basis for a starting point to develop solutions, both for the Soboba proposal and for the overdrafted basin. The Principles were circulated to the general public in February 2001.

In June, 2001, EMWD, LHMWD, City of Hemet and City of San Jacinto signed a conjunctive management Memorandum of Understanding (MOU) with DWR. Two committees were organized to work cooperatively to address the issues. The policy committee, comprised of elected officials and staff members of the four agencies, plus local private pumpers, and a technical advisory committee with representatives from the four agencies, the private pumpers and a neutral consultant provide by DWR. The policy committee meetings are open to the public and are frequently attended by agricultural pumpers, local business owners, local residents, and tribal members, attorneys and technical consultants of the Soboba Band of Luiseño Indians.

Water Outreach Public Information Programs hosted by EMWD have been held at a local restaurant in Hemet in October 2001 and August 2002 to discuss the progress of the Groundwater and Technical Committees in the development of a Water Management Plan.

The Watermaster will continue this process of public involvement and community outreach during Management Plan implementation. Meetings of the Watermaster will be public meetings and will, therefore, be subject to the Brown Act.

### **11.11 GROUNDWATER MANAGEMENT PLAN COMPONENTS AND CONSISTENCY WITH THE CALIFORNIA WATER CODE**

Groundwater management is the planned and coordinated local effort of sustaining the groundwater basin to meet future water supply needs. With the passage of AB 3030 in 1992, local water agencies were provided a systematic way of formulating groundwater management plans (California Water Code, Sections 10750 et seq.). AB 3030 also encourages coordination between local entities through joint-power authorities or MOUs. SB 1938, passed in 2002, further emphasized the need for groundwater management in California. SB 1938 requires AB 3030 groundwater management plans to contain specific plan components to receive state funding for water projects.

The Water Management Plan includes the seven mandatory components that are required to be eligible for the award of certain funds administered by DWR for the construction of groundwater projects or groundwater quality projects. The Plan also addresses the 12 specific technical issues identified in the California Water Code along with the seven recommended components identified in DWR Bulletin 118 (DWR 2003). Appendix I lists the required and recommended components and identifies the specific location within this Plan where the information can be found.

### **11.12 SCHEDULE**

The Plan Implementation Schedule is shown in Table 11.1.

Phase I of the Integrated Recharge and Recovery Program is scheduled to be constructed in two phases, Phase A and Phase B. The schedule for activities related to these phases is shown in Table 11.2.

**Table 11.1 Plan Implementation Schedule**

<b>Task No.</b>	<b>Description</b>	<b>Time Required</b>	<b>Estimated Completion</b>
1	Retain Services of Legal Counsel	3 Mos.	Within 6 mos. of Stipulated Judgment Approval (S.J.A.)
2	Retain Services of Advisor	3 Mos.	
3	Review and Re-issue Existing Agreements and MOUs in the Name of the Watermaster if Appropriate and/or Necessary	3 Mos.	
4.	Watermaster Enter into Contract(s) with EMWD to: a) Manage/administer the Groundwater and Surface Water Monitoring Programs and prepare the <i>Hemet/San Jacinto Water Management Plan Annual Report</i> containing Monitoring Program results and related information; b) Compile all data and maintain the Regional Water Resources Database; c) Operate, maintain, and update the Groundwater Model. d) Provide Accounting Functions. e) Manage Recharge Facilities and any Other Field Operations.	3 Mos.	
6	First Watermaster Annual Report to the Court	3 Mos.	Within 14 mos. of S.J.A.
7	Develop and Adopt Rules and Regulations	3 Mos.	Within 6 mos. of S.J.A.
8	Administrative Assessment Payment	1 <sup>st</sup> Quarter of Each Year	On-going
9	Replenishment Assessment Payment	1 <sup>st</sup> Quarter of Each Year Following the Actual Production	On-going

Table 11.2 Phase I Project Construction

Task No.	Description	Time Required	Estimated Completion
PHASE A			
1	Environmental Process (EIR)	---	Completed
2	Land Acquisition		Within 6 mos. of Settlement Agreement Approval (S.A.A.)
3	Grant Approval, Advertising, Award	7 Mos.	
4	Extraction Well Drilling	17 Mos.	
5	Extraction Well Pump & Chlorination Equipping	12 Mos.	
6	Pump Station Modifications	12 Mos.	
PHASE B			
1	NEPA/Permitting Process	---	Before S.A.A.
2	Extraction Well Drilling	6 Mos.	Within 12 mos. of S.A.A.
3	Extraction Well Pump & Chlorination Equipping	19 Mos.	
4	Recharge Basins	5 Mos.	
5	Pipelines	5 Mos.	
6	Monitoring Wells	6 Mos.	



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**SOBOBA BAND OF LUISEÑO INDIANS**  
**SETTLEMENT AGREEMENT**

THIS SETTLEMENT AGREEMENT is entered into by the Soboba Band of Luiseño Indians on behalf of itself and its members (collectively, the “Soboba Tribe”); the United States of America solely in its capacity as trustee for the Soboba Tribe (the “United States”); the Eastern Municipal Water District (“EMWD”); the Lake Hemet Municipal Water District (“LHMWD”); and The Metropolitan Water District of Southern California (“MWD”).

**ARTICLE 1- RECITALS**

1.1 The Soboba Tribe has made claims against EMWD and LHMWD (collectively, the “Local Districts”) for alleged infringement of its water rights in the San Jacinto River (“River”) and the Canyon Sub-basin and the Intake portion of the Upper Pressure Sub-basin associated therewith (collectively “Basin”) in Riverside County, California, and for damages related to historical interference with the Soboba Tribe’s rights and the unauthorized use of its water. Specifically, the Soboba Tribe alleges that the Local Districts, through their longstanding diversion of waters from the River and pumping of Groundwater from the Basin, have interfered with the Soboba Tribe’s water resources and its rights to the beneficial use and enjoyment of the Reservation.

1.2 The Soboba Tribe also has filed a lawsuit against MWD styled *Soboba Band of Luiseño Indians v. Metropolitan Water District of Southern California*, United States District Court Case No. 00-04208 GAF (MANx) (the “Action”). The Action alleges that MWD, by the construction and operation of the San Jacinto Tunnel (the “Tunnel”), has interfered with the Soboba Tribe’s water resources and its rights to the beneficial use and enjoyment of the Reservation.

1.3 The Parties have agreed to settle the Soboba Tribe’s claims on the terms set forth in this Settlement Agreement.

1.4 MWD also contends that it has legal indemnification claims and other rights against EMWD for the Action arising out of MWD Board Resolution 3940 (EMWD's Terms of Annexation into MWD). In 1951, EMWD was created and annexed into MWD for the purposes of resolving claims that MWD's construction and operation of the Tunnel interfered with local water rights in the Basin and to obtain a supplemental supply of water for the area. The Terms of Annexation required EMWD to resolve potentially conflicting rights to the Tunnel seepage water and that MWD annually credit EMWD for the entire amount of Tunnel seepage, which MWD has done every year since 1951. In exchange for the benefits of being annexed into the MWD service area and the return of the Tunnel seepage water to EMWD, EMWD was required to defend and indemnify Metropolitan from certain claims seeking recovery for loss or injury as a consequence of the Tunnel seepage, specifically including claims brought by the Tribe. In response to the Tribe's Action, MWD tendered the defense and indemnity of the Tribe's claims to EMWD, which EMWD declined on the grounds that the Action allegedly exceeded the scope of its obligations under the Terms of Annexation. MWD subsequently filed a third party action against EMWD seeking to enforce the defense and indemnity provisions contained in the Terms of Annexation. EMWD and MWD dispute each other's contentions.

1.5 EMWD and MWD have agreed as part of this settlement to resolve their dispute over the scope of EMWD's defense and indemnity obligations to MWD reflected in the EMWD's Terms of Annexation.

NOW, THEREFORE, in consideration of the promises and agreements hereinafter set forth, the Parties agree as follows:

## **ARTICLE 2 - DEFINITIONS**

This Settlement Agreement employs abbreviated terms that have the meanings below. To the extent that the definitions below conflict with those terms defined in other sections of the Settlement Agreement, the definitions in Article 2 shall prevail.

2.1 "Act" unless otherwise indicated, shall mean the Soboba Settlement Act approving this Settlement Agreement, attached as Exhibit A.



2.2 "Action" means the Soboba Tribe's lawsuit against MWD styled Soboba Band of Luiseño Indians v. Metropolitan Water District of Southern California, United States District Court Case No. 00-04208 GAF (MANx) and includes MWD's third party claim against EMWD.

2.3 "AFA" means acre-foot of water per annum.

2.4 "Basin" means collectively the Canyon Sub-basin and the Intake portion of the Upper Pressure Sub-basin as depicted on Exhibit B (map) and described in Exhibit C.

2.5 "Best Efforts" means that the Districts will take all commercially reasonable actions to fulfill the referenced contractual obligation.

2.6 "Canyon Sub-basin" means the groundwater basin as depicted on Exhibit B (map) and described in Exhibit C.

2.7 "Court" shall mean the Federal District Court for the Central District of California, Central Division, which has exercised jurisdiction over the Action.

2.8 "Decree Court" means the court with jurisdiction over the judgment and decree entered in accordance with this Settlement Agreement.

2.9 "Districts" means EMWD, LHMWD, and MWD.

2.10 "Effective Date" means the date on which the Secretary causes to be published in the Federal Register a statement of findings that the conditions in Section 3.1 have been fulfilled.

2.11 "EMWD" means the Eastern Municipal Water District.

2.12 "Groundwater" for the purposes of this Settlement Agreement means all water beneath the surface of the earth.

2.13 "Imported Water" means water sold by MWD to EMWD pursuant to Section 4.4 and is not intended to have the same meaning as the term "Imported Water" is used in MWD's Administrative Code.

2.14 "Intake Sub-basin" means the portion of the Upper Pressure groundwater Sub-basin as depicted on Exhibit B (map) and described in Exhibit C.

2.15 "LHMWD" means the Lake Hemet Municipal Water District.

2.16 "Local Districts" means EMWD and LHMWD.

2.17 "MWD" means The Metropolitan Water District of Southern California.

2.18 "Party" is the singular form of "Parties," which means the entities represented by the signatories to this Settlement Agreement.

2.19 "Recharge Facilities" means those facilities to be constructed by the Local Districts pursuant to Section 4.4.G of this Settlement Agreement for the purpose of recharging the Imported Water into the Basin.

2.20 "Reservation" means the Soboba Indian Reservation as depicted on Exhibit D (map), comprising approximately 5,935 acres, as established by Executive Order on June 19, 1883; thereafter expanded by Executive Orders on January 29, 1887, and December 29, 1891, the purchase of 709.65 acres known as "Tract 8" in 1911, the issuance of a trust patent for 68.9 acres in 1913, and the transfer of 880 acres pursuant to the Southern California Indian Land Transfer Act, Pub. L. No. 100-581, 102 Stat. 2946 (1988); and, thereafter modified by Executive Orders of March 22, 1886, and January 29, 1887, and the issuance of a fee patent for 32.84 acres in 1900. It does not include the 950 acres northwest of and contiguous to the Reservation known as the "Jones Ranch," purchased by the Soboba Tribe in fee on July 21, 2001, and placed into trust on January 13, 2003, nor the 278.49 acres southeast of and contiguous to the Reservation known as the "Greater Horseshoe," purchased by the Soboba Tribe in fee in five separate transactions in June and December 2001 and December 2004; nor the 478 acres north of and contiguous to the Reservation known as "Kwiili," purchased by the Soboba Tribe in fee on April 4, 2004.

2.21 "River" means the surface flow of the San Jacinto River and its tributaries from its origins in the San Jacinto Mountains into and across the Basin as shown on Exhibit B (map).

2.22 "Secretary" means the Secretary of the Interior or her designee.

2.23 "Settlement Agreement" means this document including all exhibits, which are incorporated by reference.

2.24 "Soboba Tribe" means the Soboba Band of Luiseño Indians, a body politic and federally recognized Indian tribe, and its individual members.

2.25 "Surface Water" means all surface water flows of the River.

2.26 "Terms of Annexation" means Metropolitan Resolution No. 3940 which sets forth the terms of EMWD's annexation to MWD.

2.27 "Tribal Water Right" means the Soboba Tribe's rights to water set forth in Section 4.1.

2.28 "Tunnel" means that portion of the Colorado River Aqueduct known as the San Jacinto Tunnel.

2.29 "United States," unless otherwise indicated, means the United States of America solely in its capacity as trustee on behalf of the Soboba Tribe or its members.

2.30 "Untreated Replenishment Water" means untreated water sold pursuant to the Replenishment Service program as defined by MWD's Administrative Code at sections 4104, 4114 and 4514.

2.31 "Upper Pressure Sub-basin" means the groundwater basin as depicted on Exhibit B (map).

2.32 "WMP" means the Water Management Plan that will be developed by EMWD, LHMWD, the City of Hemet, the City of San Jacinto and other Basin users, pursuant to Section 4.8.A of this Settlement Agreement, to manage the Canyon Sub-basin, the Upper Pressure Sub-basin downstream to Bridge Street, and the Hemet Basins. The principles of the Water Management Plan are attached as Exhibit E. The area covered by the Water Management Plan is depicted on Exhibit F (map) and described in Exhibit G.

### **ARTICLE 3 – CONDITIONS PRECEDENT AND ENFORCEMENT**

3.1 This Settlement Agreement shall become enforceable, and the releases and waivers of Article 5 effective, as of the date the Secretary causes to be published in the Federal Register a statement of findings that the following conditions have been fulfilled:

A. the Act has been enacted;

B. to the extent that the Settlement Agreement conflicts with the Act, the Settlement Agreement has been revised to conform with the Act;

C. the Settlement Agreement, as so revised, and the Waivers and Releases have been executed by the Parties and the Secretary;

D. warranty deeds for the property to be conveyed in fee to the Soboba Tribe pursuant to Section 4.6 have been placed in escrow with instructions that they shall be delivered to the Soboba Tribe by close of business on the first business day following the date that all of the conditions in this paragraph have been fulfilled;

E. the Soboba Tribe and the United States have approved the WMP;

F. the Judgment and Decree attached to the Settlement Agreement as Exhibit H have been approved by the United States District Court, Eastern Division of the Central District of California, and that judgment and decree have become final and nonappealable; and

G. the Congress of the United States has appropriated the funds and the funds have been deposited in the appropriate accounts pursuant to Sections 4.5 and 4.7.

3.2 Other than to take all necessary steps to cause the events described in this Article to occur, no Party shall be required to perform any of the obligations, or be entitled to any of the benefits, under this Settlement Agreement before all conditions precedent have been fulfilled. After the fulfillment of all conditions precedent, the Parties shall be bound by all provisions of this Settlement Agreement.

3.3 If all of the conditions listed in Section 3.1 have not been fulfilled by December 31, 2007, this Settlement Agreement shall be null and void, and any consideration, together with any income earned thereon, shall be returned to the depositing entity.

#### **ARTICLE 4 - TRIBAL WATER RIGHTS**

4.1 Water Rights. The Parties ratify, confirm, declare to be valid and agree not to object to or dispute or challenge in any judicial or administrative proceedings the rights of the Soboba Tribe and the United States solely in its capacity as trustee for the Soboba Tribe, to the water rights set forth in this Section. In so doing, the Parties acknowledge that these rights are

the result of bargained for and exchanged concessions, as a result of which the Local Districts have agreed to supply water to the Soboba Tribe if it is unable, except for mechanical failure of its wells, pumps or water facilities, to produce the water to which it is entitled under this Article. Therefore, the Soboba Tribe shall have the following water rights which shall be held in trust by the United States for the benefit of the Soboba Tribe:

A. The prior and paramount right, superior to all others, to pump 9,000 AFA from the Basin for any use on the Reservation and lands now owned or hereafter acquired by the Soboba Tribe contiguous to the Reservation or within the Basin.

B. The Soboba Tribe's right to pump a total of 9,000 AFA from the Basin is without regard to whether the water was naturally or artificially recharged.

C. In the event the Soboba Tribe is unable, except for mechanical failure of its wells, pumps or water facilities, to produce from its existing wells or equivalent replacements up to 3,000 AFA production from the Canyon Sub-basin and the remainder of its Tribal Water Right from the Intake Sub-basin, subject to Section 4.3.A, the Local Districts shall deliver any shortage to the Soboba Tribe. Any shortage shall be delivered at such locations as the Soboba Tribe and the Local Districts may agree, or if there is no agreement, at the wellheads where the shortage occurred. Such water may be supplied from Local District wells in either the Canyon or Intake Sub-basins, or from other sources. For any water delivered pursuant to this paragraph, the Soboba Tribe shall pay an acre-foot charge equal to its then current cost of production, and any avoided cost of treatment, from the wells where the shortage occurred, assuming pumping lifts equal to the Soboba Tribe's averages in the respective Sub-basins over the preceding ten years.

4.2 Water Quality. Recharged water placed in the Canyon Sub-basin by Local Districts and/or the WMP and any replacement water delivered to the Soboba Tribe pursuant to Section 4.3.C shall conform to all applicable State water quality regulations and, without prior written approval from the Soboba Tribe, shall neither exceed (1) any Federal or State of California primary or secondary drinking water standards (except with respect to recharged water, turbidity, color, or coliform bacteria) nor (2) 0.3 milligrams per liter (mg/l) boron or 0.05

mg/l lithium. Recharged water placed in the Intake Sub-basin by EMWD, LHMWD, and/or the WMP shall conform to all applicable State water quality regulations. Nothing in this paragraph shall affect the water quality obligations assumed by Metropolitan for Imported Water set forth in Section 4.4.

4.3 Soboba Tribe's Water Use. Beginning on the Effective Date, the Soboba Tribe's right to pump groundwater in the exercise of its Tribal Water Right shall be subject to the following provisions:

A. The Soboba Tribe agrees to limit its exercise of the Tribal Water Right to 4,100 AFA for a period of fifty (50) years commencing with the Effective Date, according to the schedule set forth in Exhibit I to this Settlement Agreement. Should the Soboba Tribe during that period identify a need for water in addition to the Schedule set forth in Exhibit J, the Soboba Tribe shall have the right to purchase water from the WMP at the rate then being charged to the WMP's municipal producers.

B. Any use of the Tribal Water Right by an individual member of the Soboba Tribe shall be satisfied out of the water resources provided to the Soboba Tribe in this Settlement Agreement.

C. In addition to the limitation in Section 4.3.A, the Soboba Tribe may enter into contracts and options to lease, contracts and options to exchange, or contracts and options to forbear the use of the Tribal Water Right or postpone undertaking new or expanded water uses, provided that any such contract or option for a term greater than five years shall require the approval of the Secretary. Any such water thereby made available to others shall only be used by participants in, or other users within the area of, the WMP. No contract shall be for a term exceeding one hundred (100) years, nor shall any contract provide for permanent alienation of any portion of the Tribal Water Right.

4.4 Purchase of Imported Water [see definition of Imported Water in Section 2.13 of this Settlement Agreement]. In order to provide water to the Soboba Tribe and to reduce the overdraft of the Basin, EMWD and MWD agree to enter into a contract pursuant to which MWD

will sell and EMWD on behalf of the WMP will purchase the Imported Water under the following terms:

A. Price. The Imported Water will be sold by MWD to EMWD at the then prevailing service rate charged by MWD for Untreated Replenishment Water, which rate is reflected in MWD's Administrative Code at section 4401(a)(2). As of the date this Settlement Agreement is signed by MWD, the service rate for such water is \$233 per acre foot. Changes in the rates charged for Imported Water shall be effective the same date that the new rates for Untreated Replenishment Water become applicable to MWD's member agencies. Should MWD ever discontinue the delivery of Untreated Replenishment Water, the service rate for water supplied pursuant to this contract shall initially be determined by taking the last published service rate for Untreated Replenishment Water and charged to EMWD under this contract. Thereafter, the rate for Imported Water would continue to be adjusted on the same percentage basis as MWD's service rate for the non-interruptible untreated water deliveries to its member agencies, which adjustments shall become effective on the same date that the new service rates become applicable to MWD's member agencies.

B. Use. For purposes of the Imported Water only, MWD releases EMWD from all covenants that now, or may in the future, require that water purchased at the service rate for Untreated Replenishment Water be left in the ground or otherwise not used for any period of time.

C. Duration. The contract shall commence upon the Effective Date and will expire on December 31, 2035. EMWD and MWD agree to negotiate in good faith a possible extension of this water sale contract for an additional period which, when added to the original term expiring on December 31, 2035, would provide for a total term of 50 years. In determining whether or not to extend the term of this contract for this additional period, MWD will consider the current status of its replenishment water program, the status of MWD's State Water Project contract, the implementation of this Settlement Agreement, and any other information that MWD deems relevant to the possible extension of the water sale contract. Nothing in this paragraph

shall be construed to require MWD to extend the water sale contact.

D. Water Quality. Water sold by MWD pursuant to this contract shall be of a quality that is consistent with MWD's operational and water quality goals. MWD agrees to make Best Efforts to meet water quality objectives set by the Santa Ana Regional Water Quality Control Board for recharged water being put into the Basin. MWD takes no risks associated with any discrepancy between the water quality obligations assumed by MWD pursuant to this paragraph and water quality standards applicable to recharged water set by the Santa Ana Regional Water Quality Control Board or other regulatory body.

E. Deliveries. Deliveries under this contract shall not begin until the Effective Date. Once deliveries are commenced, MWD shall use Best Efforts to deliver 7,500 AFA for the duration of the contract based upon 15-year averages. Annual deliveries shall be calculated on a January 1 to December 31 calendar year and shall be pro rated for any portion of a year during which the contract is in force. MWD reserves the right to deliver water at any time of the year. MWD shall give EMWD advance notice of Imported Water deliveries as provided for in MWD's then current Administrative Code and implementing guidelines for replenishment water deliveries, which presently is reflected in section 4514(c) of MWD's Administrative Code.

F. Point of Delivery. Deliveries shall be made by MWD to EMWD at the connection known as EM-14 or, upon mutual agreement of MWD and EMWD, at one or more additional existing or future connections. The Parties acknowledge that the suspension or termination of deliveries to EM-14 may, at any time, as determined by MWD's Chief Executive Officer, be required to meet MWD's operational needs. If deliveries to this location are suspended or terminated, then EMWD and MWD agree to negotiate in good faith to identify an alternative delivery point or points and, if MWD and EMWD are unable to reach agreement, the dispute shall be resolved by the Decree Court.

G. Recharge Facilities. The Local Districts, through the WMP, shall construct, operate, and maintain facilities for artificial Groundwater recharge and banking of the Imported Water. Said facilities shall be sufficient to accommodate a flow rate of 42 cubic feet per second



and to store up to 40,000 acre feet of Imported Water in the Basin. MWD shall have a paramount right to use capacity in the Recharge Facilities sufficient to accommodate a flow rate of 42 cubic feet per second and a paramount right to store up to 40,000 acre feet of Imported Water to meet its obligations under this Settlement Agreement, provided that MWD's sole remedy if the required storage capacity is not made available is to reduce its obligation by the amount of water that it was prepared but unable to deliver due to the lack of storage capacity. MWD's obligations under this Section 4.4 shall not arise until the Recharge Facilities are capable of meeting the capacity and storage requirements set forth in this paragraph.

H. Postponed Deliveries. EMWD shall have the right to postpone deliveries during periods when the Recharge Facilities are not capable of meeting the capacity and storage requirements set forth in Section 4.4.G, provided that each of the following four conditions are met: (i) the inability to meet capacity and storage requirements is the result of events beyond the control of the Local Districts and/or the WMP; (ii) the inability to meet capacity and storage requirements is not the result of negligence on the part of the Local Districts and/or the WMP; (iii) the inability to meet capacity and storage requirements is not the result of water quality limitations that are more restrictive than those established pursuant to Section 4.4.D, and (iv) that the Local Districts use Best Efforts to make necessary repairs and/or take other actions necessary to make the Recharge Facilities fully operational.

(1) If the conditions for postponed deliveries are met as required herein, MWD shall make up such deferred deliveries at a later time, to the extent that MWD has Untreated Replenishment Water available.

(2) If the conditions for postponed deliveries are not met as required herein, then MWD's obligation to deliver water shall be reduced by the amount of water that MWD was prepared to deliver, subject to the 42 cubic feet per second maximum flow rate, and the existence of unused storage capacity up to the 40,000 acre-foot maximum.

I. Pre-Deliveries. MWD shall have complete discretion concerning use of the 40,000 acre feet of storage capacity for the pre-delivery of Imported Water, including the right

not to use such capacity. As such, MWD makes no commitments to pre-deliver any amount of Imported Water.

4.5 Funding for Infrastructure. In accordance with the Act, the United States shall establish in the Treasury of the United States a fund in the amount of \$10,000,000, managed by the Secretary of the Interior, which may be drawn upon by EMWD to pay or reimburse costs associated with constructing, operating, and maintaining that portion of the Recharge Facilities necessary to accommodate deliveries of the Imported Water.

4.6 Land Transfer.

A. EMWD Property. In settlement of the Action, EMWD shall place into escrow a warranty deed conveying to the Soboba Tribe in fee all of the property presently owned by EMWD at Domenigoni Parkway and Highway 79, consisting of approximately 106 acres which is described and illustrated in Exhibit J to this Settlement Agreement. The escrow instructions shall provide that the warranty deed shall be delivered to the Soboba Tribe by close of business on the first business day following the Effective Date.

B. MWD Property. In settlement of the Action, MWD shall place into escrow a warranty deed conveying to the Soboba Tribe in fee property presently owned by MWD at Domenigoni Parkway and Patterson Avenue, consisting of approximately 21.7 acres which is described and illustrated in Exhibit K to this Settlement Agreement. The escrow instructions shall provide that the warranty deed shall be delivered to the Soboba Tribe by close of business on the first business day following the Effective Date.

C. The Secretary shall accept into trust for the benefit of the Tribe the lands conveyed to the Tribe pursuant to this Section.

D. Use of Property. Management and development by the Soboba Tribe of the lands transferred by this paragraph shall comply with all applicable Federal law. Any regulation by the Soboba Tribe of the environment on, under or above such lands that impacts MWD's operations, including but not limited to its operations related to Diamond Valley Reservoir, shall be consistent with, and no more stringent than, comparable regulation by the United States and the

State of California.

4.7 Development Funds.

A. Local Districts. No later than 120 days after the Effective Date and before any funds are released to the Local Districts under Section 4.5, the Local Districts shall pay to the Soboba Tribe the sum of \$17,000,000 plus interest at the average daily prime rate (as reported by the Wall Street Journal) plus two and one-quarter percent (2.25%) per annum from the Effective Date until paid. These funds are determined to be non-trust funds and shall be managed by the Soboba Tribe in its sole discretion. The United States shall have no responsibility with respect to the funds provided to the Soboba Tribe pursuant to this paragraph.

B. United States. In accordance with the Act, the United States shall establish in the Treasury of the United States a trust fund in the amount of \$11,000,000, managed by the Secretary of the Interior in accordance with the American Indian Trust Fund Management Reform Act of 1994 (25 U.S.C. 4001 et seq.) and this Settlement Agreement. There shall be no expenditures from the trust fund until the conditions in Section 3.1 are fulfilled.

(1) Investment of the Fund. The Secretary shall invest amounts in this fund in accordance with the Act of April 1, 1880 (21 Stat. 70, ch. 41, 25 U.S.C. 161), the first section of the Act of June 24, 1938 (52 Stat. 1037, ch. 648, 25 U.S.C. 162a), and this paragraph.

(2) Fund Uses. This fund may be drawn upon by the Soboba Tribe with the approval of the Secretary to pay or reimburse costs associated with constructing, operating, and maintaining water and sewage infrastructure or other water-related development projects.

4.8 Other Terms.

A. The Local Districts, with the cooperation of other Groundwater producers in the Basin, shall develop and implement a WMP for the Basin that will address the current Basin overdraft, and recognize and take into account the Tribal Water Right. The WMP shall not be final or deemed effective for the purposes of this Settlement until it is approved by the Soboba Tribe and the United States. No implementation or subsequent modification of the WMP shall threaten or adversely affect the rights of the Soboba Tribe hereunder, and the Soboba Tribe and

the United States reserve the right under the continuing jurisdiction of the Decree Court to litigate any such issue.

B. EMWD will credit to the Soboba Tribe the sum of \$1,000,000 to be deducted from the cost of water and sewage financial participation fees (connection fees) and similar fees charged by EMWD for any property owned by the Soboba Tribe within EMWD's then existing service area for which service is sought pursuant to an agreement for service between the Soboba Tribe and EMWD. The Soboba Tribe and EMWD agree to negotiate in good faith concerning any future agreement for service which shall be funded in whole or in part by the credit established pursuant to this paragraph.

C. LHMWD will make available for habitat preservation and/or environmental mitigation purposes property it owns in the San Jacinto River bed, consisting of approximately 12 acres which is described and illustrated in Exhibit L to this Settlement Agreement. This property shall be used for habitat preservation and/or environmental mitigation to assist in meeting the requirements of applicable Federal and State environmental laws relating to the Recharge Facilities.

D. In consideration for the benefits received under this Settlement Agreement, the Soboba Tribe shall make available, without transfer of title, up to 98 acres of land for habitat preservation and/or environmental mitigation to assist in meeting the requirements of applicable Federal and State environmental laws relating to the Recharge Facilities. The area from which the Soboba Tribe, in consultation with the United States Fish and Wildlife Service, will select the land to be used for these purposes is described and illustrated in Exhibit M of this Settlement Agreement.

E. The Soboba Tribe agrees to provide the Local Districts with all information reasonably available to the Soboba Tribe that the Local Districts and the Soboba Tribe agree is required to implement this Settlement Agreement and the WMP.

F. MWD shall not be joined in any legal proceeding to enforce the Tribal Water Right described in Sections 4.1 through 4.3 or which concerns the duties and obligations

reflected at Section 4.8, paragraphs A through E, unless said proceeding relates to MWD's failure to perform its obligations to deliver water set forth in Section 4.4.

## **ARTICLE 5 - RELEASES AND WAIVERS**

### **5.1 Soboba Tribe**

A. The Soboba Tribe, on behalf of itself and its members, and the United States solely in its capacity as trustee for the Tribe releases EMWD, LHMWD, and MWD for:

(1) All past, present and future claims to Surface and Groundwater rights for the Reservation, from time immemorial through the Effective Date and anytime thereafter;

(2) All past, present and future claims for injury of any kind, whether to person, property, or other right or interest, arising from, or in any way related to, interference with Surface and Groundwater rights and resources of the Reservation, including, but not limited to, all claims for injury to the Soboba Tribe's use and enjoyment of the Reservation, economic development, religion, language, social structure and culture, and injury to the natural resources of the Reservation, from time immemorial through the Effective Date;

(3) All past, present and future claims for injury of any kind, whether to person, property, or other right or interest, arising from, or in any way related to, continuing interference with Surface and Groundwater rights and resources of the Reservation, including the full scope of claims defined in Section 5.1.A(2), to the extent that such continuing interference began prior to the Effective Date, from time immemorial through the Effective Date and anytime thereafter;

(4) All past, present and future claims for injury of any kind, whether to person, property, or other right or interest, arising from, or in any way related to, seepage of water into the Tunnel, including the full scope of claims defined in Section 5.1.A(2), from time immemorial through the Effective Date and anytime thereafter.

B. The Soboba Tribe, on behalf of itself and its members, releases the United States for:

(1) All claims described in Section 5.1.A(1)-(4);

(2) All past, present and future claims for failure to acquire or develop water rights

and resources of the Reservation from time immemorial through the Effective Date and anytime thereafter;

(3) All past, present and future claims for failure to protect water rights and resources of the Reservation from time immemorial through the Effective Date, and any past, present and future claims for any continuing failure to protect water rights and resources of the Reservation, from time immemorial through the Effective Date and, to the extent that such continuing failure to protect began before the Effective Date, anytime thereafter;

(4) All past, present and future claims arising from the failure of any non-federal Party to fulfill the terms of this Settlement Agreement at anytime.

(5) All past, present, and future claims arising out of the negotiation of this Settlement Agreement or the negotiation and enactment of the Act, or any specific terms or provisions thereof, including but not limited to the Soboba Tribe's consent to limit the number of participant parties to this Settlement Agreement.

C. The Soboba Tribe, on behalf of itself and its members, expressly preserves as against all Parties all rights and remedies relating to:

(1) The enforcement of this Settlement Agreement;

(2) The infringement of any water rights arising under Federal or State law which may be appurtenant to property, other than the Reservation, that is now owned or hereafter acquired by the Soboba Tribe, excepting claims identified in Section 5.1.A(4), which relate to Tunnel seepage, and any challenge to approved portions of the WMP.

D. The Soboba Tribe agrees to defend, indemnify, and hold harmless EMWD, LHMWD, MWD, and the United States for any claim seeking damages or other form of relief based upon the rights released by the Soboba Tribe in Section 5.1.A and B, and all of their respective subparts.

5.2 EMWD

A. EMWD shall release LHMWD, MWD, the Soboba Tribe, and the United States from:

(1) All past and present claims arising from or in any way related to the claims released by the Soboba Tribe and the United States solely in its capacity as trustee for the Soboba Tribe in Section 5.1, A and B, and all of their respective subparts; and

(2) All past and present claims arising from, or in any way related to, interference with EMWD's Surface and Groundwater rights under Federal or State law from time immemorial through the Effective Date, including, but not limited to, all rights originally belonging to EMWD's predecessors and/or otherwise acquired by EMWD prior to the Effective Date .

B. Notwithstanding the dispute between EMWD and MWD over the scope of EMWD's defense and indemnity obligations reflected in Section 8 of Resolution 3940 (the Terms of Annexation) or the language of Section 8, EMWD shall defend and indemnify MWD against all demands, claims, suits, or other administrative or legal proceedings arising from, or in anyway connected to, the infiltration of water into the Tunnel. This obligation shall apply irrespective of when the claim arose or the alleged infringement, harm, or injury occurred.

C. EMWD expressly preserves all rights and remedies relating to:

(1) As against all Parties, the enforcement of this Settlement Agreement;

(2) As against all Parties, the infringement of any water rights arising under State law acquired in the future by EMWD; and

(3) As against MWD, the Terms of Annexation, except as expressly agreed to in Section 5.2.B.

### 5.3 LHMWD

A. LHMWD shall release EMWD, MWD, the Soboba Tribe, and the United States from:

(1) All past and present claims arising from or in any way related to the claims released by the Soboba Tribe and the United States solely in its capacity as trustee for the Soboba Tribe in Section 5.1.A and B, and all of their respective subparts; and

(2) All past and present claims arising from, or in any way related to, interference

with LHMWD's Surface and Groundwater rights under Federal or State law from time immemorial through Effective Date.

B. LHMWD expressly preserves all rights and remedies relating to:

(1) As against all Parties, the enforcement of this Settlement Agreement; and

(2) As against all Parties, the infringement of any water rights arising under State law acquired in the future by LHMWD.

#### 5.4 MWD

A. MWD shall release EMWD, LHMWD, the Soboba Tribe, and the United States from:

(1) All past and present claims arising from or in any way related to the claims released by the Soboba Tribe and the United States solely in its capacity as trustee for the Soboba Tribe in Section 5.1.A and B, and all of their respective subparts; and

(2) All past and present claims arising from, or in any way related to, interference with MWD's Surface and Groundwater rights under Federal or State law from time immemorial through the Effective Date .

B. MWD expressly preserves all rights and remedies relating to:

(1) As against all Parties, the enforcement of this Settlement Agreement;

(2) As against all Parties, the infringement of any water rights arising under State law acquired in the future by MWD; and

(3) As against EMWD, the Terms of Annexation, except as expressly agreed to in Section 5.2.B.

#### 5.5 All Parties Release of Unknown Claims.

A. Each Party acknowledges and agrees that certain of the releases reflected in Sections 5.1 through 5.5 apply to all claims whether known or unknown to the releasing Party.

B. Each Party certifies that it has read the following provisions of California Civil Code Section 1542:

“A general release does not extend to claims which the creditor does not know or suspect



to exist in his favor at the time of executing the release, which if known by him must have materially affected his settlement with the debtor.ö

C. Each Party waives the application of California Civil Code Section 1542. In doing so, each Party acknowledges that it is consciously releasing claims that may exist as of the date of this release but which it does not know exist, and which, if known, would materially affect its decision to execute this Settlement Agreement, regardless of whether the Parties' lack of knowledge is the result of ignorance, oversight, error, negligence, or any other cause.

5.6 Waiver of Sovereign Immunity. If any Party to this Settlement Agreement brings an action or other proceeding in any court of the United States relating only and directly to the interpretation or enforcement of the Act or the Settlement Agreement and names the United States or the Soboba Tribe as a party, the United States, the Tribe, or both, may be joined in any such action, and any claim by the United States or the Tribe to sovereign immunity from the action is waived, other than with respect to claims for monetary awards, for the limited and sole purpose of such interpretation or enforcement.

## **ARTICLE 6- ADMINISTRATION AND OTHER CONSIDERATIONS**

6.1 Disclaimer. Nothing in this Settlement Agreement shall be construed as establishing any standard to be used for the quantification of Federal reserved rights, aboriginal claims, or any other Indian claims to water or lands in any judicial or administrative forum or proceeding. Nothing in this Settlement Agreement shall be construed to quantify or otherwise affect the water rights, claims or entitlements to water of any California tribe, band or community other than the Soboba Tribe.

6.2 Evidentiary Effect of Negotiations. This Settlement Agreement has been arrived at in the process of good faith negotiation for the purpose of resolving legal disputes, including pending litigation, and all Parties agree that no conduct, statements, offers, or compromises made in the course thereof shall be construed as admissions against interest or be used in any legal forum or proceeding other than one for approval, confirmation, interpretation, or enforcement of this Settlement Agreement.

6.3 Authorship. The Parties agree that this Settlement Agreement reflects the joint drafting efforts of all Parties. In the event that any dispute, disagreement, or controversy arises regarding this Settlement Agreement, the Parties shall be considered joint authors and no provision shall be interpreted against any Party because of authorship.

6.4 Authorization to Execute. Each Party represents and warrants that she or he is authorized to execute this Settlement Agreement on behalf of the respective Parties to this Settlement Agreement and does so freely and voluntarily.

6.5 Effect of Execution by the Districts. Execution of this Settlement Agreement by the Districts signifies that provisions of this Settlement Agreement affecting the Districts have been approved by their respective Boards of Directors, and these agencies assume the obligations of and are entitled to the benefits of this Settlement Agreement.

6.6 No Inducements. Each Party acknowledges and represents that in executing this Settlement Agreement it has not relied upon any inducements, promises, or representations made by the other Parties which are not reflected in this Settlement Agreement.

6.7 Advice of Counsel. Each Party warrants and represents that, in executing this Settlement Agreement, it has relied upon legal advice from counsel of its choice; that the terms of this Settlement Agreement have been read and its consequences have been completely explained to it by counsel; and that it fully understands the terms of this Settlement Agreement.

6.8 Contingent on Appropriation of Funds. The expenditure or advance of any money or the performance of any obligation by the United States under this Settlement Agreement is contingent upon appropriation of funds therefor. If funds are not appropriated, the United States shall accrue no liability.

6.9 Officials Not to Benefit. No member of or delegate to Congress or Resident Commissioner shall be admitted to any share or part of this Settlement Agreement or to any benefit that may arise from this Settlement Agreement. This restriction shall not be construed to extend to this Settlement Agreement if made with a corporation or company for its general benefit.

6.10 Counterparts. This Settlement Agreement may be signed in counterparts by one or more of the Parties, and those counterparts, when taken together, shall have the same force and effect as if a single, original document had been signed by all the Parties.

6.11 Jurisdiction. The Decree Court retains jurisdiction over the Judgment and Decree and the Settlement Agreement.

6.12 Governing Law. This Settlement Agreement shall be construed in accordance with Federal laws and where appropriate the laws of the State of California.

6.13 Successors and Assigns. This Settlement Agreement and the attached waivers and agreements shall, unless otherwise indicated, be binding on and inure to the benefit of the Parties, and their respective successors and assigns.

6.14 Integration. This Settlement Agreement incorporates all the exhibits and sets forth the entire agreement of the Parties with respect to the subject matter hereof, with the exception that EMWD and MWD have resolved certain rights and obligations by way of a Partial Settlement Agreement dated November 14, 2001 which shall remain binding on those two Parties only. This Settlement Agreement may be amended only by written agreement executed by the Parties.

## **ARTICLE 7- NOTICE AND SIGNATURES**

7.1 Notices. Any notice or other communication given under this Settlement Agreement must be in writing and delivered by overnight courier service or certified mail, return receipt requested, postage prepaid and properly addressed to the Parties at the addresses listed below (or to any other or further addresses the Parties may subsequently designate by notice in this manner). All these notices and communication shall be effective when delivery to the required recipient is completed in accordance with this paragraph:

To the Soboba Tribe:

Chairperson  
Soboba Band of Luiseño Indians  
P.O. Box 487  
San Jacinto, CA 92581

To the United States of America: Asst. Secretary for Indian Affairs  
U.S. Department of the Interior  
1849 C St. NW 4104 MIB  
Washington, DC 20240-0001  
Chief, U.S. Dept. of Justice  
Indian Resources Section  
P.O. Box 44378  
L'Enfant Plaza Station Washington, DC 20026-4378

cc: Regional Director  
Bureau of Indian Affairs  
Pacific Region  
2800 Cottage Way  
Sacramento, CA 95825

To EMWD: General Manager  
Eastern Municipal Water District  
P.O. Box 8300  
Perris, CA 92572-8300

To LHMWD: General Manager  
Lake Hemet Municipal Water District  
2480 East Florida Avenue  
P.O. Box 5039  
Hemet, CA 92544

To MWD: Chief Executive Officer  
Metropolitan Water District of Southern California  
P.O. Box 54153  
Los Angeles, California 90054-0153

General Counsel  
Metropolitan Water District of Southern California  
P.O. Box 54153  
Los Angeles, California 90054-0153

IN WITNESS WHEREOF, the Parties have executed this Settlement Agreement on the  
day and year written below.

SOBOBA BAND OF LUISEÑO INDIANS

Date: \_\_\_\_\_

By: \_\_\_\_\_  
Robert J. Salgado Sr., Chairman

THE UNITED STATES OF AMERICA

Date: \_\_\_\_\_

By: \_\_\_\_\_

THE EASTERN MUNICIPAL WATER DISTRICT

Date: \_\_\_\_\_

By: \_\_\_\_\_  
Randy A. Record, President

THE LAKE HEMET MUNICIPAL WATER DISTRICT

Date: \_\_\_\_\_

By: \_\_\_\_\_  
Joseph D. Van Sickle, President

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Date \_\_\_\_\_

By: \_\_\_\_\_  
Jeffrey Kightlinger, General Manager



## **EXHIBITS TO SETTLEMENT AGREEMENT**

- A. Soboba Settlement Act
- B. Map of the Basin and San Jacinto River
- C. Description of the Basin
- D. Map of the Soboba Reservation
- E. Principles for Water Management
- F. Map of the Water Management Plan Area
- G. Description of the Water Management Plan Area
- H. Judgment and Decree
- I. Soboba Tribe's Water Development Schedule
- J. Description of EMWD Property
- K. Description of MWD Property
- L. Description of LHMWD Property
- M. Map of Potential Soboba Reservation Lands for Habitat Preservation and/or Environmental Mitigation





## Exhibit A – Soboba Settlement Act

### SEC. 1. SHORT TITLE.

This Act may be cited as the ‘Soboba Band of Luiseño Indians Settlement Act’.

### SEC. 2. FINDINGS AND PURPOSES.

(a) FINDINGS.– The Congress finds the following–

(1) The Soboba Band of Luiseño Indians is a federally-recognized Indian tribe whose Reservation of approximately 6,000 acres, extending east and north from the banks of San Jacinto River in Riverside County, California, was created by an Executive Order of June 19, 1883, and enlarged and modified by subsequent Executive Orders, purchases, and an Act of Congress.

(2) The Tribe’s water rights have not been quantified, and the Tribe has longstanding unresolved claims for interferences with the water resources of its Reservation, which the Tribe maintains have rendered much of the Tribe’s Reservation useless for habitation, livestock, or agriculture. On April 20, 2000, the Tribe filed a lawsuit against The Metropolitan Water District of Southern California for interference with the Tribe’s water resources and damages to its Reservation allegedly caused by Metropolitan’s construction and operation of the San Jacinto Tunnel, which is part of the Colorado River Aqueduct. The lawsuit, styled *Soboba Band of Luiseño Indians v. Metropolitan Water District of Southern California*, No. 00-04208 GAF (MANx), is pending in the United States District Court for the Central District of California.

(3) The Tribe also has made claims against Eastern Municipal Water District and Lake Hemet Municipal Water District, located adjacent to the Reservation, seeking to secure its water rights and damages arising from alleged past interference with the Tribe’s water resources.

(4) Recognizing that the final resolution of its water rights and claims through litigation will take many years and entail great expense to all parties, continue to limit the Tribe's access to water with economic, social, and cultural consequences to the Tribe, prolong uncertainty as to the availability of water supplies, and seriously impair the long-term economic planning and development of all parties, the Tribe and non-Indian entities have sought to settle their water-related disputes and reduce the burdens of litigation.

(5) After negotiations, which included participation by representatives of the Tribe, the United States, The Metropolitan Water District of Southern California, Eastern Municipal Water District, and Lake Hemet Municipal Water District, the parties have entered into a Settlement Agreement to determine the Tribe’s water rights, resolve all of its claims for interference with the water resources of, and damages to, its Reservation, and provide for the construction of water projects to facilitate the exercise of the Tribe's rights.

(6) Pursuant to the Settlement Agreement, Eastern Municipal Water District and Lake Hemet Municipal Water District acknowledge and assure the Tribe’s prior and paramount right, superior to all others, to pump 9,000 acre-feet of water annually from the San Jacinto River basin. To provide water to the Tribe and to

reduce the overdraft of the basin, the two water districts and The Metropolitan Water District of Southern California will contract to import and recharge supplemental water supplies into the basin. The water districts also will make substantial additional contributions to the settlement, including the conveyance of certain replacement lands and economic development funds to the Tribe, to carry out the Settlement Agreement's provisions.

(7) It is appropriate that the United States participate in the implementation of the Settlement Agreement, and contribute funds to enable the Tribe to use its water entitlement in developing its Reservation, and to assist the neighboring non-Indian entities in the construction, operation, and maintenance of the facilities required to recharge the imported water.

(b) **PURPOSES.**— The purposes of this Act are—

(1) to approve, ratify, and confirm the Settlement Agreement entered into by the Tribe and non-Indians entities;

(2) to authorize and direct the Secretary of the Interior to execute and perform the Settlement Agreement and related waivers;

(3) to authorize the actions, agreements, and appropriations as provided in the Settlement Agreement and this Act.

### **SEC. 3. DEFINITIONS.**

In this Act—

(1) **RESTORATION FUND.**— The term ‘Restoration Fund’ means the San Jacinto Basin Restoration Fund established by section 6 of this Act.

(2) **DEVELOPMENT FUND.**— The term ‘Development Fund’ means the Soboba Band of Luiseño Indians Water Development Fund established by section 7 of this Act.

(3) **RESERVATION.**— The term ‘Reservation’ means the Soboba Indian Reservation created by an Executive Order dated June 19, 1883, and enlarged and modified by subsequent Executive Orders, purchases, and an Act of Congress, excluding the 950 acres northwest of and contiguous to the Reservation known as the “Jones Ranch,” purchased by the Soboba Tribe in fee on July 21, 2001, and placed into trust on January 13, 2003, the 129.19 acres southeast of and contiguous to the Reservation known as the “Horseshoe Properties,” purchased by the Soboba Tribe in fee in four separate transactions in June and December 2001, and the 478 acres north of and contiguous to the Reservation known as “Kwiili,” purchased by the Soboba Tribe in fee on April 4, 2004.

(4) **SECRETARY.**— The term ‘Secretary’ means the Secretary of the Interior or her designee.

(5) **SETTLEMENT AGREEMENT.**— The term ‘Settlement Agreement’ means that agreement dated \_\_\_\_\_, 2004, together with all exhibits thereto. The parties to the Settlement Agreement are the Soboba Band of Luiseño Indians and its members, the United States on behalf of the Tribe and its members, The

Metropolitan Water District of Southern California, Eastern Municipal Water District, and Lake Hemet Municipal Water District.

(6) **TRIBE, SOBOBA TRIBE, or SOBOBA BAND OF LUISEÑO INDIANS.**— The terms ‘Tribe’, ‘Soboba Tribe’, or ‘Soboba Band of Luiseño Indians’ means the body politic and federally recognized Indian tribe, and its members.

(7) **WATER MANAGEMENT PLAN.**— The term ‘Water Management Plan’ means the plan, approved by the Soboba Tribe and the Secretary, developed pursuant to Section 4.8, paragraph A of the Settlement Agreement to resolve the overdraft of the San Jacinto basin.

#### **SEC. 4. RATIFICATION OF SETTLEMENT AGREEMENT; AUTHORIZATION.**

(a) **IN GENERAL.**— The United States hereby approves, ratifies, and confirms the Settlement Agreement, except to the extent it conflicts with the provisions of this Act, and consents to be made a party to the pending action described in section 2, paragraph (a)(2) of this Act for the purpose of entering the judgment and decree attached to the Settlement Agreement as Exhibit H.

(b) **AUTHORIZATION.**— The Secretary is authorized and directed to execute, and take such other actions as are necessary to implement, the Settlement Agreement and any amendments approved by the parties necessary to make the Settlement Agreement consistent with this Act.

#### **SEC. 5. AUTHORIZATION OF APPROPRIATIONS.**

(a) **RESTORATION FUND.**— There is authorized to be appropriated to the San Jacinto Basin Restoration Fund established in section 6 of this Act the amount of \$10,000,000 to pay or reimburse costs associated with constructing, operating, and maintaining the portion of the basin recharge project, described in Section 4.5 of the Settlement Agreement, necessary to accommodate deliveries of the supplemental imported water under Section 4.4 of the Settlement Agreement.

(b) **DEVELOPMENT FUND.**— There is authorized to be appropriated to the Soboba Band of Luiseño Indians Water Development Fund established in section 7 of this Act the amount of \$11,000,000 to pay or reimburse costs associated with constructing, operating, and maintaining water and sewage infrastructure, and other water-related development projects.

#### **SEC. 6. RESTORATION FUND.**

(a) **ESTABLISHMENT.**— There shall be established within the Treasury of the United States a non-interest bearing account to be known as the ‘San Jacinto Basin Restoration Fund’, consisting of the amounts authorized to be appropriated in section 5, paragraph (a) of this Act.

(b) **ADMINISTRATION.**— The Restoration Fund shall be administered by the Secretary for the purposes set forth in paragraph (d) of this section.

(c) AVAILABILITY.— The funds authorized to be appropriated pursuant to section 5, paragraph (a) of this Act shall be available for expenditure or withdrawal only after the requirements set forth in section 9(e) of this Act and paragraph (d) of this section have been met.

(d) EXPENDITURES AND WITHDRAWALS.—

(1) EXPENDITURE PLAN.—

(A) IN GENERAL.— Eastern Municipal Water District, on behalf of the Water Management Plan, shall submit to the Secretary for approval an expenditure plan for use of the Restoration Fund.

(B) REQUIREMENTS.— The expenditure plan shall require that any funds be expended or reimbursed in accordance with the purposes described in section 5, paragraph (a) of this Act.

(C) APPROVAL.— The Secretary shall approve the expenditure plan if it is reasonable and not inconsistent with this Act.

(2) WITHDRAWALS.— On approval by the Secretary of the expenditure plan described in this section, Eastern Municipal Water District, on behalf of the Water Management Plan, may withdraw monies from the Restoration Fund as provided in the plan.

(3) ENFORCEMENT.— The Secretary may take judicial or administrative action to enforce the provisions of any expenditure plan to ensure that monies withdrawn from the Restoration Fund under the plan are used in accordance with this Act.

(4) LIABILITY.— If Eastern Municipal Water District, on behalf of the Water Management Plan, exercises the right to withdraw monies from the Restoration Fund, neither the Secretary nor the Secretary of the Treasury shall retain any liability for the expenditure or investment of the monies withdrawn.

(5) ANNUAL REPORT.— Eastern Municipal Water District shall submit to the Tribe and the Secretary an annual report that describes all expenditures from the Restoration Fund during the year covered by the report.

## **SEC. 7. DEVELOPMENT FUND.**

(a) ESTABLISHMENT.— There shall be established within the Treasury of the United States an interest bearing account to be known as the ‘Soboba Band of Luiseño Indians Water Development Fund’, to be managed and invested by the Secretary, consisting of the amounts authorized to be appropriated in section 5, paragraph (b) of this Act.

(b) MANAGEMENT.— The Secretary shall manage the Development Fund, make investments, and make monies available for distribution consistent with the American Indian Trust Fund Management Reform Act of 1994 (25 U.S.C. 4001 et seq.) (referred to in this section as the ‘Trust Fund Reform Act’), this Act, and the Settlement Agreement.

(c) INVESTMENT.— The Secretary shall invest amounts in the Development Fund in accordance with—

(1) the Act of April 1, 1880 (21 Stat. 70, ch. 41, 25 U.S.C. 161);

(2) the first section of the Act of June 24, 1938 (52 Stat. 1037, ch. 648, 25 U.S.C. 162a); and

(3) paragraph (b) of this section.

(d) AVAILABILITY.— The funds authorized to be appropriated pursuant to section 5, paragraph (b) of this Act shall be available for expenditure or withdrawal only after the requirements set forth in section 9(e) of this Act and paragraph (e) below have been met.

(e) EXPENDITURES AND WITHDRAWALS.—

(1) TRIBAL MANAGEMENT PLAN.—

(A) IN GENERAL.— The Tribe may withdraw all or part of the Development Fund on approval by the Secretary of a tribal management plan as described in the Trust Fund Reform Act.

(B) REQUIREMENTS.— In addition to the requirements under the Trust Fund Reform Act, the tribal management plan shall require that any funds be expended or reimbursed in accordance with the purposes described in section 5, paragraph (b) of this Act.

(2) ENFORCEMENT.— The Secretary may take judicial or administrative action to enforce the provisions of any tribal management plan to ensure that monies withdrawn from the Development Fund under the plan are used in accordance with this Act.

(3) LIABILITY.— If the Tribe exercises the right to withdraw monies from the Development Fund, neither the Secretary nor the Secretary of the Treasury shall retain any liability for the expenditure or investment of the monies withdrawn.

(4) ANNUAL REPORT.— The Tribe shall submit to the Secretary an annual report that describes all expenditures from the Development Fund during the year covered by the report.

(5) NO PER CAPITA DISTRIBUTIONS.— No part of the Development Fund shall be distributed on a per capita basis to members of the Tribe.

## **SEC. 8. WAIVERS AND RELEASES.**

(a) TRIBE AND UNITED STATES AUTHORIZATION.— The Tribe, on behalf of itself and its members, and the Secretary, on behalf of the United States in its capacity as trustee for the Tribe and its members, are authorized, as part of the performance of their obligations under the Settlement Agreement, to execute a waiver and release for claims under Federal, State, or other law against The Metropolitan Water District of Southern California, Eastern Municipal Water District and Lake Hemet Municipal Water District, for any and all—

(1) past, present, and future claims to surface and groundwater rights for the Reservation from time immemorial through the effective date described in section 10 of this Act and anytime thereafter;

(2) past, present, and future claims for injury of any kind, whether to person, property, or other right or interest, arising from, or in any way related to,

interference with surface and groundwater rights and resources of the Reservation, including, but not limited to, all claims for injury to the Tribe's use and enjoyment of the Reservation, economic development, religion, language, social structure and culture, and injury to the natural resources of the Reservation, from time immemorial through the effective date described in section 10 of this Act;

(3) past, present, and future claims for injury of any kind, whether to person, property, or other right or interest, arising from, or in any way related to, continuing interference with surface and groundwater rights and resources of the Reservation, including the full scope of claims defined in Section 5.1, paragraph A(2) of the Settlement Agreement, to the extent that such continuing interference began prior to the effective date described in section 10 of this Act, from time immemorial through the effective date described in section 10 of this Act and anytime thereafter; and

(4) past, present, and future claims for injury of any kind, whether to person, property, or other right or interest, arising from, or in any way related to, seepage of water into the San Jacinto Tunnel, including the full scope of claims defined in Section 5.1, paragraph A(2) of the Settlement Agreement, from time immemorial through the effective date described in section 10 of this Act and anytime thereafter.

(b) **TRIBAL WAIVERS AGAINST THE UNITED STATES.**— The Tribe is authorized, as part of the performance of its obligations under the Settlement Agreement, to execute a waiver and release for claims against the United States (acting in its capacity as trustee for the Tribe or its members, or otherwise acting on behalf of the Tribe or its members), including any agencies, officials, or employees thereof, for any and all—

(1) claims described in paragraph (a) of this section;

(2) past, present, and future claims for failure to acquire or develop water rights and resources of the Reservation from time immemorial through the effective date described in section 10 of this Act and anytime thereafter;

(3) past, present, and future claims for failure to protect water rights and resources of the Reservation from time immemorial through the effective date described in section 10 of this Act, and any past, present, and future claims for any continuing failure to protect water rights and resources of the Reservation, from time immemorial through the effective date described in section 10 of this Act and, to the extent that such continuing failure to protect began before the effective date described in section 10 of this Act, anytime thereafter;

(4) past, present, and future claims arising from the failure of any non-federal Party to fulfill the terms of the Settlement Agreement at anytime; and

(5) past, present, and future claims arising out of the negotiation of the Settlement Agreement or the negotiation and enactment of this Act, or any specific terms or provisions thereof, including, but not limited to, the Tribe's consent to limit the number of participant parties to the Settlement Agreement.

## **SEC. 9. MISCELLANEOUS PROVISIONS.**

(a) **WAIVER OF SOVEREIGN IMMUNITY.**— If any party to the Settlement Agreement brings an action or other proceeding in any court of the United States relating only and directly to the interpretation or enforcement of this Act or the Settlement Agreement and names the United States or the Soboba Tribe as a party—

- (1) the United States, the Tribe, or both, may be joined in any such action; and
- (2) any claim by the United States or the Tribe to sovereign immunity from the action is waived, other than with respect to claims for monetary awards, for the limited and sole purpose of such interpretation or enforcement.

(b) **TRIBAL USE OF WATER.**—

(1) **IN GENERAL.**— With respect to water rights made available under the Settlement Agreement—

(A) the Tribe may use water made available to it under the Settlement Agreement for any use it deems advisable on the Reservation and on any other lands it owns or may acquire, in fee or in trust, contiguous to the Reservation or within the area of the groundwater basin described in Section 2.4 of the Settlement Agreement;

(B) such water rights shall be held in trust by the United States in perpetuity, and shall not be subject to forfeiture or abandonment; and

(C) State law shall not apply to the Tribe's use of water made available to it under the Settlement Agreement.

(2) **LIMITATION.**—

(A) **IN GENERAL.**— Except as provided in paragraph (B) below, the Tribe shall not sell or lease water made available to it under the Settlement Agreement.

(B) **EXCEPTION.**— The Tribe may enter into contracts and options to lease, contracts and options to exchange, or contracts and options to forbear the use of water made available to it under the Settlement Agreement or postpone undertaking new or expanded water uses, provided that any such contract or option for a term greater than five years shall require the approval of the Secretary. Any such water thereby made available to others shall only be used by participants in, or other users within the area of, the Water Management Plan described in Section 2.32 of the Settlement Agreement. No contract shall be for a term exceeding one hundred years, nor shall any contract provide for permanent alienation of any portion of the water rights made available under the Settlement Agreement.

(c) **ACCEPTANCE OF LAND INTO TRUST.**— The Secretary shall accept into trust for the benefit of the Tribe the lands conveyed to the Tribe pursuant to Section 4.6 of the Settlement Agreement, which conveyed lands shall be considered for all purposes as if

they were so acquired into trust status in 1937, except as to valid rights existing at the time of acquisition pursuant to this Act.

(d) **HABITAT CONSERVATION.**— The United States, in its capacity as trustee for the Tribe, and the Tribe in its own right shall make available, including, if necessary, by conveyance of a permanent easement to the United States Fish and Wildlife Service or other agency of the United States, up to 98 acres of Reservation land for habitat conservation related to the portion of the basin recharge project necessary to accommodate deliveries of the supplemental imported water described in Section 4.4 of the Settlement Agreement.

(e) **AVAILABILITY OF APPROPRIATIONS.**— The funds authorized to be appropriated under section 5 of this Act shall not be available for expenditure or withdrawal until the requirements of section 10(a) of this Act have been met and the waivers and releases set out in section 8 of this Act become effective.

(f) **RETENTION OF RIGHTS.**—

(1) In the event the waivers and releases set out in section 8 of this Act do not become effective pursuant to section 10(a) of this Act, the Soboba Tribe and the United States shall retain the right to assert all rights and claims enumerated in section 8, and any claims or defenses of the parties to the Settlement Agreement shall also be retained.

(2) The parties expressly reserve all rights not specifically granted, recognized, waived, or released by the Settlement Agreement or this Act.

(g) **PRECEDENT.**— Nothing in this Act shall be construed or interpreted as a precedent for the quantification or litigation of federal reserved water rights or the interpretation or administration of future water settlement Acts.

(h) **OTHER INDIAN TRIBES.**— Nothing in the Settlement Agreement or this Act shall be construed in any way to quantify or otherwise adversely affect the water rights, claims, or entitlements to water of any Indian tribe, band, or community, other than the Soboba Tribe.

(i) **ENVIRONMENTAL COMPLIANCE.**—

(1) Signing by the Secretary of the Settlement Agreement does not constitute major Federal action under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

(2) The Secretary shall comply with all aspects of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), and other applicable environmental laws, in implementing the terms of the Settlement Agreement and this Act.

## **SEC. 10. EFFECTIVE DATE.**

(a) **IN GENERAL.**— The waiver and release authorizations contained in subsections (b) and (c) of section 8 of this Act shall become effective as of the date the Secretary causes to be published in the Federal Register a statement of findings that—

(1) this Act has been enacted;



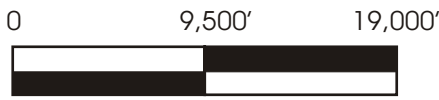
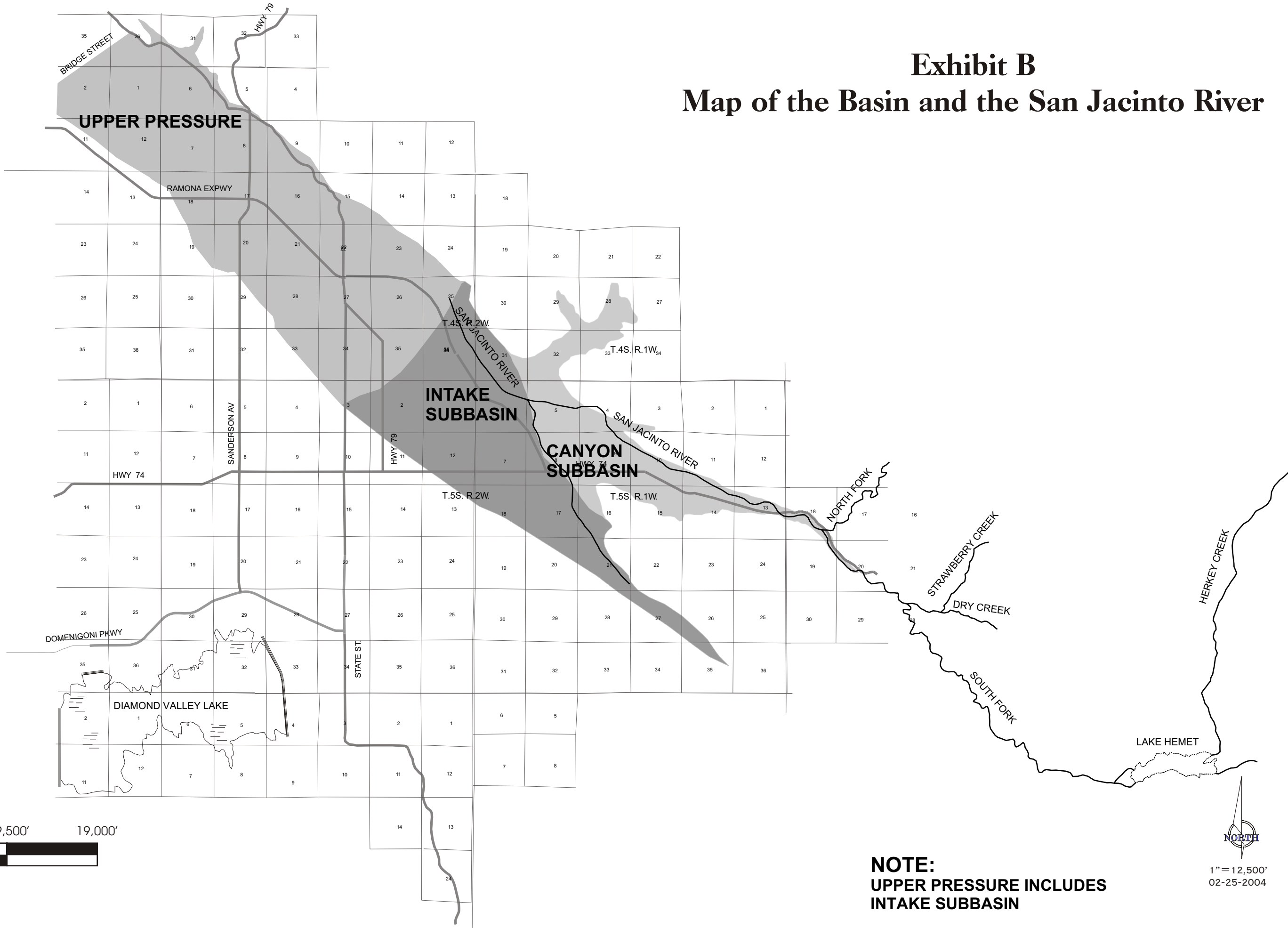
- (2) to the extent that the Settlement Agreement conflicts with this Act, the Settlement Agreement has been revised to conform with the Act;
- (3) the Settlement Agreement, revised as necessary, and the waivers and releases described in Article 5 of the Settlement Agreement and section 8 of this Act have been executed by the parties and the Secretary;
- (4) warranty deeds for the property to be conveyed to the Tribe described in section 4.6 of the Settlement Agreement have been placed in escrow;
- (5) the Tribe and the Secretary have approved the Water Management Plan;
- (6) the judgment and decree attached to the Settlement Agreement as Exhibit H has been approved by the United States District Court, Eastern Division of the Central District of California, and that judgment and decree have become final and nonappealable; and
- (7) the payment of the funds authorized by section 5 of this Act have been appropriated and deposited into the Restoration Fund and the Development Fund.

(b) DEADLINE FOR EFFECTIVE DATE.— If the conditions precedent required under paragraph (a) of this section have not been fulfilled by December 31, 2007, the Settlement Agreement and this Act shall not thereafter be effective and shall be null and void. Any funds and the interest accrued thereon appropriated pursuant to section 5 shall revert to the general fund of the United States Treasury on October 1, 2008.



# Exhibit B

## Map of the Basin and the San Jacinto River



**NOTE:**  
UPPER PRESSURE INCLUDES  
INTAKE SUBBASIN



1" = 12,500'  
02-25-2004

## Exhibit C – Description of the Basin

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### Legal Description for Canyon Sub-basin

Beginning at a point lying North 03-03-37 East, a distance of 8693.42 feet from the north one quarter corner of Section 7, Township 5 South, Range 1 East, S.B.B. & M.:

- Thence South 33-29-10 East, a distance of 1188.9727
- Thence South 20-26-50 East, a distance of 500.9370
- Thence South 27-28-23 East, a distance of 428.6517
- Thence South 31-35-33 East, a distance of 630.8741
- Thence South 21-07-46 East, a distance of 910.5965
- Thence South 18-48-47 East, a distance of 1015.1730
- Thence South 24-22-09 East, a distance of 638.3066
- Thence South 14-50-24 East, a distance of 1778.9616
- Thence South 09-47-36 East, a distance of 1132.4407
- Thence South 10-53-51 East, a distance of 909.1444
- Thence South 21-23-19 East, a distance of 960.3948
- Thence South 16-05-57 East, a distance of 627.4825
- Thence South 17-13-52 East, a distance of 1029.1928
- Thence South 26-09-14 East, a distance of 249.2721
- Thence South 46-45-44 East, a distance of 1246.0249
- Thence South 45-42-20 East, a distance of 804.0414
- Thence South 53-45-51 East, a distance of 494.8303
- Thence South 41-51-15 East, a distance of 662.8068
- Thence South 37-57-12 East, a distance of 682.2970
- Thence South 44-35-54 East, a distance of 598.8896
- Thence South 31-20-45 East, a distance of 1101.0137
- Thence South 37-47-48 East, a distance of 1333.2990
- Thence South 55-04-55 East, a distance of 865.4271
- Thence South 61-29-59 East, a distance of 379.0620
- Thence South 66-22-49 East, a distance of 339.4363
- Thence South 42-07-01 East, a distance of 362.8961
- Thence South 59-20-26 East, a distance of 310.8241
- Thence North 44-35-20 West, a distance of 271.0057
- Thence North 27-14-21 West, a distance of 679.4763
- Thence North 09-26-25 West, a distance of 669.1250
- Thence North 15-50-43 West, a distance of 716.4738
- Thence North 22-47-41 West, a distance of 436.5304
- Thence North 20-37-42 West, a distance of 399.1550
- Thence North 05-56-49 West, a distance of 259.3960
- Thence North 12-05-28 West, a distance of 264.3646
- Thence North 14-27-19 East, a distance of 118.1782
- Thence North 50-21-25 East, a distance of 158.1102
- Thence North 65-13-15 East, a distance of 328.2188
- Thence North 82-49-41 East, a distance of 264.3181
- Thence South 84-49-29 East, a distance of 420.5895
- Thence South 77-19-12 East, a distance of 411.1524
- Thence South 62-03-23 East, a distance of 453.0744
- Thence South 53-30-14 East, a distance of 237.5929
- Thence South 57-59-51 East, a distance of 266.6488
- Thence South 66-45-48 East, a distance of 360.0835
- Thence South 74-02-50 East, a distance of 326.3171
- Thence South 70-08-39 East, a distance of 314.8424
- Thence South 63-01-30 East, a distance of 234.3736
- Thence South 35-38-22 East, a distance of 237.4798

## Exhibit C – Description of the Basin

57	Thence South 42-04-07 East, a distance of 284.3200
58	Thence South 48-59-46 East, a distance of 322.1632
59	Thence South 55-05-28 East, a distance of 338.9985
60	Thence South 76-41-52 East, a distance of 627.2030
61	Thence South 80-50-12 East, a distance of 689.1699
62	Thence South 68-34-43 East, a distance of 243.1736
63	Thence South 51-17-14 East, a distance of 422.9187
64	Thence South 23-13-07 East, a distance of 305.0162
65	Thence South 17-07-37 East, a distance of 348.0598
66	Thence South 20-36-34 East, a distance of 243.2560
67	Thence South 77-20-44 East, a distance of 411.1112
68	Thence North 88-22-32 East, a distance of 489.4467
69	Thence South 89-35-23 East, a distance of 209.5054
70	Thence South 77-48-51 East, a distance of 428.1470
71	Thence South 46-33-41 East, a distance of 358.4156
72	Thence South 54-02-09 East, a distance of 300.5375
73	Thence North 76-21-42 East, a distance of 288.1242
74	Thence North 17-30-54 East, a distance of 237.5765
75	Thence North 16-48-48 East, a distance of 309.4149
76	Thence North 34-06-01 East, a distance of 125.9718
77	Thence North 84-56-56 East, a distance of 368.4308
78	Thence South 89-35-24 East, a distance of 227.1308
79	Thence South 79-15-43 East, a distance of 390.4622
80	Thence South 89-35-24 East, a distance of 751.1442
81	Thence North 68-02-21 East, a distance of 321.0451
82	Thence North 76-24-34 East, a distance of 144.1615
83	Thence North 82-57-46 East, a distance of 405.0514
84	Thence North 77-54-02 East, a distance of 322.0287
85	Thence South 66-25-23 East, a distance of 265.9506
86	Thence South 68-58-41 East, a distance of 149.3127
87	Thence North 54-52-10 East, a distance of 300.6385
88	Thence North 29-27-12 East, a distance of 179.7287
89	Thence North 56-43-55 East, a distance of 251.9098
90	Thence South 81-28-20 East, a distance of 370.4709
91	Thence South 78-57-07 East, a distance of 284.3959
92	Thence South 67-47-29 East, a distance of 470.2621
93	Thence South 83-24-48 East, a distance of 650.0405
94	Thence South 87-51-03 East, a distance of 576.6556
95	Thence North 81-40-49 East, a distance of 229.7933
96	Thence South 89-34-59 East, a distance of 524.0139
97	Thence South 80-08-29 East, a distance of 424.8993
98	Thence South 68-58-59 East, a distance of 149.1738
99	Thence South 85-18-12 East, a distance of 700.7279
100	Thence North 69-21-28 East, a distance of 243.2410
101	Thence North 83-18-13 East, a distance of 140.9616
102	Thence North 87-02-55 East, a distance of 297.3945
103	Thence South 84-24-08 East, a distance of 385.7145
104	Thence South 73-38-13 East, a distance of 381.5806
105	Thence South 60-46-31 East, a distance of 398.7573
106	Thence South 44-33-51 East, a distance of 197.5537
107	Thence South 44-36-26 East, a distance of 148.2746
108	Thence South 80-51-20 East, a distance of 229.6689
109	Thence South 77-41-23 East, a distance of 339.1733
110	Thence South 80-08-20 East, a distance of 106.1940
111	Thence South 74-17-21 East, a distance of 199.1918
112	Thence South 63-03-57 East, a distance of 156.1926

## Exhibit C – Description of the Basin

113	Thence South 89-35-24 East, a distance of 139.7536
114	Thence North 69-52-16 East, a distance of 149.1074
115	Thence South 74-22-05 East, a distance of 199.2446
116	Thence South 54-02-09 East, a distance of 150.2688
117	Thence South 57-32-02 East, a distance of 164.7486
118	Thence South 80-08-39 East, a distance of 212.5112
119	Thence South 81-28-20 East, a distance of 246.9807
120	Thence South 57-34-32 East, a distance of 164.8208
121	Thence South 59-51-45 East, a distance of 281.7053
122	Thence South 49-18-45 East, a distance of 297.3849
123	Thence South 53-35-18 East, a distance of 237.6448
124	Thence South 41-33-00 East, a distance of 235.0086
125	Thence South 49-00-08 East, a distance of 483.1160
126	Thence South 55-49-43 East, a distance of 125.8518
127	Thence South 44-35-25 East, a distance of 123.5701
128	Thence South 44-36-30 East, a distance of 271.6237
129	Thence South 44-36-10 East, a distance of 197.5973
130	Thence South 31-11-39 East, a distance of 266.6825
131	Thence South 29-50-24 East, a distance of 242.6743
132	Thence South 26-09-18 East, a distance of 273.3663
133	Thence South 28-55-20 East, a distance of 320.7559
134	Thence South 44-37-15 East, a distance of 247.0063
135	Thence South 39-21-54 East, a distance of 136.3797
136	Thence South 39-30-43 East, a distance of 1115.9357
137	Thence South 56-57-13 East, a distance of 518.5041
138	Thence South 32-18-58 East, a distance of 290.6424
139	Thence South 54-36-52 East, a distance of 213.2716
140	Thence South 47-36-34 East, a distance of 234.9146
141	Thence South 44-35-24 East, a distance of 172.8920
142	Thence South 35-05-29 East, a distance of 150.2478
143	Thence South 59-20-24 East, a distance of 242.6739
144	Thence South 59-19-30 East, a distance of 242.5664
145	Thence South 89-35-24 East, a distance of 139.7536
146	Thence South 89-35-24 East, a distance of 139.7536
147	Thence South 89-35-23 East, a distance of 52.3763
148	Thence North 67-16-06 East, a distance of 132.9522
149	Thence North 00-24-32 East, a distance of 52.5643
150	Thence North 33-16-47 West, a distance of 62.8730
151	Thence North 58-37-01 West, a distance of 203.6710
152	Thence North 47-58-30 West, a distance of 210.3380
153	Thence North 50-17-39 West, a distance of 248.1038
154	Thence North 41-34-22 West, a distance of 235.0915
155	Thence North 35-34-47 West, a distance of 237.6102
156	Thence North 52-44-11 West, a distance of 261.9812
157	Thence North 49-21-11 West, a distance of 297.5341
158	Thence North 49-21-20 West, a distance of 297.3572
159	Thence North 44-34-50 West, a distance of 271.7576
160	Thence North 38-15-35 West, a distance of 335.4983
161	Thence North 27-27-57 West, a distance of 336.0671
162	Thence North 50-30-00 West, a distance of 360.1165
163	Thence North 21-23-39 West, a distance of 470.1461
164	Thence North 10-11-56 West, a distance of 284.4954
165	Thence North 07-44-11 West, a distance of 246.9982
166	Thence North 19-33-17 West, a distance of 204.2826
167	Thence North 41-52-09 West, a distance of 259.7636
168	Thence North 63-00-09 West, a distance of 429.5609

## Exhibit C – Description of the Basin

169	Thence North 43-07-25 West, a distance of 481.8419
170	Thence North 42-44-17 West, a distance of 382.9316
171	Thence North 28-24-46 West, a distance of 398.7864
172	Thence North 28-23-07 West, a distance of 398.6130
173	Thence North 38-46-12 West, a distance of 608.4346
174	Thence North 72-21-04 West, a distance of 530.2057
175	Thence North 77-53-41 West, a distance of 517.3797
176	Thence North 84-31-51 West, a distance of 596.0885
177	Thence North 68-33-48 West, a distance of 486.5318
178	Thence North 67-12-28 West, a distance of 642.2768
179	Thence North 76-42-02 West, a distance of 627.0671
180	Thence North 60-32-28 West, a distance of 899.1237
181	Thence North 75-54-13 West, a distance of 665.1543
182	Thence North 66-23-19 West, a distance of 665.0515
183	Thence North 80-51-29 West, a distance of 459.4613
184	Thence North 74-27-13 West, a distance of 669.4943
185	Thence North 63-02-06 West, a distance of 312.4704
186	Thence North 73-53-13 West, a distance of 580.5569
187	Thence North 76-51-43 West, a distance of 555.1563
188	Thence North 72-03-23 West, a distance of 347.9228
189	Thence North 71-08-13 West, a distance of 497.2030
190	Thence North 69-01-58 West, a distance of 746.1565
191	Thence North 46-26-06 West, a distance of 382.9739
192	Thence North 55-28-34 West, a distance of 654.0611
193	Thence North 65-37-13 West, a distance of 516.0126
194	Thence North 73-38-41 West, a distance of 508.7107
195	Thence North 70-36-46 West, a distance of 591.0123
196	Thence North 69-01-55 West, a distance of 447.6429
197	Thence North 64-48-32 West, a distance of 1750.7575
198	Thence North 68-24-13 West, a distance of 917.8053
199	Thence North 68-02-33 West, a distance of 1427.2827
200	Thence North 64-07-22 West, a distance of 1625.0677
201	Thence North 43-46-42 West, a distance of 876.7911
202	Thence North 47-49-40 West, a distance of 655.7561
203	Thence North 61-41-57 West, a distance of 335.8997
204	Thence North 51-42-49 West, a distance of 199.2231
205	Thence North 48-40-34 West, a distance of 346.7099
206	Thence North 47-34-33 West, a distance of 235.0408
207	Thence North 36-26-36 West, a distance of 174.6548
208	Thence North 09-53-20 East, a distance of 106.2668
209	Thence South 78-41-19 East, a distance of 462.3561
210	Thence South 74-50-24 East, a distance of 343.1933
211	Thence South 79-53-51 East, a distance of 726.5141
212	Thence South 82-28-31 East, a distance of 422.3874
213	Thence North 74-29-44 East, a distance of 254.3821
214	Thence North 67-11-37 East, a distance of 399.0744
215	Thence North 60-41-37 East, a distance of 281.6756
216	Thence North 79-05-27 East, a distance of 445.1700
217	Thence North 00-26-51 East, a distance of 192.0059
218	Thence North 31-36-58 West, a distance of 164.7668
219	Thence North 80-07-13 West, a distance of 637.4534
220	Thence North 79-17-00 West, a distance of 585.8427
221	Thence North 83-52-06 West, a distance of 702.1421
222	Thence North 81-40-22 West, a distance of 634.8176
223	Thence North 71-46-52 West, a distance of 513.7552
224	Thence North 78-48-11 West, a distance of 746.7136

## Exhibit C – Description of the Basin

225	Thence North 70-26-56 West, a distance of 905.9868
226	Thence North 65-52-49 West, a distance of 2823.3710
227	Thence North 52-03-27 West, a distance of 1519.7285
228	Thence North 36-15-37 West, a distance of 1023.5333
229	Thence North 28-50-12 West, a distance of 1501.3573
230	Thence North 03-16-40 East, a distance of 699.5825
231	Thence North 40-00-38 East, a distance of 657.5376
232	Thence North 55-55-24 East, a distance of 339.1029
233	Thence North 56-42-53 East, a distance of 377.8643
234	Thence North 26-59-25 East, a distance of 312.6105
235	Thence North 71-58-47 East, a distance of 497.0045
236	Thence North 80-06-42 East, a distance of 585.9547
237	Thence South 87-23-25 East, a distance of 454.3462
238	Thence North 42-41-35 East, a distance of 519.3043
239	Thence North 65-30-29 East, a distance of 539.2736
240	Thence North 85-13-27 East, a distance of 192.9198
241	Thence South 77-48-22 East, a distance of 428.1601
242	Thence South 79-18-05 East, a distance of 195.2692
243	Thence North 69-51-14 East, a distance of 298.5136
244	Thence North 28-19-28 East, a distance of 335.9044
245	Thence North 31-22-11 East, a distance of 305.6825
246	Thence North 56-01-15 East, a distance of 402.0238
247	Thence North 82-39-26 East, a distance of 387.8052
248	Thence North 78-08-24 East, a distance of 411.1519
249	Thence North 60-22-03 East, a distance of 383.3919
250	Thence North 59-26-14 East, a distance of 203.6705
251	Thence North 05-12-58 East, a distance of 210.3711
252	Thence North 54-35-53 West, a distance of 426.4772
253	Thence North 11-40-50 West, a distance of 250.0533
254	Thence North 49-48-05 East, a distance of 161.0345
255	Thence North 48-23-44 East, a distance of 235.0392
256	Thence North 00-24-37 East, a distance of 174.5675
257	Thence North 23-13-24 West, a distance of 304.9592
258	Thence North 70-45-15 East, a distance of 259.7676
259	Thence South 78-49-18 East, a distance of 373.3326
260	Thence South 72-19-46 East, a distance of 530.4007
261	Thence North 68-01-44 East, a distance of 321.0687
262	Thence North 61-21-05 East, a distance of 179.8988
263	Thence North 15-39-15 East, a distance of 199.2007
264	Thence North 00-24-37 East, a distance of 174.5675
265	Thence North 09-52-20 West, a distance of 195.3932
266	Thence North 38-41-05 West, a distance of 359.9806
267	Thence North 38-15-35 West, a distance of 335.4983
268	Thence North 24-47-03 West, a distance of 328.3020
269	Thence North 18-01-30 West, a distance of 220.9698
270	Thence North 00-27-21 East, a distance of 157.1300
271	Thence North 24-36-33 West, a distance of 289.0680
272	Thence North 26-08-49 West, a distance of 195.4380
273	Thence North 37-10-21 West, a distance of 286.5286
274	Thence North 71-10-31 West, a distance of 276.0141
275	Thence North 89-35-24 West, a distance of 366.7594
276	Thence North 47-18-37 West, a distance of 259.8516
277	Thence North 02-26-15 West, a distance of 349.7545
278	Thence North 02-27-48 West, a distance of 125.0526
279	Thence North 02-27-50 West, a distance of 78.5106
280	Thence North 02-27-01 West, a distance of 146.1957



## Exhibit C – Description of the Basin

281	Thence North 05-17-26 West, a distance of 351.1208
282	Thence North 29-50-24 West, a distance of 242.6743
283	Thence North 87-54-29 West, a distance of 594.1460
284	Thence South 25-25-45 West, a distance of 289.0690
285	Thence South 07-33-35 West, a distance of 54.1577
286	Thence South 07-31-36 West, a distance of 368.3617
287	Thence South 15-40-43 West, a distance of 398.2550
288	Thence South 21-34-12 West, a distance of 580.7325
289	Thence South 17-07-05 West, a distance of 546.9813
290	Thence South 18-03-11 West, a distance of 403.3575
291	Thence South 25-37-23 West, a distance of 328.0751
292	Thence South 34-42-09 West, a distance of 465.0331
293	Thence South 25-01-48 West, a distance of 461.1868
294	Thence South 54-23-57 West, a distance of 475.1916
295	Thence South 69-37-52 West, a distance of 541.7496
296	Thence North 73-56-54 West, a distance of 453.4280
297	Thence North 48-34-43 West, a distance of 532.4290
298	Thence North 28-23-07 West, a distance of 398.6121
299	Thence North 54-35-53 West, a distance of 426.4777
300	Thence North 16-41-42 West, a distance of 237.5764
301	Thence North 12-06-59 West, a distance of 322.1772
302	Thence North 33-16-47 West, a distance of 251.7194
303	Thence North 60-46-31 West, a distance of 398.7569
304	Thence North 40-31-06 West, a distance of 346.7031
305	Thence North 29-18-46 West, a distance of 281.6207
306	Thence North 31-34-49 West, a distance of 329.6291
307	Thence North 65-37-55 West, a distance of 344.1602
308	Thence North 33-16-48 West, a distance of 314.8173
309	Thence North 40-10-53 West, a distance of 160.9938
310	Thence South 48-09-08 West, a distance of 259.5913
311	Thence South 05-10-56 West, a distance of 210.3598
312	Thence South 01-52-06 East, a distance of 437.1073
313	Thence South 17-14-28 East, a distance of 403.1796
314	Thence South 16-17-52 East, a distance of 546.9801
315	Thence South 17-24-29 East, a distance of 513.9131
316	Thence South 44-35-54 East, a distance of 296.2405
317	Thence South 40-10-11 East, a distance of 322.2593
318	Thence South 35-07-29 East, a distance of 300.4644
319	Thence South 31-25-13 East, a distance of 596.0948
320	Thence South 27-28-50 East, a distance of 335.9003
321	Thence South 04-21-44 East, a distance of 210.3594
322	Thence South 42-01-35 West, a distance of 210.4263
323	Thence South 45-23-50 West, a distance of 197.5089
324	Thence South 52-08-16 West, a distance of 422.9006
325	Thence South 45-24-36 West, a distance of 469.3541
326	Thence South 70-25-56 West, a distance of 408.8638
327	Thence South 66-59-15 West, a distance of 571.0711
328	Thence South 33-18-10 West, a distance of 353.7851
329	Thence South 37-17-32 West, a distance of 349.2845
330	Thence South 49-29-46 West, a distance of 346.7099
331	Thence South 65-13-51 West, a distance of 328.1924
332	Thence South 55-43-12 West, a distance of 276.0820
333	Thence South 59-26-46 West, a distance of 407.4482
334	Thence South 55-41-57 West, a distance of 385.3996
335	Thence South 74-49-34 West, a distance of 746.6568
336	Thence South 88-29-17 West, a distance of 502.1748

## Exhibit C – Description of the Basin

337 Thence North 70-28-56 West, a distance of 460.1936  
338 Thence North 69-36-20 West, a distance of 783.2207  
339 Thence North 43-33-28 West, a distance of 939.4676  
340 Thence South 90-00-00 East, a distance of 0.0000  
341 to the point of beginning.  
342  
343  
344 Perimeter: 140686.1563  
345  
346 Area: 191218952.8402            4389.7831 acres

Exhibit C – Description of the Basin  
(Continued)

**Legal Description for Intake Sub-basin**

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Beginning at a point lying North 03-03-37 East, a distance of 8693.42 feet from the north one quarter corner of Section 7, Township 5 South, Range 1 East, S.B.B. & M.:

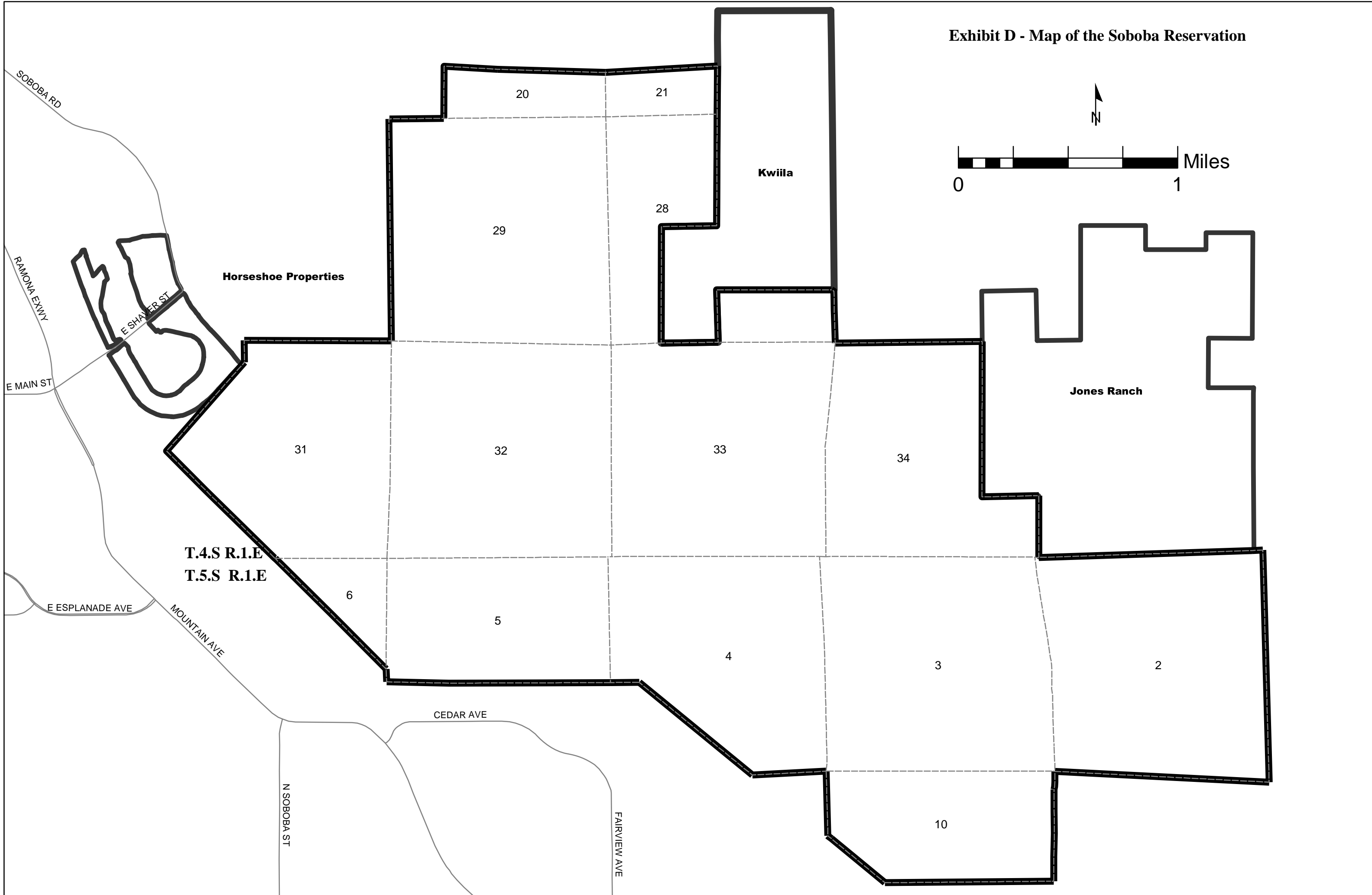
- Thence North 43-33-19 West, a distance of 1036.0201
- Thence North 40-54-46 West, a distance of 2583.7541
- Thence North 31-11-35 West, a distance of 1531.8376
- Thence North 29-04-17 West, a distance of 883.9252
- Thence North 09-00-43 East, a distance of 1454.7700
- Thence North 54-11-24 West, a distance of 779.7834
- Thence North 87-31-53 West, a distance of 469.5258
- Thence South 14-02-10 West, a distance of 1192.3299
- Thence South 19-44-49 West, a distance of 1658.1895
- Thence South 20-33-22 West, a distance of 1709.5454
- Thence South 30-34-45 West, a distance of 1022.5993
- Thence South 37-11-05 West, a distance of 1456.6566
- Thence South 37-20-58 West, a distance of 1912.8988
- Thence South 36-19-37 West, a distance of 1688.8119
- Thence South 47-17-26 West, a distance of 1415.9609
- Thence South 51-20-25 West, a distance of 1024.9459
- Thence South 62-35-33 West, a distance of 1217.0825
- Thence South 67-50-01 West, a distance of 1166.6981
- Thence South 53-21-57 West, a distance of 2545.3471
- Thence South 51-32-23 East, a distance of 1521.6193
- Thence South 52-06-41 East, a distance of 3640.2127
- Thence South 54-16-42 East, a distance of 2832.0686
- Thence South 54-45-45 East, a distance of 8093.9477
- Thence South 66-45-32 East, a distance of 1985.2225
- Thence South 63-00-45 East, a distance of 1076.6119
- Thence South 57-44-44 East, a distance of 10768.6202
- Thence South 52-42-56 East, a distance of 2888.8756
- Thence South 55-53-51 East, a distance of 6249.5878
- Thence South 52-42-56 East, a distance of 2888.8756
- Thence South 53-45-11 East, a distance of 2138.0014
- Thence South 64-43-22 East, a distance of 2206.1030
- Thence North 46-42-44 West, a distance of 156.7825
- Thence North 44-35-15 West, a distance of 405.2711
- Thence North 46-18-48 West, a distance of 669.1426
- Thence North 37-52-35 West, a distance of 693.8574
- Thence North 34-17-42 West, a distance of 906.2395
- Thence North 33-57-07 West, a distance of 659.8059
- Thence North 44-35-16 West, a distance of 608.0830
- Thence North 46-47-40 West, a distance of 1054.3274
- Thence North 48-19-10 West, a distance of 1868.4824
- Thence North 56-06-31 West, a distance of 2130.4779
- Thence North 66-07-44 West, a distance of 1655.6256
- Thence North 58-12-53 West, a distance of 1376.2780
- Thence North 41-24-29 West, a distance of 730.8163
- Thence North 41-13-30 West, a distance of 345.0212
- Thence North 26-08-55 West, a distance of 384.6138
- Thence North 13-37-46 West, a distance of 354.3535
- Thence North 41-34-35 West, a distance of 385.5755
- Thence North 42-50-20 West, a distance of 669.1777

Exhibit C – Description of the Basin  
(Continued)

57	Thence North 50-29-55 West, a distance of 1181.6210
58	Thence North 31-24-48 West, a distance of 978.2580
59	Thence North 26-09-14 West, a distance of 704.9949
60	Thence North 08-33-23 West, a distance of 551.1343
61	Thence North 10-42-42 East, a distance of 640.9180
62	Thence North 35-06-54 East, a distance of 453.0875
63	Thence North 45-23-44 East, a distance of 243.3389
64	Thence North 52-32-18 East, a distance of 326.7674
65	Thence North 00-25-00 East, a distance of 171.8795
66	Thence North 34-34-34 West, a distance of 349.7803
67	Thence North 44-35-13 West, a distance of 337.0774
68	Thence North 59-20-26 West, a distance of 310.8241
69	Thence North 42-07-01 West, a distance of 362.8961
70	Thence North 66-22-49 West, a distance of 339.4363
71	Thence North 61-29-59 West, a distance of 379.0620
72	Thence North 55-04-55 West, a distance of 865.4271
73	Thence North 37-47-48 West, a distance of 1333.2990
74	Thence North 31-20-45 West, a distance of 1101.0137
75	Thence North 44-35-54 West, a distance of 598.8896
76	Thence North 37-57-12 West, a distance of 682.2970
77	Thence North 41-51-15 West, a distance of 662.8068
78	Thence North 53-45-51 West, a distance of 494.8303
79	Thence North 45-42-20 West, a distance of 804.0414
80	Thence North 46-45-44 West, a distance of 1246.0249
81	Thence North 26-09-14 West, a distance of 249.2721
82	Thence North 17-13-52 West, a distance of 1029.1928
83	Thence North 16-05-57 West, a distance of 627.4825
84	Thence North 21-23-19 West, a distance of 960.3948
85	Thence North 10-53-51 West, a distance of 909.1444
86	Thence North 09-47-36 West, a distance of 1132.4407
87	Thence North 14-50-24 West, a distance of 1778.9616
88	Thence North 24-22-09 West, a distance of 638.3066
89	Thence North 18-48-47 West, a distance of 1015.1730
90	Thence North 21-07-46 West, a distance of 910.5965
91	Thence North 31-35-33 West, a distance of 630.8741
92	Thence North 27-28-23 West, a distance of 428.6517
93	Thence North 20-26-50 West, a distance of 500.9370
94	Thence North 33-29-10 West, a distance of 1188.9727
95	Thence South 90-00-00 East, a distance of 0.0000
96	to the point of beginning.
97	
98	
99	Perimeter: 115214.4657
100	
101	Area: 308717524.7511                      7087.1792 acres



Exhibit D - Map of the Soboba Reservation



## Exhibit E – Principles for Water Management

### PRINCIPLES FOR WATER MANAGEMENT

1. Water Management Plan. These Principles, approved by the appropriate authority of each party, are intended to form the basis from which the parties will develop a Water Management Plan (“Management Plan”) for the area described in Section 2. The Management Plan is being developed to ensure an adequate and reliable source of future water supply. The Management Plan is also intended to facilitate and accommodate a settlement of the claims of the Soboba Band of Luiseno Indians (“Soboba Tribe”).
2. Management Area. The area included in the Management Plan consists of the Canyon Sub-basin and the San Jacinto Upper Pressure Sub-basin, downstream to Bridge Street, and the Hemet Basins (“Management Area”). The Management Area is shown upon the attached map.
3. Pumpers within the Management Area. The primary pumpers within the Management Area are: Eastern Municipal Water District (“Eastern”), Lake Hemet Municipal Water District (“Lake Hemet”), City of San Jacinto (“San Jacinto”), and City of Hemet (“Hemet”) (individually

## Exhibit E – Principles for Water Management

“Public Agency,” collectively “Public Agencies”); the Soboba Tribe (not a Management Plan participant); and approximately 62 individual agricultural and other private pumpers who pump more than 25 acre-feet per year (“Private Pumpers”).

4. Goals. The parties agree that the Management Plan shall incorporate and serve to implement the following goals:

A. Allowing for Future Urban Growth. The parties acknowledge that the Management Area will continue to experience residential, commercial, and industrial growth and development, and that existing water production and service systems will need to be expanded to meet this growth. It is estimated that at least 15,000 afy incremental water supply capacity over the existing base production rights of the Public Agencies must be dedicated to adequately serve this growth. The Management Plan should serve and provide a clear planning process so that each affected Public Agency will be able to meet these projected growth needs.



## **Exhibit E – Principles for Water Management**

B. Water Quality Protection. Implementation of the Management Plan should protect and/or enhance Management Area water quality. However, implementation of certain elements of the Management Plan may cause limited localized water quality degradation. If such degradation impedes the then current beneficial use of any Public Agency in the Management Area, the Watermaster described in Section 22 (“Watermaster”) shall implement appropriate mitigation measures to ensure water supply to the affected Public Agency and bear the associated costs. The standards for local water quality degradation shall be defined in the Management Plan.

C. Cost-Effective Management. The Management Plan should serve to support the pursuit of cost-effective water supply and water treatment by the Public Agencies, both individually and collectively.

D. Overdraft. The groundwater levels within the Management Area have generally been declining for a number of years, and the Management Area is presently in a condition of overdraft. It is recognized that the Management Plan will, within a reasonable period, eliminate groundwater overdraft and enhance operational yield by

## **Exhibit E – Principles for Water Management**

implementing a combination of available water resources management elements. These elements include: reduction in native groundwater production; enhanced recharge with native, imported and/or recycled water; development of supplemental supplies such as imported and recycled water; and water conservation programs.

E. Monitoring. The Watermaster shall implement a monitoring program to ensure the Management Plan activities follow best management and engineering principles to protect Management Area water resources.

5. Public Agencies Base Production Rights.

A. The base production rights of Eastern, Lake Hemet and Hemet in the first year of the Management Plan shall be based upon their average production for calendar years 1995-1999. This period was chosen to reflect these Public Agencies' recent pumping, and shall determine their base production rights.

## **Exhibit E – Principles for Water Management**

B. The base production right of San Jacinto in the first year of the Management Plan, shall be based upon its average production for calendar years 1995-1999, plus 500 afy. The 500 afy is added because San Jacinto's recent production does not reflect its historic production because of water purchases and other factors.

C. Pursuant to Section 21 below, for the life of the Management Plan, Hemet and San Jacinto shall each add an additional 900 afy to their base production rights. The additional 900 afy shall not be subject to reduction by the Watermaster as provided in Section 5.D and shall not be subject to any Administrative or Replenishment Assessments as provided in Section 6, or other fee or charge imposed under the Management Plan.

D. It is the goal of the Management Plan to adjust base production rights over time to a level consistent with the Watermaster's calculation of the Public Agencies' share of safe yield for the Management Area. Based on current information, it appears that the total reduction in base production rights will need to be approximately 35%. The ultimate reduction will be based on periodic demand, hydrology, recharge and

## Exhibit E – Principles for Water Management

availability of imported water. In order to implement this reduction in a phased manner, each Public Agency's base production rights shall be subject to adjustment as follows:

(1) A 10% reduction from the base production rights in the first year of the Management Plan; and

(2) Until base production rights are consistent with the Public Agencies' share of safe yield, Watermaster shall determine the reductions in base production rights in each subsequent year of the Management Plan, to achieve this goal within 6 years of approval of the Management Plan. Each reduction shall not be more than 10% of the base production right of the prior year.

(3) Pursuant to Section 7(A)(2)(b), upon conversion of a Class B Participant's land from agricultural to a use that requires water service from a Public Agency, the Public Agency shall receive an increase in its base production rights equal to the adjusted base production right of the Class B Participant.

## Exhibit E – Principles for Water Management

6. Public Agency Production Assessments. The Public Agency production will be subject to the following assessments:

A. An Administrative Assessment on each acre-foot pumped by a Public Agency up to its adjusted base production right. The parties contemplate that the Administrative Assessment will be \$50.00 per acre-foot of water pumped in the first year of the Management Plan, and that such amount will thereafter be set by the Watermaster.

B. A Replenishment Assessment on each acre-foot pumped by a Public Agency in excess of its adjusted base production right equal to the cost of providing a like quantity of supplemental water to recharge the Management Area, including recharge losses. Pumping by a Public Agency in excess of its adjusted base production right in order to meet increasing demands is expected and permissible, provided that such excess extractions shall be subject to the Replenishment Assessment. The costs of providing a like quantity of supplemental water shall include the costs of water, O&M costs of the replenishment system, capital recovery and other administrative costs. Currently, the total of these cost items is estimated to be in the range

## Exhibit E – Principles for Water Management

of \$300 to \$400 per acre-feet; the actual amount will reflect the costs at the time incurred.

7. Private Pumpers Water Rights. The Public Agencies recognize the overlying water rights of the Private Pumpers, and do not intend to take or adversely impact these rights without an agreement with the owner of such rights. The Management Plan will lay out alternatives for the retention, protection, or transfer of such rights, leaving selection of the alternative to the individual overlying water rights owner. A Private Pumper can elect not to participate in the Management Plan and not to formally acknowledge its existence. Such Pumpers shall be referred to herein as “Non-Participants”; such Pumpers shall continue to exercise whatever water rights they may hold under California law unaffected by the Management Plan. There is no intent to affect water use that is consistent with the historical use of the Private Pumpers. However, other pumpers under the Management Plan do not waive their rights to challenge new or expanded water rights. Non-Participants will not have the option of joining the program at a later date. The alternatives available to participants are as follows:

## **Exhibit E – Principles for Water Management**

A. (1) Class A Participation. A Private Pumper can elect to sign a written agreement acknowledging the existence of the Management Plan. Such Pumper shall be a Class A Participant and shall be entitled to vote for and/or be elected to serve as the Private Pumper representative on the Management Plan's governing board or body described in Paragraph 22 below, but shall not otherwise be required to participate in the Management Plan implementation. A Class A Participant may, without any financial assessment by the Watermaster, pump from his/her/its property within the Management Area the amount of water that can be put to reasonable and beneficial use on the Pumper's land as may be authorized under California law. Class A Participants shall have the right to convert to Class B Participation during a grace period that shall end three (3) years after the effective date of the Management Plan, as approved by a judgment of the Superior Court for Riverside County, upon payment of the total assessments the Pumper would have paid had the Pumper elected to be a member of Class B from the outset, plus interest.

(2) Class B Participation. A Private Pumper can become a Class B Participant by electing to limit annual pumping to the Pumper's average annual production during the calendar years 1995 through

## Exhibit E – Principles for Water Management

1999 and to pay replenishment assessments on amounts in excess of that average annual production. A Class B Participant shall enjoy the following benefits of Plan Participation:

- a. Vote for and/or be elected to serve as the Private Pumper's representative on the Management Plan's Governing Board;
- b. Upon conversion of Pumper's land from agricultural use to a use that requires water service from a participating Public Agency, Public Agency shall credit to the extent legally permissible, Pumper or Pumper's successor-in-interest's adjusted production right, using the formula in Section 5 towards satisfaction of any requirement then in effect for water supply assessment requirements. Furthermore, Pumper or Pumper's successor-in-interest shall be given a credit for Pumper's adjusted production right using the formula in Section 5 towards any fees associated with water supply that the Public Agency may then have in effect. The Public Agency serving the converted land shall receive a credit to its production right as set forth in Section 5.



## Exhibit E – Principles for Water Management

c. To the extent the Pumper's land is not covered under Section 7(A)(2)(b), Pumper will be eligible to enter into a contract with the Management Plan, or a participating Public Agency, to sell for a defined period of time some portion of Pumper's adjusted production right, under terms and conditions mutually agreed upon by the Pumper and the Management Plan. Criteria used in consideration of such contract shall include:

(i) Management Plan's need to acquire additional water supplies to address Basin overdraft and recovery;

(ii) Submission of a water conservation plan, including use of in lieu water, by Pumper that will reasonably guarantee conservation of water that would otherwise be produced from the Basin;

(iii) Public policy considerations of local government jurisdictions, including economic and land use impacts of proposed water conservation plan.

## **Exhibit E – Principles for Water Management**

B. In-Lieu Water Use. In the event a Private Pumper (or successor) receives recycled and/or imported water from a Public Agency to serve an overlying use in place of groundwater, or otherwise engages in an in-lieu program, the overlying water right of the Private Pumper (or successor) shall not be diminished by the receipt and use of such recycled and/or imported water or by engaging in an in-lieu program.

C. Well Monitoring. To become a Class A or B Participant, a Private Pumper shall authorize the metering of the Pumper's well(s) and the collection of groundwater level and quality data, and the reading thereof by Management Plan personnel. The metering and reading shall be at no cost to the Pumper, and the Pumper shall receive copies of the reports and information obtained upon request.

D. Future Production Participation. Any new Pumper after the effective date of the Management Plan, as approved by a judgment of the Superior Court for Riverside County, can only participate as a Class A Participant as described in Section 7A(1).

## **Exhibit E – Principles for Water Management**

E. Replacement Wells. The redrilling of existing wells and the drilling of new wells to replace existing wells will not be considered new private production.

8. Capital Facilities. Each Public Agency shall continue to own its existing capital facilities for water management. However, capital facilities may be jointly constructed and owned by the Management Plan. Joint financing of such facilities may be funded by regional capital fees, loans and grants, contributions for storage by The Metropolitan Water District of Southern California (“Metropolitan”) or other third-parties, and municipal bonds. Responsibility for the costs of any existing and future capital facility of the Management Plan should be apportioned among the Public Agencies based on relative benefit to be derived by each Public Agency. Any of the participating Public Agencies may propose projects to be included in the Management Plan to increase Management Area water supply. Such proposals, after evaluation by the Watermaster, shall be included or rejected. If the Watermaster chooses to reject the proposal, the proposing Public Agency may implement the rejected project as long as it does not significantly impact the implementation of the Management Plan and/or interfere with the ongoing production by the Public Agencies.

## Exhibit E – Principles for Water Management

9. Soboba Tribe's Water Rights. The Soboba Tribe's water rights shall be determined as part of a settlement among the Soboba Tribe, the United States, Eastern, Lake Hemet and Metropolitan. Major points of the proposed settlement are:

A. The Soboba Tribe shall have a senior, prior right in the Canyon and San Jacinto Upper Pressure Sub-basins of 9000 afy, but its use shall be limited to a maximum of 4100 afy during the first 50 years after the effective date of the settlement.

B. The Soboba Tribe shall have the right to purchase replenishment water for use pursuant to the Principles of Settlement at the Management Plan replenishment rate.

C. The Soboba settlement provides that, among other things, Metropolitan will use its best efforts to deliver sufficient water to yield a 15-year average of 7,500 afy to the Management Plan until 2035 at its long-term interruptible rate (currently \$233/af).

## **Exhibit E – Principles for Water Management**

D. Subject to full funding of the settlement by the United States, the Management Plan shall pay the Soboba Tribe \$10 million.

E. The Management Plan will also pay the Soboba Tribe \$7 million. A Public Agency's payment of its share of this amount is optional, but in order to obtain the benefits of the low-cost Metropolitan water delivered pursuant to the settlement, a Public Agency shall pay its share of this amount.

F. The Management Plan will receive \$10 million for capital improvements from the United States, and all unused Soboba Tribe water based on the Public Agency's participation in the payment in Section 9(E) above.

10. Implementation of These Principles. These Interim Principles for Water Management shall be used by the parties as a basis for the preparation of the Management Plan, and a stipulated judgment in a water rights adjudication. As explained below, the Management Plan shall be administered by the Watermaster. The Watermaster will be under the continuing jurisdiction of the Court.

## **Exhibit E – Principles for Water Management**

11. Assessment Program. The assessment program contemplated by the Management Plan shall be administered by the Watermaster subject to the governance provisions herein. All payments shall be made to the Watermaster and shall be maintained in a separate restricted fund. All assessments shall be used exclusively to acquire imported, recycled or Metropolitan water for the recharge of the Management Area, and for the facilities and operational and administrative expenses associated with the assessment and recharge programs. Subject to Management Plan approval, assessments may also be used by affected parties to acquire and deliver water for direct use by the parties, in lieu of pumping.

12. Replenishment Program. The replenishment program contemplated by the Management Plan shall also be administered by the Watermaster. The program shall include: the acquisition of supplemental water supplies (including imported, recycled and Soboba Tribe water); the expenditure of assessments; the recharge of the Management Area; and the construction and operation of all necessary facilities, including but not limited to, development of surface and sub-surface percolation and injection facilities. Priority for replenishment will be based on an equitable

## Exhibit E – Principles for Water Management

apportionment of available replenishment water among the sub-basins after full consideration of: the Public Agency's participation in the payment in Section 9(E) above; the Management Area conditions; water demands; the availability of storage capacity to accommodate the recharge of natural flows; the availability of appropriate conveyance facilities; and the availability of replenishment or imported water. The Watermaster is encouraged to take advantage of surplus imported water that occasionally may be available at low cost, and to use available assessment funds to bank such recharge against future pumping in excess of adjusted production rights.

13. Rights to Groundwater. Groundwater in the Management Area may occur from: natural recharge; spreading operations of natural flows; replenishment with imported, recycled or Metropolitan water acquired with assessment funds; or in-lieu recharge programs financed with assessment funds. All such groundwater shall be available to support the pumping of the parties as allowed herein, and shall not be the property of any individual party, subject to the provisions of Section 14.

## Exhibit E – Principles for Water Management

14. Storage Rights. The parties recognize that unused storage capacity exists in the Management Area, and the Management Plan contemplates that this capacity will be managed conjunctively with available imported and recycled water supplies. Subject to availability of the Management Plan fund for assessments and unused storage capacity as determined by Watermaster, the Management Area will be recharged and water stored therein when such supplies are available, and drawn upon by the Public Agencies in dry years when such supplemental water supplies may not be available. In addition, unused storage capacity as determined by Watermaster may be used for “put and take” operations of recycled or imported water that is paid for by any party to the Management Plan provided that:

A. Such operations do not interfere with the rights of any other pumper, or with the use of the storage capacity for recharge and storage under the Management Plan;

B. Water available for recharge is purchased first, as needed, for the Management Plan;



## Exhibit E – Principles for Water Management

C. Later recovery of stored water shall exclude losses; and

D. Such recovered water may be used anywhere within the service area of the party.

Any conjunctive use programs for the benefit of territory outside of the Management Area shall be subject to the governance provisions herein. Any storage, conjunctive use programs by third parties or in-lieu recharge programs financed with assessment funds shall be subject to the governance provisions herein.

15. Spreading Operations. The Public Agencies shall independently or jointly operate their respective facilities to maximize the existing spreading and recharge operations of natural flow in the Management Area.

16. Recharge Water Quality. Consistent with Section 4(E) above all water used to replenish any sub-basin in the Management Area shall meet the Regional Water Quality Control Board requirements, and may be used in any sub-basin where such requirements are met.

## Exhibit E – Principles for Water Management

17. Recharge Losses. The accounting for storage recharge of the Management Area shall not include any water that escapes therefrom and migrates downstream beyond the Management Area. Losses will be calculated based upon best engineering principles.

18. Recycled Water. The use of recycled water can be of substantial benefit in providing additional water in the Management Area. Each Public Agency may implement a recycled water program, including the ownership, operation and construction of all necessary facilities, and the application for and administration of any loan or grant applications. The Management Plan will support loan or grant applications, and the Public Agencies will work to integrate recycled water into the Management Plan to the extent economically feasible while meeting regulatory standards. Subject to existing recycled water contracts, the Management Plan will have a first right of refusal to purchase excess recycled water for recharge. Priority shall be given to Management Area recharge for the use of recycled water which originates therefrom.

19. Export. The Public Agencies may export water outside the Management Area, on a temporary basis, upon approval by the Watermaster.

## Exhibit E – Principles for Water Management

However, any water exported shall be replenished with an appropriate amount of similar or better quality water as determined by Watermaster. Also, water exports by the Public Agencies shall not interfere with the Management Plan or any other Public Agency's operations. The Management Plan will set forth the specific criteria for the export of water, including, but not limited to, conjunctive use programs.

20. Credits. Recharge credits documented before the Management Plan shall be calculated pursuant to the Management Plan. Future recharge credits shall be established by replenishment of water or by not exercising the full, adjusted base production right, and shall be calculated pursuant to the Management Plan.

21. Tunnel Seepage, Stream Diversions, Fruitvale To resolve Eastern's use of Tunnel seepage, Lake Hemet's stream diversions and Eastern's use of Fruitvale water, 900 afy shall be added to Hemet's adjusted base production and 900 afy shall be added to San Jacinto's adjusted base production right as discussed in Section 5 above. This is intended to provide Hemet and San Jacinto a fair share of water from these disputed issues.

## Exhibit E – Principles for Water Management

22. Governance. The Management Plan will be administered by a Watermaster as follows:

A. The governing board of the Watermaster shall consist of one elected official from each of the Public Agencies and one Private Pumper representative selected by the Private Pumpers who participate in the Management Plan. Each member shall have one vote.

B. The Watermaster's duties shall include: determining safe yield; determining replenishment needs; determining annual adjusted base production rights; purchasing and selling imported and recycled water; constructing future capital facilities; establishing assessment rates; initiating necessary conservation and drought management measures; and implementing other responsibilities identified in the Management Plan documents.

Dated: \_\_\_\_\_, 2004.

EASTERN MUNICIPAL WATER  
DISTRICT

By: \_\_\_\_\_

**Exhibit E – Principles for Water Management**

Dated: \_\_\_\_\_, 2004.

LAKE HEMET MUNICIPAL WATER  
DISTRICT

By: \_\_\_\_\_

Dated: \_\_\_\_\_, 2004.

CITY OF HEMET

By: \_\_\_\_\_

Dated: \_\_\_\_\_, 2004.

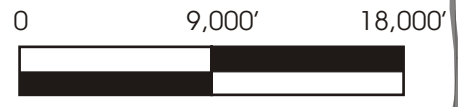
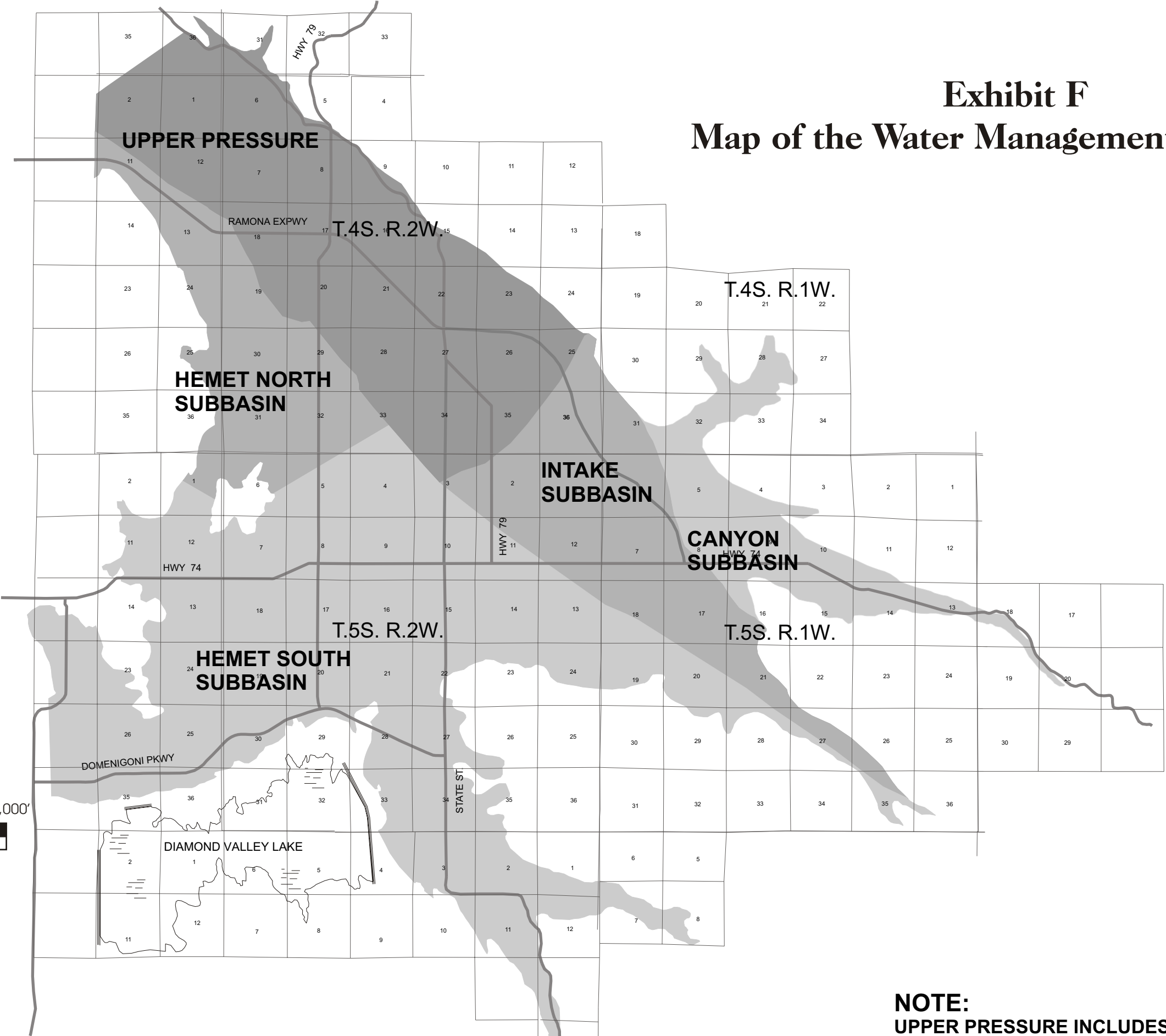
CITY OF SAN JACINTO

By: \_\_\_\_\_



# Exhibit F

## Map of the Water Management Plan Area



**NOTE:**  
UPPER PRESSURE INCLUDES  
INTAKE SUBBASIN



1"=9,000'  
06-02-2004

## Exhibit G – Description of the Water Management Plan Area

### Water Management Plan Area

Beginning at the North quarter Corner of Section 2, Township  
4 South, Range 2 West, S.B.B.& M.:

Thence South 55-09-46 West, a distance of 3086.02  
to the True Point of Beginning;

Thence South 01-57-57 West, a distance of 3159.1491  
Thence South 00-29-02 West, a distance of 429.3273  
Thence South 00-14-26 West, a distance of 1908.6588  
Thence South 01-46-37 West, a distance of 1567.6119  
Thence North 55-21-31 East, a distance of 446.8379  
Thence North 26-23-15 East, a distance of 631.4127  
Thence South 87-18-21 East, a distance of 191.4616  
Thence South 87-17-52 East, a distance of 446.7468  
Thence South 70-03-12 East, a distance of 419.5431  
Thence South 48-59-17 East, a distance of 352.6834  
Thence South 49-46-27 East, a distance of 298.9505  
Thence South 38-14-56 East, a distance of 408.2682  
Thence South 43-41-06 East, a distance of 568.0886  
Thence South 33-24-04 East, a distance of 907.5881  
Thence South 39-40-04 East, a distance of 681.4619  
Thence South 44-35-36 East, a distance of 523.0954  
Thence South 40-05-37 East, a distance of 805.0741  
Thence South 37-55-01 East, a distance of 359.8351  
Thence South 35-20-31 East, a distance of 531.5890  
Thence South 22-00-05 East, a distance of 405.3986  
Thence South 17-22-41 East, a distance of 504.7266  
Thence South 25-17-32 East, a distance of 595.1082  
Thence South 32-14-23 East, a distance of 575.2528  
Thence South 38-11-56 East, a distance of 414.9866  
Thence South 21-26-59 East, a distance of 691.8554  
Thence South 22-44-15 East, a distance of 524.2415  
Thence South 20-38-45 East, a distance of 573.2541  
Thence South 32-15-39 East, a distance of 191.7948  
Thence South 88-14-08 East, a distance of 156.3241  
Thence South 46-34-05 East, a distance of 439.2778  
Thence South 12-36-58 East, a distance of 409.7686  
Thence South 18-19-44 East, a distance of 426.9082  
Thence South 16-24-51 East, a distance of 572.8471  
Thence South 22-07-10 East, a distance of 731.9991  
Thence South 22-31-31 East, a distance of 720.1255  
Thence South 22-41-43 East, a distance of 1039.9629  
Thence South 38-30-56 East, a distance of 426.1504  
Thence South 37-08-43 East, a distance of 350.8795  
Thence South 35-21-27 East, a distance of 265.6921  
Thence South 00-21-06 West, a distance of 692.3260  
Thence South 09-53-35 East, a distance of 427.7983  
Thence South 14-00-56 East, a distance of 460.9092  
Thence South 00-49-47 East, a distance of 353.9741  
Thence South 39-14-44 West, a distance of 334.1122  
Thence North 88-16-13 West, a distance of 312.6425  
Thence North 88-15-40 West, a distance of 327.5258



## Exhibit G – Description of the Water Management Plan Area

Thence South 65-20-48 West, a distance of 211.1187  
Thence South 51-19-16 West, a distance of 262.9182  
Thence North 81-25-48 West, a distance of 270.5204  
Thence North 00-23-36 East, a distance of 254.9440  
Thence North 14-20-10 West, a distance of 196.8810  
Thence North 69-38-37 West, a distance of 331.8501  
Thence North 88-16-15 West, a distance of 312.7674  
Thence South 45-39-54 West, a distance of 220.8974  
Thence South 00-40-33 West, a distance of 158.9491  
Thence South 08-40-14 West, a distance of 373.9607  
Thence South 18-56-44 West, a distance of 166.3231  
Thence South 13-04-14 East, a distance of 219.4350  
Thence South 88-17-54 East, a distance of 208.3419  
Thence South 52-36-50 East, a distance of 454.9685  
Thence South 57-10-41 East, a distance of 307.7555  
Thence South 10-23-15 East, a distance of 271.0676  
Thence South 47-38-04 East, a distance of 488.4199  
Thence South 38-59-11 East, a distance of 489.7587  
Thence South 43-18-04 East, a distance of 225.0918  
Thence South 36-19-43 East, a distance of 1211.7791  
Thence South 00-40-32 West, a distance of 159.0111  
Thence South 15-40-02 East, a distance of 555.4493  
Thence South 32-13-48 East, a distance of 383.6829  
Thence South 34-03-33 East, a distance of 457.3251  
Thence South 06-55-29 West, a distance of 478.9941  
Thence South 11-48-53 West, a distance of 538.4695  
Thence South 04-00-47 East, a distance of 639.4428  
Thence South 57-16-59 West, a distance of 374.5463  
Thence South 59-59-38 West, a distance of 302.6944  
Thence South 45-44-02 West, a distance of 220.8122  
Thence South 40-23-23 West, a distance of 407.4181  
Thence South 27-02-10 West, a distance of 234.5719  
Thence South 18-54-48 West, a distance of 499.3999  
Thence South 18-54-28 West, a distance of 332.9008  
Thence South 08-40-29 West, a distance of 373.7759  
Thence South 11-49-45 West, a distance of 538.4344  
Thence South 00-40-31 West, a distance of 318.1471  
Thence South 00-39-43 West, a distance of 530.0974  
Thence South 30-14-06 West, a distance of 422.2534  
Thence South 31-26-41 West, a distance of 305.2671  
Thence South 77-24-27 West, a distance of 214.1513  
Thence North 25-17-38 West, a distance of 238.1444  
Thence South 35-31-17 West, a distance of 637.9021  
Thence South 39-15-19 West, a distance of 169.0961  
Thence South 39-13-20 West, a distance of 165.0641  
Thence South 39-14-20 West, a distance of 668.3212  
Thence South 30-15-45 West, a distance of 422.1539  
Thence South 06-16-29 West, a distance of 531.8110  
Thence South 18-55-03 West, a distance of 166.5596  
Thence South 21-01-01 West, a distance of 449.2623  
Thence South 27-03-08 West, a distance of 351.8017  
Thence South 31-28-15 West, a distance of 305.2794  
Thence South 45-41-33 West, a distance of 515.4747  
Thence South 77-23-51 West, a distance of 642.2232  
Thence South 85-54-45 West, a distance of 522.5793  
Thence North 82-59-20 West, a distance of 576.5611

## Exhibit G – Description of the Water Management Plan Area

Thence North 64-53-25 West, a distance of 400.6090  
Thence North 66-16-35 West, a distance of 566.0858  
Thence North 38-59-11 West, a distance of 489.7595  
Thence North 32-14-03 West, a distance of 383.4039  
Thence North 20-39-20 West, a distance of 286.6781  
Thence North 43-18-43 West, a distance of 225.0460  
Thence South 18-53-52 West, a distance of 166.3412  
Thence North 88-17-24 West, a distance of 416.8106  
Thence South 04-55-55 East, a distance of 533.6007  
Thence South 51-18-38 East, a distance of 264.5584  
Thence South 16-03-15 East, a distance of 723.6602  
Thence South 34-10-30 West, a distance of 188.4831  
Thence South 37-27-05 West, a distance of 261.0635  
Thence South 06-18-55 East, a distance of 428.4127  
Thence South 00-40-32 West, a distance of 371.0878  
Thence South 66-17-12 East, a distance of 283.1573  
Thence South 54-26-34 East, a distance of 380.8999  
Thence South 18-53-51 West, a distance of 499.4190  
Thence South 32-15-38 East, a distance of 191.7957  
Thence South 14-32-01 West, a distance of 434.8520  
Thence South 17-11-06 West, a distance of 549.9921  
Thence South 31-27-03 West, a distance of 305.2142  
Thence South 60-02-12 West, a distance of 302.7087  
Thence South 60-45-52 West, a distance of 721.1047  
Thence South 83-27-27 West, a distance of 367.5184  
Thence South 57-14-27 West, a distance of 374.5758  
Thence South 20-39-20 East, a distance of 286.6781  
Thence South 88-16-51 East, a distance of 312.5156  
Thence South 25-17-24 East, a distance of 476.0654  
Thence South 57-08-56 East, a distance of 307.8569  
Thence North 50-10-17 East, a distance of 479.5142  
Thence North 29-05-00 East, a distance of 656.5286  
Thence South 34-02-30 East, a distance of 457.5323  
Thence South 17-22-42 East, a distance of 168.2415  
Thence South 00-40-33 West, a distance of 158.9491  
Thence South 60-02-12 West, a distance of 302.7087  
Thence South 00-40-31 West, a distance of 371.2758  
Thence South 67-32-00 East, a distance of 448.9489  
Thence South 64-52-57 East, a distance of 400.4958  
Thence North 71-51-49 East, a distance of 481.6809  
Thence South 89-35-03 East, a distance of 344.3841  
Thence South 46-25-17 East, a distance of 279.7030  
Thence South 03-10-14 East, a distance of 409.0632  
Thence South 23-51-22 West, a distance of 416.9340  
Thence South 03-24-06 East, a distance of 383.4255  
Thence South 66-09-28 East, a distance of 498.9547  
Thence North 61-17-01 East, a distance of 418.4674  
Thence North 62-31-22 East, a distance of 424.9349  
Thence South 60-02-46 East, a distance of 439.7373  
Thence South 24-58-10 East, a distance of 414.5596  
Thence South 33-07-02 East, a distance of 260.1327  
Thence South 34-34-28 East, a distance of 318.9559  
Thence South 18-21-02 East, a distance of 308.8960  
Thence South 13-34-41 West, a distance of 413.1727  
Thence South 42-19-37 West, a distance of 343.9836  
Thence South 63-55-07 West, a distance of 198.5981

## Exhibit G – Description of the Water Management Plan Area

Thence North 85-31-13 West, a distance of 366.4946  
Thence North 76-58-32 West, a distance of 406.8413  
Thence North 72-11-08 West, a distance of 279.2651  
Thence South 48-26-06 West, a distance of 204.3228  
Thence South 34-26-55 West, a distance of 484.3828  
Thence South 07-01-37 West, a distance of 389.2991  
Thence South 05-32-54 East, a distance of 480.9402  
Thence South 47-03-44 East, a distance of 682.8003  
Thence South 21-46-09 East, a distance of 371.7621  
Thence South 02-53-33 East, a distance of 483.0534  
Thence South 14-20-24 West, a distance of 531.9487  
Thence South 35-28-25 West, a distance of 663.8471  
Thence South 52-23-59 West, a distance of 364.7668  
Thence South 08-13-01 East, a distance of 698.7991  
Thence South 67-31-20 East, a distance of 449.3910  
Thence South 25-24-05 East, a distance of 238.0781  
Thence South 22-14-37 West, a distance of 282.6599  
Thence South 22-16-19 West, a distance of 282.6499  
Thence South 26-41-31 East, a distance of 328.3674  
Thence South 08-00-01 East, a distance of 374.5201  
Thence South 00-14-32 West, a distance of 295.8146  
Thence South 22-50-30 East, a distance of 524.2347  
Thence South 32-19-47 East, a distance of 135.8012  
Thence South 74-41-41 East, a distance of 495.5765  
Thence North 87-48-16 East, a distance of 230.0439  
Thence South 62-02-24 East, a distance of 271.0081  
Thence South 27-01-09 East, a distance of 158.7654  
Thence South 00-25-08 West, a distance of 188.1300  
Thence South 47-28-36 West, a distance of 306.8174  
Thence South 67-08-04 West, a distance of 1017.9951  
Thence South 88-16-15 West, a distance of 559.2547  
Thence North 38-00-54 West, a distance of 199.5152  
Thence North 01-24-06 West, a distance of 209.4997  
Thence North 29-50-03 West, a distance of 268.0941  
Thence North 58-00-46 West, a distance of 880.2816  
Thence North 18-49-54 East, a distance of 131.2772  
Thence North 41-46-48 East, a distance of 881.2088  
Thence North 53-22-34 East, a distance of 244.5273  
Thence North 12-17-03 East, a distance of 196.8192  
Thence North 32-10-09 West, a distance of 185.4739  
Thence North 63-33-01 West, a distance of 250.0488  
Thence North 87-33-20 West, a distance of 561.2607  
Thence North 66-33-29 West, a distance of 616.6454  
Thence North 08-43-43 East, a distance of 216.6340  
Thence North 67-39-56 East, a distance of 702.4460  
Thence North 35-11-58 East, a distance of 228.9973  
Thence North 05-39-39 West, a distance of 221.7695  
Thence North 52-37-23 West, a distance of 454.7550  
Thence North 70-59-03 West, a distance of 713.5651  
Thence North 88-13-32 West, a distance of 260.3749  
Thence North 81-50-24 West, a distance of 472.9131  
Thence North 46-37-10 West, a distance of 638.0651  
Thence North 43-16-43 West, a distance of 300.1255  
Thence North 38-12-54 West, a distance of 414.8389  
Thence North 17-22-30 West, a distance of 336.5442  
Thence North 15-44-09 East, a distance of 601.0252

## Exhibit G – Description of the Water Management Plan Area

Thence North 17-21-42 West, a distance of 673.1694  
Thence North 20-38-46 West, a distance of 573.2531  
Thence North 18-52-30 West, a distance of 622.8685  
Thence South 60-02-48 West, a distance of 302.6778  
Thence North 69-38-36 West, a distance of 331.8504  
Thence South 60-02-48 West, a distance of 302.6778  
Thence North 43-18-30 West, a distance of 675.1831  
Thence North 32-14-42 West, a distance of 383.5238  
Thence North 57-09-25 West, a distance of 615.5074  
Thence South 80-11-19 West, a distance of 529.6212  
Thence South 86-26-44 West, a distance of 574.6054  
Thence North 35-20-05 West, a distance of 531.4653  
Thence North 00-38-55 East, a distance of 265.0170  
Thence North 67-31-12 West, a distance of 448.8571  
Thence South 88-18-10 West, a distance of 886.2638  
Thence South 60-46-39 West, a distance of 721.0129  
Thence South 45-41-01 West, a distance of 589.1057  
Thence South 14-55-27 East, a distance of 387.3153  
Thence South 00-40-32 West, a distance of 371.0888  
Thence South 13-04-27 East, a distance of 438.7482  
Thence South 21-26-38 East, a distance of 692.0304  
Thence South 46-37-24 East, a distance of 638.0219  
Thence South 47-03-19 East, a distance of 563.1754  
Thence South 14-56-23 East, a distance of 387.4074  
Thence South 23-12-42 East, a distance of 643.1882  
Thence South 28-23-55 East, a distance of 428.9302  
Thence South 14-56-32 East, a distance of 387.3475  
Thence South 08-36-11 East, a distance of 323.3886  
Thence South 04-55-55 East, a distance of 533.6007  
Thence South 13-03-12 East, a distance of 205.8819  
Thence South 09-36-40 East, a distance of 902.1630  
Thence South 33-16-14 East, a distance of 321.9605  
Thence South 36-27-41 West, a distance of 173.5290  
Thence South 58-28-58 West, a distance of 639.1622  
Thence South 01-42-32 East, a distance of 8216.1537  
Thence North 78-59-47 East, a distance of 87.1013  
Thence South 88-12-52 East, a distance of 469.3529  
Thence South 74-02-23 East, a distance of 432.5486  
Thence South 69-39-25 East, a distance of 664.8422  
Thence South 88-10-48 East, a distance of 208.6052  
Thence South 69-38-45 East, a distance of 498.6348  
Thence South 82-26-13 East, a distance of 525.1939  
Thence North 80-15-12 East, a distance of 265.0761  
Thence South 69-37-59 East, a distance of 332.4062  
Thence North 80-15-12 East, a distance of 265.0761  
Thence North 61-21-31 East, a distance of 418.1679  
Thence North 78-16-23 East, a distance of 907.4410  
Thence South 79-58-51 East, a distance of 370.0179  
Thence North 82-08-20 East, a distance of 316.2216  
Thence North 55-40-58 East, a distance of 239.1251  
Thence North 32-41-32 East, a distance of 260.8180  
Thence North 87-54-28 East, a distance of 267.0530  
Thence South 74-39-09 East, a distance of 360.3507  
Thence South 81-59-59 East, a distance of 351.1678  
Thence South 85-51-12 East, a distance of 535.0256  
Thence North 74-27-22 East, a distance of 253.5225

## Exhibit G – Description of the Water Management Plan Area

Thence North 68-04-45 East, a distance of 405.9771  
Thence North 72-57-30 East, a distance of 164.2103  
Thence North 68-40-29 East, a distance of 674.5618  
Thence South 88-12-52 East, a distance of 469.3529  
Thence North 84-02-19 East, a distance of 787.1317  
Thence North 57-20-59 East, a distance of 187.2075  
Thence North 72-57-06 East, a distance of 328.3010  
Thence North 89-27-22 East, a distance of 1303.8087  
Thence North 69-30-36 East, a distance of 279.4284  
Thence North 55-24-17 East, a distance of 446.5897  
Thence North 77-27-37 East, a distance of 428.3428  
Thence North 57-20-59 East, a distance of 187.2075  
Thence North 68-40-15 East, a distance of 674.4450  
Thence North 54-02-04 East, a distance of 259.7702  
Thence North 61-32-05 West, a distance of 236.0350  
Thence North 11-48-13 East, a distance of 268.8725  
Thence North 74-44-23 East, a distance of 542.1152  
Thence North 79-01-23 East, a distance of 478.8868  
Thence North 72-58-07 East, a distance of 328.4024  
Thence North 39-15-47 East, a distance of 333.7907  
Thence North 18-52-51 East, a distance of 332.5833  
Thence North 77-29-05 East, a distance of 428.3020  
Thence South 64-07-57 East, a distance of 518.8621  
Thence South 88-12-19 East, a distance of 365.1791  
Thence North 57-18-33 East, a distance of 748.5774  
Thence North 30-13-53 East, a distance of 421.8035  
Thence North 50-13-44 East, a distance of 479.1141  
Thence North 27-01-48 East, a distance of 351.2419  
Thence North 69-48-55 East, a distance of 347.5974  
Thence North 73-52-54 East, a distance of 276.2335  
Thence North 64-10-01 East, a distance of 564.5414  
Thence North 48-25-39 East, a distance of 770.2680  
Thence North 02-42-04 West, a distance of 363.4037  
Thence North 07-15-13 East, a distance of 494.0156  
Thence South 82-00-37 East, a distance of 544.5357  
Thence North 23-34-36 East, a distance of 248.7655  
Thence North 08-21-28 West, a distance of 257.9899  
Thence North 12-57-56 West, a distance of 211.7095  
Thence North 39-05-14 East, a distance of 188.3414  
Thence South 59-36-44 East, a distance of 294.3064  
Thence South 29-40-15 East, a distance of 384.3301  
Thence North 77-27-50 East, a distance of 214.2324  
Thence South 37-11-16 East, a distance of 340.4048  
Thence South 29-37-50 East, a distance of 310.4751  
Thence North 63-11-55 East, a distance of 298.2940  
Thence North 54-27-48 East, a distance of 484.6434  
Thence North 53-19-04 East, a distance of 504.0777  
Thence North 70-16-43 East, a distance of 313.3817  
Thence North 68-19-13 East, a distance of 338.7091  
Thence South 79-55-46 East, a distance of 321.3256  
Thence South 88-11-10 East, a distance of 260.6306  
Thence South 88-14-05 East, a distance of 365.1733  
Thence South 61-32-01 East, a distance of 235.8955  
Thence South 69-37-59 East, a distance of 332.4058  
Thence South 71-22-52 East, a distance of 548.3222  
Thence South 13-09-09 East, a distance of 219.1868

## Exhibit G – Description of the Water Management Plan Area

Thence South 22-05-36 East, a distance of 405.4599  
Thence South 35-25-24 East, a distance of 265.9093  
Thence South 61-31-13 East, a distance of 235.9251  
Thence North 09-57-27 East, a distance of 320.9599  
Thence North 12-08-01 West, a distance of 709.4744  
Thence North 05-00-10 West, a distance of 533.2184  
Thence North 31-28-03 East, a distance of 304.8291  
Thence North 62-04-26 East, a distance of 534.2079  
Thence North 76-04-08 East, a distance of 380.0540  
Thence North 50-36-14 East, a distance of 898.3854  
Thence South 60-30-43 East, a distance of 295.9651  
Thence South 09-03-18 East, a distance of 874.4608  
Thence South 42-03-39 West, a distance of 1049.7552  
Thence South 33-04-47 East, a distance of 305.9692  
Thence South 00-25-20 West, a distance of 424.0115  
Thence South 08-41-25 West, a distance of 175.3885  
Thence South 18-57-27 West, a distance of 88.8830  
Thence South 00-37-56 West, a distance of 158.5727  
Thence South 02-24-11 West, a distance of 420.3696  
Thence South 10-51-56 West, a distance of 218.1612  
Thence South 23-17-39 West, a distance of 1081.6711  
Thence South 22-14-55 West, a distance of 282.6016  
Thence South 09-56-34 West, a distance of 642.1445  
Thence South 00-36-30 West, a distance of 423.7739  
Thence South 05-36-43 East, a distance of 480.6166  
Thence South 34-07-27 East, a distance of 457.6755  
Thence South 43-22-35 East, a distance of 525.6352  
Thence South 43-21-59 East, a distance of 468.2066  
Thence South 86-51-47 East, a distance of 194.1659  
Thence North 13-02-05 West, a distance of 207.2779  
Thence North 31-29-15 East, a distance of 304.8943  
Thence South 28-28-33 East, a distance of 429.1724  
Thence South 00-37-56 West, a distance of 101.9432  
Thence South 00-34-18 West, a distance of 162.8831  
Thence South 79-04-14 West, a distance of 215.9165  
Thence South 16-16-25 East, a distance of 365.7800  
Thence South 29-40-24 East, a distance of 310.3196  
Thence South 00-36-30 West, a distance of 211.8869  
Thence South 11-46-39 West, a distance of 268.8469  
Thence South 34-06-24 East, a distance of 457.6575  
Thence South 32-18-47 East, a distance of 383.7376  
Thence South 05-00-57 East, a distance of 533.2921  
Thence South 18-52-51 West, a distance of 332.5833  
Thence South 34-14-57 West, a distance of 564.8157  
Thence South 62-30-45 West, a distance of 350.7168  
Thence South 27-53-02 East, a distance of 1292.0070  
Thence South 26-38-27 East, a distance of 844.3959  
Thence South 35-16-45 East, a distance of 1398.9888  
Thence South 43-11-11 East, a distance of 1392.1514  
Thence South 42-14-40 East, a distance of 491.7866  
Thence North 45-24-07 East, a distance of 151.1478  
Thence South 77-29-31 East, a distance of 410.3647  
Thence South 18-02-51 East, a distance of 181.1631  
Thence South 39-21-33 East, a distance of 223.9113  
Thence South 33-18-20 East, a distance of 206.6998  
Thence South 00-25-39 West, a distance of 167.5677

## Exhibit G – Description of the Water Management Plan Area

Thence South 54-42-30 East, a distance of 111.6424  
Thence South 50-39-25 East, a distance of 838.8686  
Thence North 11-47-14 West, a distance of 130.9483  
Thence North 07-43-40 West, a distance of 202.6535  
Thence North 00-24-22 East, a distance of 229.3178  
Thence North 00-25-00 East, a distance of 171.8795  
Thence North 37-17-40 East, a distance of 143.3793  
Thence South 83-52-17 East, a distance of 288.0212  
Thence South 35-07-26 East, a distance of 246.5899  
Thence South 57-35-35 East, a distance of 270.2065  
Thence South 66-24-50 East, a distance of 218.3676  
Thence South 84-22-46 East, a distance of 316.5217  
Thence South 67-45-17 East, a distance of 154.3641  
Thence South 60-13-50 East, a distance of 526.0466  
Thence South 30-34-27 East, a distance of 334.2156  
Thence South 20-07-23 East, a distance of 244.8868  
Thence South 21-23-16 East, a distance of 463.0777  
Thence South 26-09-54 East, a distance of 192.1947  
Thence South 37-28-06 East, a distance of 326.7182  
Thence South 31-11-18 East, a distance of 437.6249  
Thence South 36-28-24 East, a distance of 429.8103  
Thence South 32-03-48 East, a distance of 373.6888  
Thence South 38-14-10 East, a distance of 366.9793  
Thence South 26-09-29 East, a distance of 448.5666  
Thence South 26-08-48 East, a distance of 256.4284  
Thence South 28-11-19 East, a distance of 359.0890  
Thence South 27-53-11 East, a distance of 423.0643  
Thence South 28-12-22 East, a distance of 359.1480  
Thence South 32-03-30 East, a distance of 373.7422  
Thence South 44-37-29 East, a distance of 80.9655  
Thence North 18-52-20 East, a distance of 181.2433  
Thence North 00-24-01 East, a distance of 143.1905  
Thence North 14-50-58 West, a distance of 326.7890  
Thence North 05-18-17 West, a distance of 287.9834  
Thence North 00-24-59 East, a distance of 258.0698  
Thence North 53-33-00 East, a distance of 143.2788  
Thence North 84-41-51 East, a distance of 288.1079  
Thence South 51-43-06 East, a distance of 326.7620  
Thence South 44-34-21 East, a distance of 527.0298  
Thence South 31-11-28 East, a distance of 437.3463  
Thence South 33-58-56 East, a distance of 659.7382  
Thence South 38-14-14 East, a distance of 550.5564  
Thence South 63-00-06 East, a distance of 384.5311  
Thence South 38-59-18 East, a distance of 1038.4843  
Thence South 15-17-56 East, a distance of 952.6996  
Thence South 55-56-23 East, a distance of 206.5605  
Thence South 55-53-00 East, a distance of 516.8216  
Thence South 38-53-16 East, a distance of 407.1779  
Thence South 16-56-09 East, a distance of 1441.3852  
Thence South 07-11-08 East, a distance of 433.7182  
Thence South 21-02-16 East, a distance of 862.1560  
Thence South 27-40-23 East, a distance of 487.1621  
Thence South 26-09-29 East, a distance of 448.5666  
Thence South 45-22-28 West, a distance of 81.1422  
Thence South 06-42-29 East, a distance of 231.1453  
Thence South 20-08-17 East, a distance of 244.7103

## Exhibit G – Description of the Water Management Plan Area

Thence South 09-04-03 East, a distance of 174.4926  
Thence South 09-02-24 East, a distance of 174.2271  
Thence South 07-43-40 East, a distance of 202.6525  
Thence South 00-24-00 West, a distance of 286.5700  
Thence South 14-49-32 East, a distance of 326.8170  
Thence South 00-24-00 West, a distance of 286.5070  
Thence South 21-21-44 East, a distance of 154.4223  
Thence South 13-37-15 East, a distance of 236.2051  
Thence South 13-38-35 East, a distance of 236.3570  
Thence South 15-31-50 East, a distance of 208.6814  
Thence South 22-46-58 East, a distance of 218.2129  
Thence South 22-46-35 East, a distance of 218.2700  
Thence South 55-52-57 East, a distance of 206.7006  
Thence South 78-16-53 East, a distance of 146.1716  
Thence North 79-05-28 East, a distance of 292.2816  
Thence North 74-28-54 East, a distance of 208.6048  
Thence North 82-16-12 East, a distance of 202.5910  
Thence South 89-35-39 East, a distance of 229.3808  
Thence South 80-06-19 East, a distance of 174.2164  
Thence North 22-12-54 East, a distance of 154.3976  
Thence North 26-07-54 West, a distance of 192.1396  
Thence North 36-27-45 West, a distance of 286.6826  
Thence North 41-34-35 West, a distance of 385.5748  
Thence North 26-08-54 West, a distance of 384.3343  
Thence North 13-37-11 West, a distance of 354.5964  
Thence North 24-22-44 West, a distance of 410.3376  
Thence North 18-00-48 West, a distance of 362.5852  
Thence North 12-07-44 West, a distance of 264.1464  
Thence North 05-55-46 West, a distance of 519.0893  
Thence North 00-24-59 East, a distance of 429.9494  
Thence North 02-18-24 West, a distance of 602.4882  
Thence North 02-04-24 West, a distance of 659.9320  
Thence North 02-05-06 West, a distance of 659.6867  
Thence North 25-08-41 West, a distance of 730.7479  
Thence North 42-06-19 West, a distance of 466.4456  
Thence North 19-15-13 West, a distance of 426.0813  
Thence North 02-57-04 West, a distance of 488.0222  
Thence North 00-24-41 East, a distance of 487.3876  
Thence North 00-25-30 East, a distance of 286.5709  
Thence North 19-34-09 West, a distance of 335.5043  
Thence North 34-05-50 West, a distance of 556.3259  
Thence North 22-12-56 West, a distance of 745.1916  
Thence North 23-12-25 West, a distance of 500.5652  
Thence North 06-43-37 West, a distance of 462.0560  
Thence North 10-53-48 West, a distance of 292.2697  
Thence North 00-25-22 East, a distance of 372.6971  
Thence North 00-24-28 East, a distance of 544.3888  
Thence North 00-24-21 East, a distance of 458.6995  
Thence North 13-37-02 West, a distance of 472.5327  
Thence North 16-18-14 West, a distance of 299.2196  
Thence North 06-09-17 East, a distance of 287.9729  
Thence North 63-49-21 East, a distance of 256.2870  
Thence North 63-49-04 East, a distance of 192.3620  
Thence South 89-35-15 East, a distance of 286.5074  
Thence South 72-52-12 East, a distance of 299.4071  
Thence South 36-27-54 East, a distance of 286.4572



## Exhibit G – Description of the Water Management Plan Area

Thence South 63-00-19 East, a distance of 320.4094  
Thence South 87-05-43 East, a distance of 659.8478  
Thence South 87-18-26 East, a distance of 717.0418  
Thence North 78-19-20 East, a distance of 410.3691  
Thence North 86-20-49 East, a distance of 402.1922  
Thence North 75-28-47 East, a distance of 444.9628  
Thence North 68-35-42 East, a distance of 463.0656  
Thence South 89-35-15 East, a distance of 573.1398  
Thence North 74-30-26 East, a distance of 208.7087  
Thence North 67-12-39 East, a distance of 218.1548  
Thence North 40-38-39 East, a distance of 488.2085  
Thence North 56-43-24 East, a distance of 309.9471  
Thence North 82-49-48 East, a distance of 433.6411  
Thence South 64-49-28 East, a distance of 410.3555  
Thence South 79-35-09 East, a distance of 494.7756  
Thence South 51-42-35 East, a distance of 326.8004  
Thence South 67-19-51 East, a distance of 681.2553  
Thence South 53-53-05 East, a distance of 1129.4102  
Thence South 36-27-09 East, a distance of 573.2902  
Thence South 69-38-11 East, a distance of 335.3323  
Thence North 82-19-37 East, a distance of 202.6898  
Thence North 75-09-58 East, a distance of 326.6362  
Thence South 86-44-29 East, a distance of 573.9280  
Thence South 44-35-15 East, a distance of 405.2711  
Thence South 54-53-15 East, a distance of 453.2260  
Thence South 26-08-48 East, a distance of 256.4275  
Thence South 70-17-49 East, a distance of 607.3060  
Thence South 72-29-09 East, a distance of 389.8210  
Thence South 57-07-23 East, a distance of 373.7322  
Thence South 78-17-20 East, a distance of 292.2079  
Thence North 60-38-50 East, a distance of 231.0356  
Thence North 63-52-05 East, a distance of 192.2792  
Thence North 63-50-06 East, a distance of 256.2596  
Thence North 33-14-52 West, a distance of 103.2813  
Thence North 73-39-56 West, a distance of 208.6728  
Thence North 83-14-16 West, a distance of 259.5556  
Thence North 83-52-07 West, a distance of 287.8969  
Thence North 38-15-29 West, a distance of 183.7039  
Thence North 31-36-33 West, a distance of 270.2132  
Thence North 06-40-38 West, a distance of 231.1308  
Thence North 31-21-38 East, a distance of 167.1723  
Thence North 36-29-06 West, a distance of 286.5315  
Thence North 52-43-48 West, a distance of 143.2535  
Thence North 12-07-13 West, a distance of 264.3292  
Thence North 00-26-14 East, a distance of 229.3817  
Thence North 49-48-32 East, a distance of 264.1064  
Thence North 63-50-04 East, a distance of 64.2044  
Thence North 81-00-14 East, a distance of 174.2687  
Thence North 37-17-40 East, a distance of 143.3793  
Thence North 11-41-40 East, a distance of 146.1588  
Thence North 00-22-29 East, a distance of 114.6895  
Thence North 44-33-45 West, a distance of 162.1090  
Thence North 54-04-38 West, a distance of 246.5087  
Thence North 74-39-06 West, a distance of 444.8663  
Thence North 55-53-48 West, a distance of 206.6659  
Thence North 81-26-16 West, a distance of 202.7599

## Exhibit G – Description of the Water Management Plan Area

Thence North 89-35-15 West, a distance of 286.5074  
Thence South 60-39-45 West, a distance of 231.1446  
Thence South 75-28-47 West, a distance of 444.9625  
Thence South 84-04-11 West, a distance of 259.5139  
Thence North 74-39-14 West, a distance of 889.8532  
Thence North 37-28-30 West, a distance of 326.6682  
Thence North 60-56-43 West, a distance of 359.0601  
Thence North 51-42-35 West, a distance of 326.8004  
Thence North 74-40-45 West, a distance of 444.9374  
Thence North 78-16-36 West, a distance of 584.4413  
Thence North 59-50-38 West, a distance of 462.3204  
Thence North 41-12-16 West, a distance of 345.1619  
Thence North 36-28-24 West, a distance of 429.8103  
Thence North 44-33-45 West, a distance of 324.2179  
Thence North 78-17-37 West, a distance of 292.3305  
Thence North 82-27-35 West, a distance of 230.9974  
Thence North 85-45-59 West, a distance of 430.9259  
Thence North 74-51-11 West, a distance of 563.0613  
Thence South 86-51-26 West, a distance of 459.4410  
Thence South 66-26-36 West, a distance of 282.2731  
Thence North 87-12-58 West, a distance of 688.4375  
Thence North 66-44-39 West, a distance of 590.7479  
Thence North 71-08-45 West, a distance of 815.7709  
Thence North 61-17-05 West, a distance of 423.1666  
Thence North 75-34-27 West, a distance of 472.6522  
Thence North 86-00-24 West, a distance of 459.4906  
Thence North 54-52-19 West, a distance of 453.1594  
Thence North 77-03-58 West, a distance of 792.7378  
Thence North 64-34-10 West, a distance of 474.3353  
Thence North 69-21-42 West, a distance of 580.3709  
Thence North 65-57-27 West, a distance of 500.4138  
Thence North 48-24-23 West, a distance of 914.0925  
Thence North 48-58-47 West, a distance of 528.5110  
Thence North 26-09-15 West, a distance of 576.8086  
Thence North 28-38-22 West, a distance of 294.9630  
Thence North 05-55-05 West, a distance of 259.4447  
Thence North 39-03-22 East, a distance of 183.5086  
Thence North 08-32-50 East, a distance of 202.6892  
Thence North 18-02-29 West, a distance of 181.2221  
Thence North 44-34-49 West, a distance of 283.6904  
Thence North 16-56-18 West, a distance of 480.5332  
Thence North 26-57-57 East, a distance of 63.9531  
Thence North 26-59-06 East, a distance of 320.3812  
Thence North 00-24-56 East, a distance of 86.1903  
Thence North 13-36-07 West, a distance of 117.9965  
Thence North 55-53-15 West, a distance of 103.4197  
Thence North 80-07-57 West, a distance of 348.6579  
Thence South 83-19-15 West, a distance of 231.0682  
Thence South 71-56-46 West, a distance of 181.3012  
Thence North 89-35-15 West, a distance of 286.5074  
Thence North 65-37-31 West, a distance of 282.2862  
Thence North 21-24-19 West, a distance of 154.4679  
Thence North 00-25-00 East, a distance of 257.8188  
Thence North 50-35-45 East, a distance of 223.8940  
Thence North 72-00-09 East, a distance of 362.4866  
Thence North 77-51-49 East, a distance of 264.2818

## Exhibit G – Description of the Water Management Plan Area

Thence North 51-44-27 East, a distance of 367.0951  
Thence North 54-54-11 East, a distance of 246.4308  
Thence North 56-41-40 East, a distance of 310.0497  
Thence North 62-07-05 East, a distance of 423.2595  
Thence North 06-43-28 East, a distance of 259.4095  
Thence North 21-22-37 West, a distance of 617.2803  
Thence North 23-33-48 West, a distance of 282.3551  
Thence North 89-33-45 West, a distance of 114.6283  
Thence North 89-35-22 West, a distance of 401.2603  
Thence South 69-51-30 West, a distance of 244.8490  
Thence South 60-09-01 West, a distance of 398.0591  
Thence South 54-23-11 West, a distance of 389.9315  
Thence South 54-22-33 West, a distance of 389.8293  
Thence South 61-48-41 West, a distance of 359.0890  
Thence South 84-03-32 West, a distance of 259.6446  
Thence North 89-35-15 West, a distance of 286.5074  
Thence North 57-07-23 West, a distance of 373.7322  
Thence North 00-24-59 East, a distance of 258.0698  
Thence North 30-40-48 East, a distance of 398.0960  
Thence North 00-23-59 East, a distance of 143.3785  
Thence North 18-00-35 West, a distance of 90.5622  
Thence North 40-11-02 West, a distance of 264.2419  
Thence North 65-07-41 West, a distance of 346.2386  
Thence North 83-15-30 West, a distance of 519.0892  
Thence North 44-35-39 West, a distance of 324.3934  
Thence North 60-59-24 West, a distance of 359.0481  
Thence North 30-30-56 West, a distance of 167.1519  
Thence North 18-02-29 West, a distance of 362.4451  
Thence North 00-25-00 East, a distance of 171.9425  
Thence North 53-32-05 East, a distance of 286.7694  
Thence North 79-07-22 East, a distance of 292.1233  
Thence South 89-35-23 East, a distance of 200.6301  
Thence South 84-48-57 East, a distance of 345.1619  
Thence South 50-18-17 East, a distance of 407.2701  
Thence South 44-36-07 East, a distance of 324.3485  
Thence South 47-35-44 East, a distance of 385.4597  
Thence South 47-57-26 East, a distance of 345.2181  
Thence South 50-18-41 East, a distance of 407.2305  
Thence South 65-07-08 East, a distance of 346.2647  
Thence South 85-11-02 East, a distance of 373.6944  
Thence South 89-35-12 East, a distance of 372.6347  
Thence North 70-25-25 East, a distance of 335.3866  
Thence North 67-14-11 East, a distance of 218.3853  
Thence North 32-23-49 East, a distance of 270.3989  
Thence North 00-24-59 East, a distance of 344.0091  
Thence North 06-44-46 West, a distance of 230.9107  
Thence North 37-17-40 East, a distance of 286.7579  
Thence North 00-23-34 East, a distance of 200.5677  
Thence North 00-23-58 East, a distance of 143.4405  
Thence North 54-03-04 West, a distance of 493.0265  
Thence North 79-16-58 West, a distance of 640.9295  
Thence North 85-45-54 West, a distance of 430.8012  
Thence North 74-20-13 West, a distance of 653.5178  
Thence North 71-09-25 West, a distance of 543.7674  
Thence North 53-33-23 West, a distance of 779.7344  
Thence North 26-08-55 West, a distance of 768.9482

## Exhibit G – Description of the Water Management Plan Area

Thence North 21-24-02 West, a distance of 617.3128  
Thence North 04-14-31 East, a distance of 430.9305  
Thence North 42-24-18 East, a distance of 385.5473  
Thence North 41-00-36 East, a distance of 264.2145  
Thence North 30-08-41 East, a distance of 230.9893  
Thence North 07-43-31 West, a distance of 202.7149  
Thence North 40-45-25 West, a distance of 304.6257  
Thence North 70-17-49 West, a distance of 607.3060  
Thence North 55-54-46 West, a distance of 310.0155  
Thence North 26-09-10 West, a distance of 256.3718  
Thence North 00-27-01 East, a distance of 143.1924  
Thence North 14-27-19 East, a distance of 118.1782  
Thence North 00-23-59 East, a distance of 143.3785  
Thence North 54-03-37 West, a distance of 246.4075  
Thence North 81-58-34 West, a distance of 433.8727  
Thence North 77-04-54 West, a distance of 264.1866  
Thence North 37-26-54 West, a distance of 326.8667  
Thence North 00-25-42 East, a distance of 200.6306  
Thence North 00-24-14 East, a distance of 372.5092  
Thence North 15-40-06 East, a distance of 326.7674  
Thence North 16-21-03 East, a distance of 208.6903  
Thence North 35-24-20 East, a distance of 349.7396  
Thence North 63-50-04 East, a distance of 64.2044  
Thence North 63-50-50 East, a distance of 256.3718  
Thence North 56-43-24 East, a distance of 309.9471  
Thence North 53-33-00 East, a distance of 286.5577  
Thence North 76-22-18 East, a distance of 945.3672  
Thence North 52-15-15 East, a distance of 510.2846  
Thence North 66-11-52 East, a distance of 628.5904  
Thence North 74-26-54 East, a distance of 625.9155  
Thence North 58-25-38 East, a distance of 270.2542  
Thence South 85-01-19 East, a distance of 718.8363  
Thence South 63-01-36 East, a distance of 384.4457  
Thence South 66-20-26 East, a distance of 218.3532  
Thence South 69-03-13 East, a distance of 244.9364  
Thence North 83-16-16 East, a distance of 230.9660  
Thence North 53-34-47 East, a distance of 143.3794  
Thence South 84-23-40 East, a distance of 949.5407  
Thence South 56-51-35 East, a distance of 476.9601  
Thence South 58-35-04 East, a distance of 167.2702  
Thence North 84-03-22 East, a distance of 519.0406  
Thence North 56-46-52 East, a distance of 103.2473  
Thence North 58-23-45 East, a distance of 270.4916  
Thence North 71-54-54 East, a distance of 90.6009  
Thence South 89-35-01 East, a distance of 172.0045  
Thence South 74-03-10 East, a distance of 535.4830  
Thence South 44-34-13 East, a distance of 324.1737  
Thence South 33-18-20 East, a distance of 310.0497  
Thence South 20-36-19 East, a distance of 399.2270  
Thence South 47-58-49 East, a distance of 345.0929  
Thence South 53-33-09 East, a distance of 389.8856  
Thence South 76-35-51 East, a distance of 764.7010  
Thence South 81-44-01 East, a distance of 838.9669  
Thence South 77-41-35 East, a distance of 556.5393  
Thence South 84-08-48 East, a distance of 1209.1792  
Thence South 87-06-12 East, a distance of 1319.5612

## Exhibit G – Description of the Water Management Plan Area

Thence North 82-17-20 East, a distance of 607.8717  
Thence South 89-35-38 East, a distance of 458.6365  
Thence North 68-02-09 East, a distance of 526.8664  
Thence North 76-22-18 East, a distance of 472.6836  
Thence North 76-23-14 East, a distance of 590.8480  
Thence South 89-35-37 East, a distance of 114.5029  
Thence North 56-42-13 East, a distance of 103.4884  
Thence North 63-53-06 East, a distance of 128.0747  
Thence North 45-25-36 East, a distance of 243.2076  
Thence North 29-27-11 East, a distance of 295.1445  
Thence North 41-00-36 East, a distance of 264.2145  
Thence South 89-35-37 East, a distance of 114.6279  
Thence North 82-16-29 East, a distance of 202.7149  
Thence South 89-35-00 East, a distance of 257.8818  
Thence South 83-52-26 East, a distance of 288.1455  
Thence South 52-40-48 East, a distance of 143.1916  
Thence South 30-33-09 East, a distance of 167.2154  
Thence South 09-52-16 West, a distance of 174.2679  
Thence South 30-08-41 West, a distance of 230.9893  
Thence South 22-12-22 West, a distance of 154.4560  
Thence South 00-26-15 West, a distance of 229.1317  
Thence South 00-23-59 West, a distance of 143.3785  
Thence South 26-09-10 East, a distance of 384.5573  
Thence South 30-33-01 East, a distance of 334.2063  
Thence South 47-04-25 East, a distance of 466.5541  
Thence South 59-51-47 East, a distance of 462.0867  
Thence South 66-04-10 East, a distance of 718.7888  
Thence South 60-34-06 East, a distance of 295.0830  
Thence South 36-26-24 East, a distance of 429.9371  
Thence South 38-16-32 East, a distance of 183.4302  
Thence South 50-55-44 East, a distance of 367.0959  
Thence South 80-07-32 East, a distance of 522.9976  
Thence South 83-14-16 East, a distance of 259.5556  
Thence South 89-35-00 East, a distance of 343.8841  
Thence North 59-26-40 East, a distance of 167.0758  
Thence North 60-38-50 East, a distance of 231.0356  
Thence North 66-27-54 East, a distance of 282.3629  
Thence North 63-51-05 East, a distance of 192.3069  
Thence South 89-35-22 East, a distance of 200.5051  
Thence South 44-36-00 East, a distance of 202.5910  
Thence South 18-01-23 East, a distance of 181.4008  
Thence South 13-38-22 East, a distance of 236.4173  
Thence South 03-58-18 East, a distance of 373.5851  
Thence South 10-53-48 East, a distance of 292.2697  
Thence South 22-46-58 East, a distance of 218.2120  
Thence South 31-34-53 East, a distance of 270.4261  
Thence South 39-24-51 East, a distance of 223.8461  
Thence North 76-20-46 East, a distance of 118.0872  
Thence North 68-37-46 East, a distance of 154.3636  
Thence North 18-52-43 East, a distance of 181.1847  
Thence North 26-57-53 East, a distance of 256.3714  
Thence North 18-50-39 East, a distance of 362.6232  
Thence North 36-25-57 East, a distance of 389.8114  
Thence North 45-25-49 East, a distance of 364.7890  
Thence North 58-48-12 East, a distance of 437.5179  
Thence North 73-54-12 East, a distance of 807.0133

## Exhibit G – Description of the Water Management Plan Area

Thence South 89-35-13 East, a distance of 372.6347  
Thence South 70-07-37 East, a distance of 516.6417  
Thence South 57-26-00 East, a distance of 1184.7900  
Thence South 42-06-12 East, a distance of 933.1152  
Thence South 68-33-43 East, a distance of 399.1137  
Thence South 44-35-55 East, a distance of 283.7774  
Thence South 68-32-12 East, a distance of 399.1825  
Thence South 71-10-13 East, a distance of 453.1256  
Thence South 86-24-01 East, a distance of 516.6443  
Thence South 63-00-36 East, a distance of 256.2886  
Thence South 47-57-26 East, a distance of 345.2181  
Thence South 61-08-28 East, a distance of 782.1325  
Thence South 53-20-23 East, a distance of 533.2286  
Thence South 58-37-21 East, a distance of 835.5739  
Thence South 44-35-29 East, a distance of 526.8518  
Thence South 68-43-27 East, a distance of 644.0187  
Thence South 60-46-50 East, a distance of 654.2487  
Thence South 56-28-54 East, a distance of 786.8458  
Thence South 34-42-45 East, a distance of 946.2958  
Thence South 31-35-39 East, a distance of 1081.5570  
Thence South 24-47-42 East, a distance of 1076.9010  
Thence South 09-02-24 East, a distance of 174.2261  
Thence South 10-53-23 East, a distance of 292.4543  
Thence South 29-50-59 East, a distance of 398.0591  
Thence South 54-01-30 East, a distance of 246.5173  
Thence South 55-54-06 East, a distance of 206.8047  
Thence South 39-23-59 East, a distance of 223.7180  
Thence South 35-07-27 East, a distance of 246.5891  
Thence South 49-48-18 East, a distance of 223.7016  
Thence South 71-06-40 East, a distance of 272.0239  
Thence South 82-30-21 East, a distance of 230.9730  
Thence South 89-35-39 East, a distance of 114.6279  
Thence South 78-15-28 East, a distance of 146.1842  
Thence South 63-02-06 East, a distance of 192.2788  
Thence South 62-57-36 East, a distance of 128.1311  
Thence North 00-22-28 East, a distance of 57.3762  
Thence North 30-32-53 West, a distance of 166.9909  
Thence North 36-27-13 West, a distance of 430.0114  
Thence North 55-53-59 West, a distance of 309.9120  
Thence North 29-50-11 West, a distance of 398.2213  
Thence North 16-42-00 West, a distance of 389.7520  
Thence North 03-40-13 West, a distance of 402.2620  
Thence North 34-06-00 East, a distance of 310.1378  
Thence South 89-35-37 East, a distance of 114.6279  
Thence South 89-35-00 East, a distance of 257.8818  
Thence South 33-18-20 East, a distance of 103.3499  
Thence South 50-17-04 East, a distance of 407.3895  
Thence South 83-51-32 East, a distance of 288.0279  
Thence South 63-02-07 East, a distance of 192.2783  
Thence South 58-09-42 East, a distance of 604.5925  
Thence South 59-00-31 East, a distance of 732.2881  
Thence North 85-12-37 East, a distance of 316.6057  
Thence South 89-35-00 East, a distance of 343.8841  
Thence South 79-34-59 East, a distance of 494.6526  
Thence North 51-42-18 West, a distance of 326.6633  
Thence North 53-35-56 West, a distance of 82.4656

## Exhibit G – Description of the Water Management Plan Area

Thence North 53-34-06 West, a distance of 307.3090  
Thence North 55-53-22 West, a distance of 413.3665  
Thence North 72-53-50 West, a distance of 598.4647  
Thence North 60-58-05 West, a distance of 718.2480  
Thence North 46-42-41 West, a distance of 390.6740  
Thence North 46-42-44 West, a distance of 156.7825  
Thence North 44-35-15 West, a distance of 405.2711  
Thence North 46-18-48 West, a distance of 669.1426  
Thence North 37-52-35 West, a distance of 693.8574  
Thence North 34-17-42 West, a distance of 906.2395  
Thence North 33-57-07 West, a distance of 659.8059  
Thence North 44-35-16 West, a distance of 608.0830  
Thence North 46-47-40 West, a distance of 1054.3274  
Thence North 48-19-10 West, a distance of 1868.4824  
Thence North 56-06-31 West, a distance of 2130.4779  
Thence North 66-07-44 West, a distance of 1655.6256  
Thence North 58-12-53 West, a distance of 1376.2780  
Thence North 41-24-29 West, a distance of 730.8163  
Thence North 41-13-30 West, a distance of 345.0212  
Thence North 26-08-55 West, a distance of 384.6138  
Thence North 13-37-46 West, a distance of 354.3535  
Thence North 41-34-35 West, a distance of 385.5755  
Thence North 42-50-20 West, a distance of 669.1777  
Thence North 50-29-55 West, a distance of 1181.6210  
Thence North 31-24-48 West, a distance of 978.2580  
Thence North 26-09-14 West, a distance of 704.9949  
Thence North 08-33-23 West, a distance of 551.1343  
Thence North 10-42-42 East, a distance of 640.9180  
Thence North 35-06-54 East, a distance of 453.0875  
Thence North 45-23-44 East, a distance of 243.3389  
Thence North 52-32-18 East, a distance of 326.7674  
Thence North 00-25-00 East, a distance of 171.8795  
Thence North 34-34-34 West, a distance of 349.7803  
Thence North 44-35-13 West, a distance of 337.0774  
Thence North 44-35-20 West, a distance of 271.0057  
Thence North 27-14-21 West, a distance of 679.4763  
Thence North 09-26-25 West, a distance of 669.1250  
Thence North 15-50-43 West, a distance of 716.4738  
Thence North 22-47-41 West, a distance of 436.5304  
Thence North 20-37-42 West, a distance of 399.1550  
Thence North 05-56-49 West, a distance of 259.3960  
Thence North 12-05-28 West, a distance of 264.3646  
Thence North 14-27-19 East, a distance of 118.1782  
Thence North 50-21-25 East, a distance of 158.1102  
Thence North 65-13-15 East, a distance of 328.2188  
Thence North 82-49-41 East, a distance of 264.3181  
Thence South 84-49-29 East, a distance of 420.5895  
Thence South 77-19-12 East, a distance of 411.1524  
Thence South 62-03-23 East, a distance of 453.0744  
Thence South 53-30-14 East, a distance of 237.5929  
Thence South 57-59-51 East, a distance of 266.6488  
Thence South 66-45-48 East, a distance of 360.0835  
Thence South 74-02-50 East, a distance of 326.3171  
Thence South 70-08-39 East, a distance of 314.8424  
Thence South 63-01-30 East, a distance of 234.3736  
Thence South 35-38-22 East, a distance of 237.4798

## Exhibit G – Description of the Water Management Plan Area

Thence South 42-04-07 East, a distance of 284.3200  
Thence South 48-59-46 East, a distance of 322.1632  
Thence South 55-05-28 East, a distance of 338.9985  
Thence South 76-41-52 East, a distance of 627.2030  
Thence South 80-50-12 East, a distance of 689.1699  
Thence South 68-34-43 East, a distance of 243.1736  
Thence South 51-17-14 East, a distance of 422.9187  
Thence South 23-13-07 East, a distance of 305.0162  
Thence South 17-07-37 East, a distance of 348.0598  
Thence South 20-36-34 East, a distance of 243.2560  
Thence South 77-20-44 East, a distance of 411.1112  
Thence North 88-22-32 East, a distance of 489.4467  
Thence South 89-35-23 East, a distance of 209.5054  
Thence South 77-48-51 East, a distance of 428.1470  
Thence South 46-33-41 East, a distance of 358.4156  
Thence South 54-02-09 East, a distance of 300.5375  
Thence North 76-21-42 East, a distance of 288.1242  
Thence North 17-30-54 East, a distance of 237.5765  
Thence North 16-48-48 East, a distance of 309.4149  
Thence North 34-06-01 East, a distance of 125.9718  
Thence North 84-56-56 East, a distance of 368.4308  
Thence South 89-35-24 East, a distance of 227.1308  
Thence South 79-15-43 East, a distance of 390.4622  
Thence South 89-35-24 East, a distance of 751.1442  
Thence North 68-02-21 East, a distance of 321.0451  
Thence North 76-24-34 East, a distance of 144.1615  
Thence North 82-57-46 East, a distance of 405.0514  
Thence North 77-54-02 East, a distance of 322.0287  
Thence South 66-25-23 East, a distance of 265.9506  
Thence South 68-58-41 East, a distance of 149.3127  
Thence North 54-52-10 East, a distance of 300.6385  
Thence North 29-27-12 East, a distance of 179.7287  
Thence North 56-43-55 East, a distance of 251.9098  
Thence South 81-28-20 East, a distance of 370.4709  
Thence South 78-57-07 East, a distance of 284.3959  
Thence South 67-47-29 East, a distance of 470.2621  
Thence South 83-24-48 East, a distance of 650.0405  
Thence South 87-51-03 East, a distance of 576.6556  
Thence North 81-40-49 East, a distance of 229.7933  
Thence South 89-34-59 East, a distance of 524.0139  
Thence South 80-08-29 East, a distance of 424.8993  
Thence South 68-58-59 East, a distance of 149.1738  
Thence South 85-18-12 East, a distance of 700.7279  
Thence North 69-21-28 East, a distance of 243.2410  
Thence North 83-18-13 East, a distance of 140.9616  
Thence North 87-02-55 East, a distance of 297.3945  
Thence South 84-24-08 East, a distance of 385.7145  
Thence South 73-38-13 East, a distance of 381.5806  
Thence South 60-46-31 East, a distance of 398.7573  
Thence South 44-33-51 East, a distance of 197.5537  
Thence South 44-36-26 East, a distance of 148.2746  
Thence South 80-51-20 East, a distance of 229.6689  
Thence South 77-41-23 East, a distance of 339.1733  
Thence South 80-08-20 East, a distance of 106.1940  
Thence South 74-17-21 East, a distance of 199.1918  
Thence South 63-03-57 East, a distance of 156.1926



## Exhibit G – Description of the Water Management Plan Area

Thence South 89-35-24 East, a distance of 139.7536  
Thence North 69-52-16 East, a distance of 149.1074  
Thence South 74-22-05 East, a distance of 199.2446  
Thence South 54-02-09 East, a distance of 150.2688  
Thence South 57-32-02 East, a distance of 164.7486  
Thence South 80-08-39 East, a distance of 212.5112  
Thence South 81-28-20 East, a distance of 246.9807  
Thence South 57-34-32 East, a distance of 164.8208  
Thence South 59-51-45 East, a distance of 281.7053  
Thence South 49-18-45 East, a distance of 297.3849  
Thence South 53-35-18 East, a distance of 237.6448  
Thence South 41-33-00 East, a distance of 235.0086  
Thence South 49-00-08 East, a distance of 483.1160  
Thence South 55-49-43 East, a distance of 125.8518  
Thence South 44-35-25 East, a distance of 123.5701  
Thence South 44-36-30 East, a distance of 271.6237  
Thence South 44-36-10 East, a distance of 197.5973  
Thence South 31-11-39 East, a distance of 266.6825  
Thence South 29-50-24 East, a distance of 242.6743  
Thence South 26-09-18 East, a distance of 273.3663  
Thence South 28-55-20 East, a distance of 320.7559  
Thence South 44-37-15 East, a distance of 247.0063  
Thence South 39-21-54 East, a distance of 136.3797  
Thence South 39-30-43 East, a distance of 1115.9357  
Thence South 56-57-13 East, a distance of 518.5041  
Thence South 32-18-58 East, a distance of 290.6424  
Thence South 54-36-52 East, a distance of 213.2716  
Thence South 47-36-34 East, a distance of 234.9146  
Thence South 44-35-24 East, a distance of 172.8920  
Thence South 35-05-29 East, a distance of 150.2478  
Thence South 59-20-24 East, a distance of 242.6739  
Thence South 59-19-30 East, a distance of 242.5664  
Thence South 89-35-24 East, a distance of 139.7536  
Thence South 89-35-24 East, a distance of 139.7536  
Thence South 89-35-23 East, a distance of 52.3763  
Thence North 67-16-06 East, a distance of 132.9522  
Thence North 00-24-32 East, a distance of 52.5643  
Thence North 33-16-47 West, a distance of 62.8730  
Thence North 58-37-01 West, a distance of 203.6710  
Thence North 47-58-30 West, a distance of 210.3380  
Thence North 50-17-39 West, a distance of 248.1038  
Thence North 41-34-22 West, a distance of 235.0915  
Thence North 35-34-47 West, a distance of 237.6102  
Thence North 52-44-11 West, a distance of 261.9812  
Thence North 49-21-11 West, a distance of 297.5341  
Thence North 49-21-20 West, a distance of 297.3572  
Thence North 44-34-50 West, a distance of 271.7576  
Thence North 38-15-35 West, a distance of 335.4983  
Thence North 27-27-57 West, a distance of 336.0671  
Thence North 50-30-00 West, a distance of 360.1165  
Thence North 21-23-39 West, a distance of 470.1461  
Thence North 10-11-56 West, a distance of 284.4954  
Thence North 07-44-11 West, a distance of 246.9982  
Thence North 19-33-17 West, a distance of 204.2826  
Thence North 41-52-09 West, a distance of 259.7636  
Thence North 63-00-09 West, a distance of 429.5609

## Exhibit G – Description of the Water Management Plan Area

Thence North 43-07-25 West, a distance of 481.8419  
Thence North 42-44-17 West, a distance of 382.9316  
Thence North 28-24-46 West, a distance of 398.7864  
Thence North 28-23-07 West, a distance of 398.6130  
Thence North 38-46-12 West, a distance of 608.4346  
Thence North 72-21-04 West, a distance of 530.2057  
Thence North 77-53-41 West, a distance of 517.3797  
Thence North 84-31-51 West, a distance of 596.0885  
Thence North 68-33-48 West, a distance of 486.5318  
Thence North 67-12-28 West, a distance of 642.2768  
Thence North 76-42-02 West, a distance of 627.0671  
Thence North 60-32-28 West, a distance of 899.1237  
Thence North 75-54-13 West, a distance of 665.1543  
Thence North 66-23-19 West, a distance of 665.0515  
Thence North 80-51-29 West, a distance of 459.4613  
Thence North 74-27-13 West, a distance of 669.4943  
Thence North 63-02-06 West, a distance of 312.4704  
Thence North 73-53-13 West, a distance of 580.5569  
Thence North 76-51-43 West, a distance of 555.1563  
Thence North 72-03-23 West, a distance of 347.9228  
Thence North 71-08-13 West, a distance of 497.2030  
Thence North 69-01-58 West, a distance of 746.1565  
Thence North 46-26-06 West, a distance of 382.9739  
Thence North 55-28-34 West, a distance of 654.0611  
Thence North 65-37-13 West, a distance of 516.0126  
Thence North 73-38-41 West, a distance of 508.7107  
Thence North 70-36-46 West, a distance of 591.0123  
Thence North 69-01-55 West, a distance of 447.6429  
Thence North 64-48-32 West, a distance of 1750.7575  
Thence North 68-24-13 West, a distance of 917.8053  
Thence North 68-02-33 West, a distance of 1427.2827  
Thence North 64-07-22 West, a distance of 1625.0677  
Thence North 43-46-42 West, a distance of 876.7911  
Thence North 47-49-40 West, a distance of 655.7561  
Thence North 61-41-57 West, a distance of 335.8997  
Thence North 51-42-49 West, a distance of 199.2231  
Thence North 48-40-34 West, a distance of 346.7099  
Thence North 47-34-33 West, a distance of 235.0408  
Thence North 36-26-36 West, a distance of 174.6548  
Thence North 09-53-20 East, a distance of 106.2668  
Thence South 78-41-19 East, a distance of 462.3561  
Thence South 74-50-24 East, a distance of 343.1933  
Thence South 79-53-51 East, a distance of 726.5141  
Thence South 82-28-31 East, a distance of 422.3874  
Thence North 74-29-44 East, a distance of 254.3821  
Thence North 67-11-37 East, a distance of 399.0744  
Thence North 60-41-37 East, a distance of 281.6756  
Thence North 79-05-27 East, a distance of 445.1700  
Thence North 00-26-51 East, a distance of 192.0059  
Thence North 31-36-58 West, a distance of 164.7668  
Thence North 80-07-13 West, a distance of 637.4534  
Thence North 79-17-00 West, a distance of 585.8427  
Thence North 83-52-06 West, a distance of 702.1421  
Thence North 81-40-22 West, a distance of 634.8176  
Thence North 71-46-52 West, a distance of 513.7552  
Thence North 78-48-11 West, a distance of 746.7136

## Exhibit G – Description of the Water Management Plan Area

Thence North 70-26-56 West, a distance of 905.9868  
Thence North 65-52-49 West, a distance of 2823.3710  
Thence North 52-03-27 West, a distance of 1519.7285  
Thence North 36-15-37 West, a distance of 1023.5333  
Thence North 28-50-12 West, a distance of 1501.3573  
Thence North 03-16-40 East, a distance of 699.5825  
Thence North 40-00-38 East, a distance of 657.5376  
Thence North 55-55-24 East, a distance of 339.1029  
Thence North 56-42-53 East, a distance of 377.8643  
Thence North 26-59-25 East, a distance of 312.6105  
Thence North 71-58-47 East, a distance of 497.0045  
Thence North 80-06-42 East, a distance of 585.9547  
Thence South 87-23-25 East, a distance of 454.3462  
Thence North 42-41-35 East, a distance of 519.3043  
Thence North 65-30-29 East, a distance of 539.2736  
Thence North 85-13-27 East, a distance of 192.9198  
Thence South 77-48-22 East, a distance of 428.1601  
Thence South 79-18-05 East, a distance of 195.2692  
Thence North 69-51-14 East, a distance of 298.5136  
Thence North 28-19-28 East, a distance of 335.9044  
Thence North 31-22-11 East, a distance of 305.6825  
Thence North 56-01-15 East, a distance of 402.0238  
Thence North 82-39-26 East, a distance of 387.8052  
Thence North 78-08-24 East, a distance of 411.1519  
Thence North 60-22-03 East, a distance of 383.3919  
Thence North 59-26-14 East, a distance of 203.6705  
Thence North 05-12-58 East, a distance of 210.3711  
Thence North 54-35-53 West, a distance of 426.4772  
Thence North 11-40-50 West, a distance of 250.0533  
Thence North 49-48-05 East, a distance of 161.0345  
Thence North 48-23-44 East, a distance of 235.0392  
Thence North 00-24-37 East, a distance of 174.5675  
Thence North 23-13-24 West, a distance of 304.9592  
Thence North 70-45-15 East, a distance of 259.7676  
Thence South 78-49-18 East, a distance of 373.3326  
Thence South 72-19-46 East, a distance of 530.4007  
Thence North 68-01-44 East, a distance of 321.0687  
Thence North 61-21-05 East, a distance of 179.8988  
Thence North 15-39-15 East, a distance of 199.2007  
Thence North 00-24-37 East, a distance of 174.5675  
Thence North 09-52-20 West, a distance of 195.3932  
Thence North 38-41-05 West, a distance of 359.9806  
Thence North 38-15-35 West, a distance of 335.4983  
Thence North 24-47-03 West, a distance of 328.3020  
Thence North 18-01-30 West, a distance of 220.9698  
Thence North 00-27-21 East, a distance of 157.1300  
Thence North 24-36-33 West, a distance of 289.0680  
Thence North 26-08-49 West, a distance of 195.4380  
Thence North 37-10-21 West, a distance of 286.5286  
Thence North 71-10-31 West, a distance of 276.0141  
Thence North 89-35-24 West, a distance of 366.7594  
Thence North 47-18-37 West, a distance of 259.8516  
Thence North 02-26-15 West, a distance of 349.7545  
Thence North 02-27-48 West, a distance of 125.0526  
Thence North 02-27-50 West, a distance of 78.5106  
Thence North 02-27-01 West, a distance of 146.1957

## Exhibit G – Description of the Water Management Plan Area

Thence North 05-17-26 West, a distance of 351.1208  
Thence North 29-50-24 West, a distance of 242.6743  
Thence North 87-54-29 West, a distance of 594.1460  
Thence South 25-25-45 West, a distance of 289.0690  
Thence South 07-33-35 West, a distance of 54.1577  
Thence South 07-31-36 West, a distance of 368.3617  
Thence South 15-40-43 West, a distance of 398.2550  
Thence South 21-34-12 West, a distance of 580.7325  
Thence South 17-07-05 West, a distance of 546.9813  
Thence South 18-03-11 West, a distance of 403.3575  
Thence South 25-37-23 West, a distance of 328.0751  
Thence South 34-42-09 West, a distance of 465.0331  
Thence South 25-01-48 West, a distance of 461.1868  
Thence South 54-23-57 West, a distance of 475.1916  
Thence South 69-37-52 West, a distance of 541.7496  
Thence North 73-56-54 West, a distance of 453.4280  
Thence North 48-34-43 West, a distance of 532.4290  
Thence North 28-23-07 West, a distance of 398.6121  
Thence North 54-35-53 West, a distance of 426.4777  
Thence North 16-41-42 West, a distance of 237.5764  
Thence North 12-06-59 West, a distance of 322.1772  
Thence North 33-16-47 West, a distance of 251.7194  
Thence North 60-46-31 West, a distance of 398.7569  
Thence North 40-31-06 West, a distance of 346.7031  
Thence North 29-18-46 West, a distance of 281.6207  
Thence North 31-34-49 West, a distance of 329.6291  
Thence North 65-37-55 West, a distance of 344.1602  
Thence North 33-16-48 West, a distance of 314.8173  
Thence North 40-10-53 West, a distance of 160.9938  
Thence South 48-09-08 West, a distance of 259.5913  
Thence South 05-10-56 West, a distance of 210.3598  
Thence South 01-52-06 East, a distance of 437.1073  
Thence South 17-14-28 East, a distance of 403.1796  
Thence South 16-17-52 East, a distance of 546.9801  
Thence South 17-24-29 East, a distance of 513.9131  
Thence South 44-35-54 East, a distance of 296.2405  
Thence South 40-10-11 East, a distance of 322.2593  
Thence South 35-07-29 East, a distance of 300.4644  
Thence South 31-25-13 East, a distance of 596.0948  
Thence South 27-28-50 East, a distance of 335.9003  
Thence South 04-21-44 East, a distance of 210.3594  
Thence South 42-01-35 West, a distance of 210.4263  
Thence South 45-23-50 West, a distance of 197.5089  
Thence South 52-08-16 West, a distance of 422.9006  
Thence South 45-24-36 West, a distance of 469.3541  
Thence South 70-25-56 West, a distance of 408.8638  
Thence South 66-59-15 West, a distance of 571.0711  
Thence South 33-18-10 West, a distance of 353.7851  
Thence South 37-17-32 West, a distance of 349.2845  
Thence South 49-29-46 West, a distance of 346.7099  
Thence South 65-13-51 West, a distance of 328.1924  
Thence South 55-43-12 West, a distance of 276.0820  
Thence South 59-26-46 West, a distance of 407.4482  
Thence South 55-41-57 West, a distance of 385.3996  
Thence South 74-49-34 West, a distance of 746.6568  
Thence South 88-29-17 West, a distance of 502.1748

## Exhibit G – Description of the Water Management Plan Area

Thence North 70-28-56 West, a distance of 460.1936  
Thence North 69-36-20 West, a distance of 783.2207  
Thence North 43-33-28 West, a distance of 939.4676  
Thence North 43-33-19 West, a distance of 1036.0201  
Thence North 40-54-46 West, a distance of 2583.7541  
Thence North 31-11-35 West, a distance of 1531.8376  
Thence North 29-04-17 West, a distance of 883.9252  
Thence North 09-00-43 East, a distance of 1454.7700  
Thence North 54-11-24 West, a distance of 779.7834  
Thence North 87-31-53 West, a distance of 468.6850  
Thence North 57-43-25 West, a distance of 728.5775  
Thence North 45-11-13 West, a distance of 1123.8200  
Thence North 42-28-03 West, a distance of 639.0971  
Thence North 44-35-23 West, a distance of 993.5551  
Thence North 53-37-20 West, a distance of 1053.8761  
Thence North 45-08-03 West, a distance of 1265.5924  
Thence North 59-09-53 West, a distance of 2532.3330  
Thence North 47-35-59 West, a distance of 2350.0134  
Thence North 58-27-25 West, a distance of 2060.8752  
Thence North 66-50-08 West, a distance of 1174.2981  
Thence North 63-57-03 West, a distance of 968.6480  
Thence North 63-00-31 West, a distance of 390.6801  
Thence North 70-40-49 West, a distance of 646.2686  
Thence North 40-55-19 West, a distance of 581.6539  
Thence North 34-57-19 West, a distance of 664.1211  
Thence North 29-30-50 West, a distance of 665.0486  
Thence North 40-11-42 West, a distance of 644.1840  
Thence North 32-41-45 West, a distance of 479.4718  
Thence North 31-47-25 West, a distance of 557.3641  
Thence North 35-29-16 West, a distance of 625.5074  
Thence North 57-26-41 West, a distance of 722.0837  
Thence North 56-11-52 West, a distance of 920.3187  
Thence North 52-01-01 West, a distance of 859.5622  
Thence North 43-09-18 West, a distance of 988.3405  
Thence North 48-19-27 West, a distance of 1138.6784  
Thence North 49-20-55 West, a distance of 892.3305  
Thence North 61-42-59 West, a distance of 128.6036  
Thence North 61-46-06 West, a distance of 582.4067  
Thence North 38-45-39 West, a distance of 608.3563  
Thence North 57-50-10 West, a distance of 431.4674  
Thence North 54-15-44 West, a distance of 513.7375  
Thence North 47-06-09 West, a distance of 284.2715  
Thence North 61-17-55 West, a distance of 257.9420  
Thence North 69-55-30 West, a distance of 259.6503  
Thence North 82-28-31 West, a distance of 422.3874  
Thence North 76-33-36 West, a distance of 233.1347  
Thence North 73-00-13 West, a distance of 856.5357  
Thence North 30-02-19 West, a distance of 344.5967  
Thence North 32-29-37 West, a distance of 707.3623  
Thence North 37-17-46 West, a distance of 485.6130  
Thence North 24-21-08 West, a distance of 500.1906  
Thence North 19-14-31 West, a distance of 519.2580  
Thence North 09-53-20 East, a distance of 212.5327  
Thence North 00-24-37 East, a distance of 296.8196  
Thence North 38-14-00 West, a distance of 335.6954  
Thence North 89-35-24 West, a distance of 192.1299

## Exhibit G – Description of the Water Management Plan Area

Thence North 89-35-24 West, a distance of 209.6304  
Thence North 55-06-11 West, a distance of 339.1010  
Thence North 16-16-08 West, a distance of 182.4945  
Thence North 34-35-39 West, a distance of 213.1185  
Thence North 64-49-05 West, a distance of 250.1489  
Thence North 70-17-53 West, a distance of 370.0374  
Thence North 44-34-57 West, a distance of 345.8289  
Thence North 16-18-05 West, a distance of 364.7246  
Thence North 29-57-57 West, a distance of 587.1073  
Thence North 16-16-28 West, a distance of 182.4350  
Thence North 38-34-12 East, a distance of 310.9619  
Thence North 26-58-53 East, a distance of 507.7685  
Thence North 26-02-10 East, a distance of 484.4089  
Thence North 28-30-44 East, a distance of 296.9540  
Thence North 09-08-31 East, a distance of 229.7301  
Thence North 06-25-49 East, a distance of 333.7245  
Thence North 09-22-35 East, a distance of 336.0530  
Thence North 04-13-57 East, a distance of 262.5279  
Thence North 31-34-44 West, a distance of 164.7022  
Thence South 45-26-05 West, a distance of 98.9540  
Thence South 50-38-19 West, a distance of 136.2910  
Thence South 31-20-58 West, a distance of 203.7449  
Thence South 20-23-24 West, a distance of 204.5015  
Thence South 37-18-31 West, a distance of 174.6797  
Thence South 35-56-42 West, a distance of 300.4641  
Thence South 30-10-36 West, a distance of 281.7456  
Thence South 19-50-56 West, a distance of 314.7618  
Thence South 10-42-47 West, a distance of 390.6845  
Thence South 56-43-54 West, a distance of 251.9103  
Thence South 62-31-10 West, a distance of 335.9003  
Thence North 83-15-45 West, a distance of 316.4353  
Thence South 67-46-15 West, a distance of 226.9957  
Thence South 84-04-56 West, a distance of 316.4363  
Thence North 80-51-20 West, a distance of 229.6689  
Thence North 66-23-39 West, a distance of 398.4678  
Thence North 66-22-50 West, a distance of 665.7744  
Thence North 40-11-08 West, a distance of 805.0972  
Thence North 55-01-37 West, a distance of 954.6359  
Thence North 44-35-45 West, a distance of 419.8105  
Thence North 59-05-55 West, a distance of 344.5304  
Thence North 42-58-24 West, a distance of 432.4011  
Thence North 50-05-14 West, a distance of 384.7675  
Thence North 63-02-07 West, a distance of 312.4699  
Thence North 64-14-47 West, a distance of 367.0874  
Thence South 17-59-39 East, a distance of 110.4651  
Thence South 35-50-56 East, a distance of 324.8520  
Thence South 32-28-58 East, a distance of 353.7862  
Thence South 31-35-51 East, a distance of 329.4689  
Thence South 44-35-03 East, a distance of 420.0770  
Thence South 41-51-46 East, a distance of 519.2197  
Thence South 13-37-56 East, a distance of 287.9879  
Thence South 09-35-21 East, a distance of 301.6528  
Thence South 05-18-52 East, a distance of 175.4412  
Thence South 27-00-57 West, a distance of 117.2299  
Thence South 49-48-06 West, a distance of 161.0338  
Thence North 89-35-23 West, a distance of 157.1290

## Exhibit G – Description of the Water Management Plan Area

Thence North 72-13-07 West, a distance of 292.8656  
Thence North 38-14-40 West, a distance of 223.5397  
Thence North 49-21-21 West, a distance of 1487.2756  
Thence North 50-30-26 West, a distance of 154.9607  
Thence South 53-10-59 West, a distance of 150.5821  
Thence South 54-44-21 West, a distance of 1005.8733  
Thence South 55-06-24 West, a distance of 6992.3760  
Thence South 54-09-37 West, a distance of 1051.0319  
to the True Point of Beginning.

Perimeter: 551741.8300

Area: 2495992473.0343                      57300.1027 acres

Mapcheck Closure - (Uses listed courses & COGO Units)

Error of Closure: 0.02737                      Thence South 68-46-44 W

Precision 1: 20161685.12

## **Exhibit H – Judgment and Decree**





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UNITED STATES DISTRICT COURT  
CENTRAL DISTRICT OF CALIFORNIA

SOBOBA BAND OF LUISEÑO  
INDIANS, a federally recognized  
Indian tribe,

Plaintiff,

v.

METROPOLITAN WATER  
DISTRICT OF SOUTHERN  
CALIFORNIA, a California  
metropolitan water district; LAKE  
HEMET MUNICIPAL WATER  
DISTRICT, a California water  
district; the UNITED STATES OF  
AMERICA for the benefit of the  
Soboba Band of Luiseño Indians,

Defendants,

v.

EASTERN MUNICIPAL WATER  
DISTRICT, a California water  
district,

Third-Party Defendant.

Case No. 00-04208 GAF (MANx)  
Judge: Honorable Gary A. Feess

STIPULATED JUDGMENT

JUDGMENT AND DECREE

1           The Court has considered the Settlement Agreement dated \_\_\_\_\_, 2004,  
2 which permanently resolves the claims of the Soboba Band of Luiseño Indians,  
3 (hereinafter “Soboba Tribe”) and the United States appearing for the benefit of the  
4 Soboba Tribe for alleged infringement of its water rights in the San Jacinto River  
5 and the Canyon Sub-basin and Intake portion of the Upper Pressure Sub-basin  
6 associated therewith (collectively “Basin”) in Riverside County, California, and for  
7 damages related to historical interference with the Soboba Tribe’s rights and  
8 unauthorized use of its water. A copy of the Settlement Agreement is attached as  
9 Exhibit 1 to the Stipulation and Request for Entry of Judgment and Decree.

10           After consideration of the pleadings and papers filed in this action, the  
11 evidence presented by the Parties, and the Stipulation and Request for Entry of  
12 Judgment and Decree, it is hereby ORDERED, ADJUDGED AND DECREED:

13  
14 1.       The Settlement Agreement is hereby approved in its entirety, and this  
15 Judgment and Decree incorporates the definitions set forth therein. When used in  
16 this Judgment and Decree, the term “United States” shall mean the United States of  
17 America acting on behalf of the Soboba Tribe, and in no other capacity except as  
18 specifically otherwise provided herein.

19  
20 2.       The Soboba Tribe shall have the right to waters beneath the Soboba Indian  
21 Reservation, which shall be held in trust by the United States for the benefit of the  
22 Soboba Tribe, as follows:

23           A.     The prior and paramount right, superior to all others, to pump 9,000  
24 AFA from the Basin for any use on the Reservation and lands now owned or  
25 hereafter acquired by the Soboba Tribe contiguous to the Reservation or within the  
26 Basin.

27           B.     The Soboba Tribe’s right to pump a total of 9,000 AFA from the  
28

Basin is without regard to whether the water was naturally or artificially recharged.

1 C. In the event the Soboba Tribe is unable, except for mechanical failure  
2 of its wells, pumps or water facilities, to produce from its existing wells or  
3 equivalent replacements up to 3,000 AFA production from the Canyon Sub-basin  
4 and the remainder of its Tribal Water Right from the Intake Sub-basin, Eastern  
5 Municipal Water District and Lake Hemet Municipal Water District (“the Local  
6 Districts”) shall deliver any shortage to the Soboba Tribe. Any shortage shall be  
7 delivered at such locations as the Soboba Tribe and the Local Districts may agree,  
8 or if there is no agreement, at the wellheads where the shortage occurred. Such  
9 water may be supplied from Local District wells in either the Canyon or Intake  
10 Sub-basins, or from other sources. For any water delivered pursuant to this  
11 paragraph, the Soboba Tribe shall pay an acre-foot charge equal to its then current  
12 cost of production, and any avoided cost of treatment, from the wells where the  
13 shortage occurred, assuming pumping lifts equal to the Soboba Tribe’s averages in  
14 the respective Sub-basins over the preceding ten years.

15  
16 3. Beginning on the Effective Date of the Settlement Agreement, the Soboba  
17 Tribe’s right to pump groundwater in the exercise of its Tribal Water Right shall be  
18 subject to the following provisions:

19 A. The Soboba Tribe agrees to limit its exercise of the Tribal Water  
20 Right to 4,100 acre-feet annually, for a period of fifty (50) years commencing with  
21 the Effective Date of the Settlement Agreement, according to the schedule set forth  
22 in Exhibit F of the Settlement Agreement. Should the Soboba Tribe during that  
23 period identify a need for water in addition to the Schedule set forth in Exhibit F,  
24 the Soboba Tribe shall have the right to purchase water from the Water  
25 Management Plan at the rate then being charged to the Water Management Plan’s  
26 municipal producers.

27 B. Any use of the Tribal Water Right by an individual member of the  
28

Soboba Tribe shall be satisfied out of the water resources provided to the Soboba Tribe in the Settlement Agreement and this Judgment and Decree.

4. The foregoing rights are in full satisfaction of all of the Soboba Tribe's claims as provided in Article 5 of the Settlement Agreement.

5. This Court retains jurisdiction over this matter and the Parties for the limited and sole purpose of interpretation and enforcement of this Judgment and Decree and the Settlement Agreement.

6. The Action shall be transferred to the United States District Court, Central District of California, Eastern Division.

7. Except as may be included in the payments contemplated by the Settlement Agreement, no Party shall recover any attorney's fees or costs from any other Party.

8. The Parties have waived their rights to appeal, and therefore, this Judgment and Decree shall become final and nonappealable as of the date it is entered. This Judgment and Decree shall become enforceable as of the date the United States Secretary of the Interior causes to be published in the Federal Register a statement of findings that all actions necessary to make the settlement effective have been completed, as required by Section 10 of the Soboba Band of Luiseño Indians Settlement Act, Public Law \_\_\_\_\_.

Dated: \_\_\_\_\_, 200\_ \_\_\_\_\_  
United States District Court Judge

## **Exhibit I – Soboba Tribe’s Water Development Schedule**

<b>SETTLEMENT YEARS (FROM EFFECTIVE DATE)</b>	<b>MAXIMUM TRIBAL USAGE (AFA)</b>
1 – 5	2900
6 – 10	3215
11 – 15	3520
16 – 20	3825
21 – 25	4010
26 – 30	4020
31 – 35	4025
36 – 40	4040
41 – 45	4075
46 – 50	4100



## **Exhibit J – Description of EMWD Property**

### Parcel 1:

The North half of the Northwest quarter of Section 34 in Township 5 South, Range 2 West, San Bernardino Meridian, in the County of Riverside, State of California, according to the Official Plat thereof;

Excepting therefrom the Westerly 30 feet for road purposes as conveyed to the County of Riverside, by Deed recorded November 13, 1929 in Book 722 page 447 of Deeds, Riverside County Records;

Also excepting therefrom that portion conveyed to the County of Riverside, for road purposes, by Deed filed for record January 18, 1949 as Instrument No. 1917, Official Records.

Also except that portion conveyed to Riverside County Flood Control and Water Conservation District by Grant Deed recorded May 13, 1987 as Instrument No. 133741, Official Records.

Also except that portion conveyed to the Metropolitan Water District of Southern California, a public corporation, by Grant Deed recorded July 22, 1994 as Instrument No. 291698, Official Records.

Also except that portion conveyed to the Metropolitan Water District of Southern California by Grant Deed recorded July 22, 1994 as Instrument No. 291699, Official Records.

Also except that portion conveyed to the Metropolitan Water District of Southern California, a public corporation by Grant Deed recorded January 30, 1997 as Instrument No. 32920, Official Records.

### Parcel 2:

The South half of the Northwest quarter of Section 34, Township 5 South, Range 2 East, San Bernardino Meridian, in the County of Riverside, State of California, according to the Official Plat thereof.

Except that portion conveyed to the County of Riverside, by deed recorded April 26, 1949 in Book 1071, Page 392, Official Records.

Also except that portion conveyed to the Metropolitan Water District of Southern California, a public corporation, by Grant Deed recorded July 22, 1994 as Instrument No. 291698, Official Records.

Also except that portion conveyed to the Metropolitan Water District of Southern California, a public corporation by Grant Deed recorded January 30, 1997 as Instrument No. 32920, Official Records.

Also except that portion conveyed to the Metropolitan Water District of Southern California, a public corporation, by Grant Deed recorded May 5, 1997 as Instrument No. 154365, Official Records.





## **Exhibit K - Description of MWD Property**



**DRAFT**

**EXHIBIT A**

Diamond Valley Lake  
144-1-649C  
Grant Deed  
MWD to  
The Soboba Band of Luiseno Indians

That parcel of land conveyed to The Metropolitan Water District of Southern California by Grant Deed recorded April 25, 1996 as Instrument No. 149322 Official Records of Riverside County, California, lying within the west half of the northeast quarter of Section 34, Township 5 South, Range 2 West San Bernardino Meridian, as shown on Record of Survey filed in Book 104, pages 62 through 76, inclusive, Records of Survey of said County.

**EXCEPTING** therefrom that portion lying southerly of the northerly line of that certain parcel conveyed to the County of Riverside by Grant Deed recorded November 21, 1999 as Document No. 1999-463789 Official Records of said County.

**ALSO EXCEPTING** therefrom that portion lying northerly of the southerly line of that certain parcel conveyed to the Riverside County Flood Control and Water Conservation District by Document No. 1999-441419, recorded October 4, 1999, Official Records of said County

Containing 21.718 acres, more or less.

All as shown on EXHIBIT "B" attached hereto and made a part hereof.

**END OF DESCRIPTION**

PREPARED UNDER MY SUPERVISION

~~**DRAFT**~~

Date \_\_\_\_\_

## EXHIBIT B

W1/2NE1/4, SEC. 34, T5S, R2W, SBM,  
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

**THIS EXHIBIT IS TO BE ATTACHED TO THE LEGAL DESCRIPTION**

144-1-649A  
GRANT DEED  
TO RIVERSIDE COUNTY FLOOD CONTROL  
& WATER CONSERVATION DISTRICT  
O.R. DOC. # 1999-441419, 10-04-1999

144-1-649B  
GRANT DEED  
TO COUNTY OF RIVERSIDE  
O.R. DOC. # 1999-483789, 10-21-1999

144-1-649  
MWD FEE PARCEL  
O.R. INST. # 149322  
4-25-1986

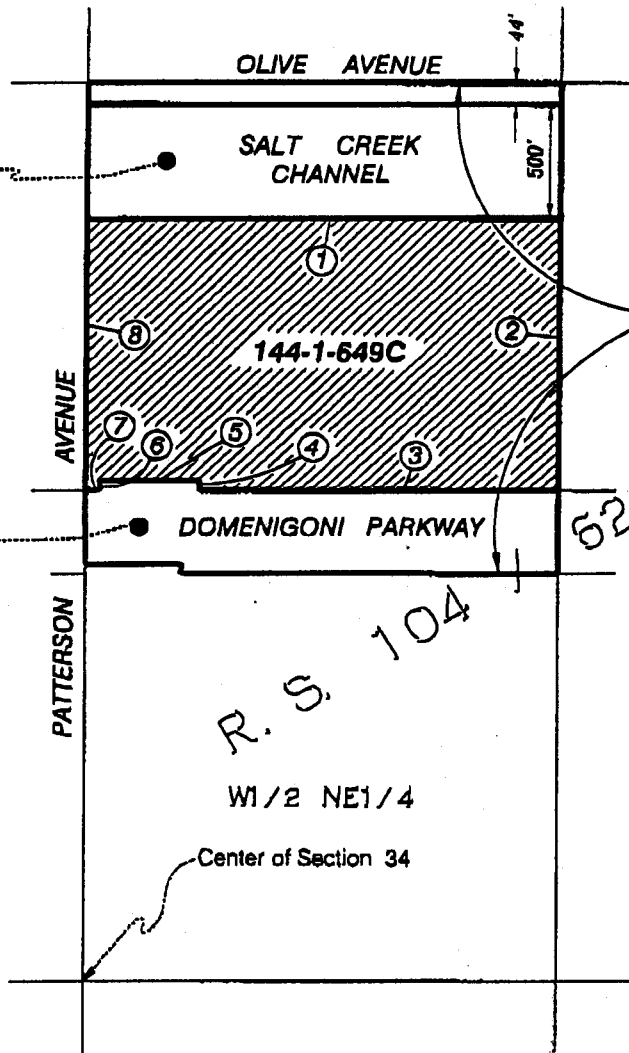

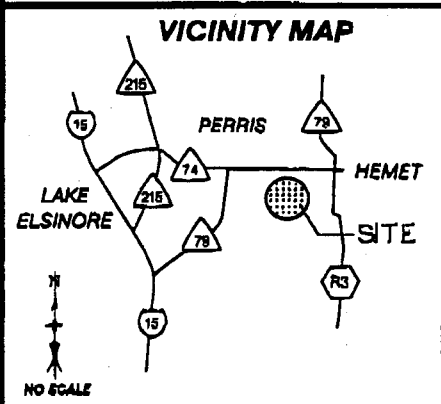


TABLE		
1	N89°49'11"E	1329.57'
2	S00°07'08"E	723.98'
3	N89°39'24"W	997.55'
4	N00°20'36"E	30.00'
5	N89°39'24"W	309.45'
6	S00°03'43"W	30.00'
7	N89°39'24"W	25.00'
8	N00°03'43"E	711.82'

### LEGEND

 = 144-1-649C  
GRANT DEED  
21.718 ACRES.



PREPARED UNDER  
MY SUPERVISION

**DRAFT**

DATE \_\_\_\_\_

**THE METROPOLITAN WATER DISTRICT  
OF SOUTHERN CALIFORNIA**

**DIAMOND VALLEY LAKE PROJECT**

**GRANT DEED**

MWD

TO

**THE SOBOBA BAND OF LUISENO INDIANS**

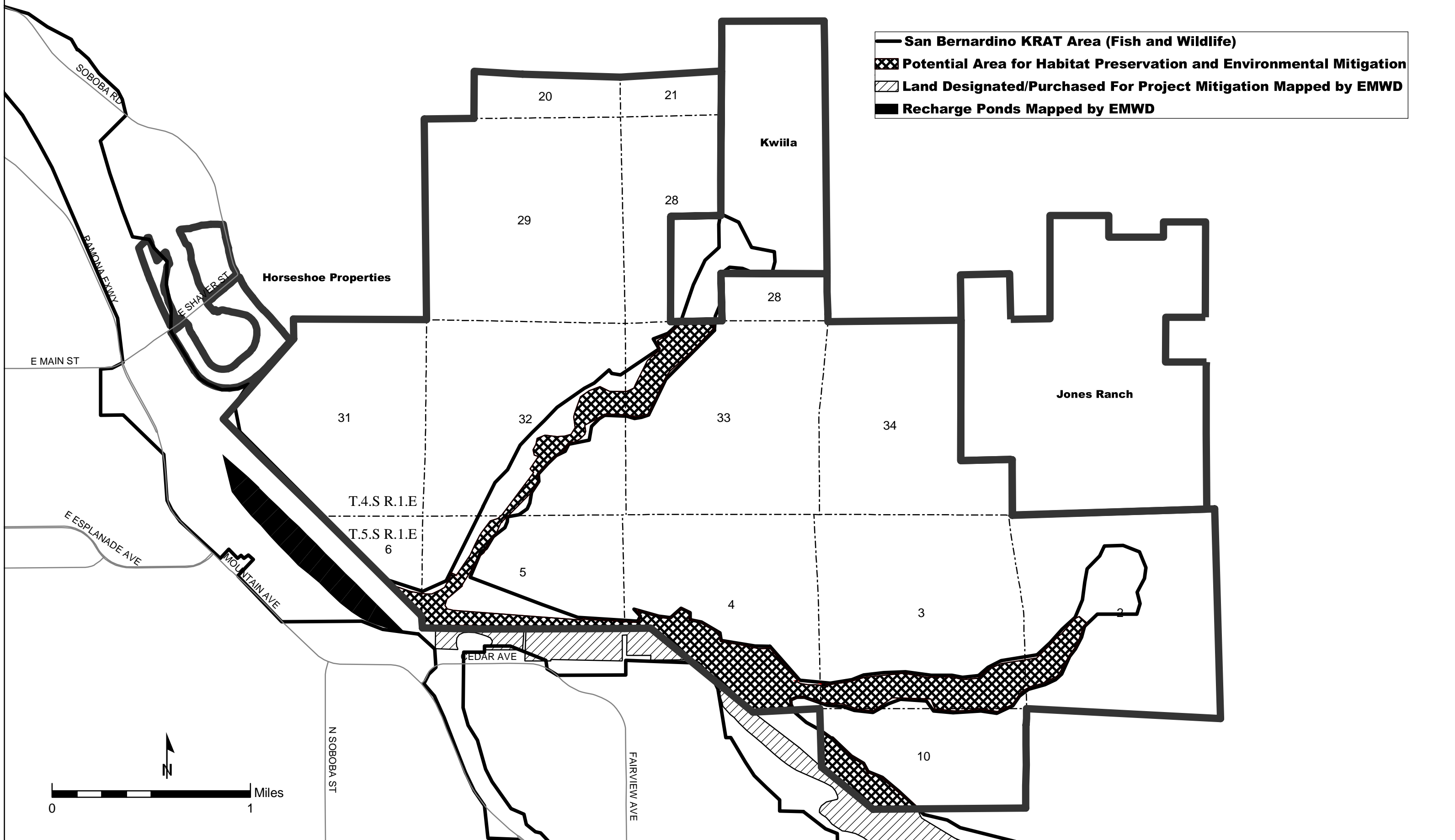
144-1-649C

## **Exhibit L – Description of LHMWD Property**

Portions of Lots 3, 4 and 5 of Fairview Tract, as shown on the plat in San Diego Map Book 006, page 307, in Riverside County, California, comprising 11.57 acres more or less.



**Exhibit M - Map of Potential Soboba Reservation Lands for Habitat Preservation and /or Environmental Mitigation**









**DRAFT**

Attorneys for \_\_\_\_\_  
\_\_\_\_\_

SUPERIOR COURT OF THE STATE OF CALIFORNIA  
COUNTY OF RIVERSIDE

EASTERN MUNICIPAL WATER DISTRICT, a California municipal water district,

Plaintiff,

v.

LAKE HEMET MUNICIPAL WATER DISTRICT, a California municipal water district;  
CITY OF HEMET, a California municipal corporation;  
CITY OF SAN JACINTO, a California municipal corporation;  
\_\_\_\_\_, an individual;  
\_\_\_\_\_, an individual;  
\_\_\_\_\_, an individual;  
\_\_\_\_\_, an individual,

Defendants.

Case No.

Judge:

STIPULATED JUDGMENT

Action Filed: \_\_\_\_\_, 200\_

Trial Date: Stipulation

FINDINGS

1  
2  
3 After consideration of the pleadings and the Stipulation for Entry of  
4 Judgment, the Court finds that:

5  
6 1. Complaint. On \_\_\_\_\_, 200\_, Plaintiff Eastern Municipal Water  
7 District ("Eastern") filed a Complaint against Defendants Lake Hemet Municipal  
8 Water District ("Lake Hemet"), City of Hemet ("Hemet"), City of San Jacinto ("San  
9 Jacinto"), \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_. The Complaint requests a  
10 declaration of Plaintiff's and Defendants' individual and collective rights to surface  
11 water and groundwater in the Canyon Sub-basin, the San Jacinto Upper Pressure  
12 Sub-basin downstream to Bridge Street, and the Hemet Basin ("Management  
13 Area") and the imposition of a physical solution to achieve the optimum,  
14 reasonable, beneficial use of the waters of the Management Area pursuant to  
15 Section 2 of Article X of the California Constitution. A map describing the  
16 boundaries of the Management Area is attached to this Judgment as Exhibit A and  
17 to the Complaint.

18  
19 2. Parties.

20  
21 A. Eastern. Eastern is a California municipal water district formed  
22 pursuant to the Municipal Water District Law, California Water Code Sections  
23 71000-73001 (West 1966), with its principal place of business in Riverside County,  
24 California. Eastern diverts surface water from the San Jacinto River, and pumps  
25 groundwater from the Management Area for use by its customers within its  
26 boundaries.

1           B.    Lake Hemet. Lake Hemet is a California municipal water  
2 district formed pursuant to the Municipal Water District Law, California Water  
3 Code Sections 71000-73001 (West 1966), with its principal place of business in  
4 Riverside County, California. Lake Hemet diverts surface water from the Santa  
5 Jacinto River and its tributaries, and pumps groundwater from the Management  
6 Area for use by its customers within its boundaries.

7  
8           C.    Hemet. Hemet is a California municipal corporation providing  
9 utility services pursuant to the California Constitution, Article XI, Section 9.  
10 Hemet pumps groundwater from the Management Area for use by its customers  
11 within its boundaries.

12  
13           D.    San Jacinto. San Jacinto is a California municipal corporation  
14 providing utility services pursuant to the California Constitution, Article XI,  
15 Section 9. San Jacinto pumps groundwater from the Management Area for use by  
16 its customers within its boundaries.

17  
18           E.    \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ are  
19 persons who own farms or other property within the Management Area, and pump  
20 groundwater from the Management Area.

21  
22           3.    Answers and Stipulation for Judgment. On \_\_\_\_\_, 200\_,  
23 Defendants filed Answers. On \_\_\_\_\_, 200\_, the Parties filed a Stipulation  
24 for Entry of Judgment.

25  
26           4.    Sole Producers. Other than the Soboba Band of Luiseno Indians, and  
27 certain overlying users not parties to this litigation, the parties claim essentially all  
28 of the rights to produce surface water and groundwater in the Management Area.

1           5.     Importance of Surface Water and Groundwater. Surface water and  
2 groundwater from the Management Area are important water supplies for  
3 agriculture, domestic and municipal use. The Parties have a mutual and collective  
4 interest in the coordinated management of such water resources to ensure that the  
5 common resource is used efficiently and reasonably, and that it is sustained and  
6 replenished.

7  
8           6.     Overdraft. It is estimated that the overdraft of the Management Area is  
9 at least 10,000 acre-feet per year. This estimate will be refined through further  
10 studies to be completed pursuant to the Water Management Plan, including data on  
11 the several sub-basins within the Management Area. Studies confirm that in recent  
12 years the total production from the Management Area, including pumping by those  
13 persons not parties to this litigation, has averaged approximately 63,800 acre-feet  
14 per year.

15  
16           7.     Importance of Judgment. The Parties have an interest in the physical  
17 solution imposed by this Judgment to promote the efficient and coordinated  
18 management of surface water and groundwater, to avoid problems from overdraft,  
19 to assist in protecting the rights of the Soboba Band of Luiseno Indians, to sustain  
20 and enhance water resources, and to resolve competing claims to surface water and  
21 groundwater.

22  
23           8.     Jurisdiction. This Court has jurisdiction to enter this Judgment  
24 declaring and adjudicating the rights of the Parties to the reasonable and beneficial  
25 use of surface water and groundwater in the Management Area, and to impose a  
26 physical solution pursuant to law, including California Constitution, Article X,  
27 Section 2.



1                   1.6    Base Production Right – the water right of a Public Agency or  
2    Class B Participant as set forth in the attached Exhibit "C."

3  
4                   1.7    Carry-Over Credit – a Party's credit against the Replenishment  
5    Assessment in a Fiscal Year, based on the Party's Adjusted Production Right or  
6    share of Imported Water not produced in prior calendar years.

7  
8                   1.8    Class A Participant – a Private Pumper who stipulates to this  
9    Judgment and participates in the Water Management Plan as defined in Sections  
10   4.3 to 4.3.5.

11  
12                   1.9    Class B Participant – a Private Pumper who stipulates to this  
13   Judgment and participates in the Water Management Plan as defined in Sections  
14   4.4 to 4.4.6.

15  
16                   1.10   Fiscal Year – the period from July 1 through June 30 of the  
17   following calendar year.

18  
19                   1.11   Fruitvale Documents –

20  
21                   (a)    Fruitvale Judgment – The Judgment and Decree entered  
22   in the Superior Court for the County of Riverside on June 4, 1954, in an action  
23   titled The City of San Jacinto, et al. v. Fruitvale Mutual Water Company, et al.,  
24   Case No. 51-546;

25  
26                   (b)    Fruitvale Mutual Water Company Sale of Assets to  
27   Eastern – That certain "Agreement for the Sale of Assets of the Fruitvale Mutual  
28   Water Company to Eastern Municipal Water District" dated September 10, 1971;



1 (c) Fruitvale Mutual Water Company Agency Agreements –  
2 The Agreement Between the City of San Jacinto and Eastern Municipal Water  
3 District dated June 15, 1972, the Agreement Between Lake Hemet Municipal Water  
4 District and Eastern Municipal Water District dated June 9, 1972, and the  
5 Agreement Between the City of Hemet and Eastern Municipal Water District dated  
6 June 13, 1972, all providing for recognition of ownership of stock in Fruitvale  
7 Mutual Water Company by the Cities and by Lake Hemet, and making provision  
8 for the continued sale of water produced through the Fruitvale facilities by Eastern  
9 to the Cities and to Lake Hemet.

10  
11 1.12 Groundwater – all water within and beneath the ground  
12 surface of the Management Area.

13  
14 1.13 Imported Water – An average of 7,500 acre feet annually of  
15 water sold by The Metropolitan Water District of Southern California to Eastern  
16 pursuant to Section 4.4 of the Soboba Band of Luiseño Indians “Settlement  
17 Agreement.”

18  
19 1.14 Management Area –the Canyon Sub-basin, the San Jacinto  
20 Upper Pressure Sub-basin downstream to Bridge Street, and the Hemet Basin, as  
21 delineated on the map attached as Exhibit "A."

22  
23 1.15 Metropolitan – The Metropolitan Water District of Southern  
24 California.

25  
26 1.16 Natural Recharge – Groundwater replenishment within the  
27 Management Area occurring from precipitation on the surface, percolation from  
28 surface flows of the San Jacinto River and its tributaries, return flows from

1 irrigation, artificial spreading or injection of such surface flows, and subsurface  
2 inflows.

3  
4 1.17 Non-Participant – a Private Pumper who elects not to  
5 participate in the Management Plan, or to be a party to this Judgment.

6  
7 1.18 Overdraft – a condition whereby pumping in the Management  
8 Area exceeds the Safe Yield thereof.

9  
10 1.19 Overlying Right – the appurtenant right of an owner of land  
11 overlying the Management Area to pump water from such land for beneficial use  
12 thereon.

13  
14 1.20 Party or Parties – Eastern, Lake Hemet, Hemet, San Jacinto  
15 and the other Persons listed in the attached Exhibit "B."

16  
17 1.21 Person – any individual, partnership, association, corporation,  
18 trust, government agency or other organization.

19  
20 1.22 Physical Solution – the Court decreed method of managing  
21 the water supply of the Management Area to maximize the reasonable and  
22 beneficial use of the waters thereof pursuant to the California Constitution,  
23 Article X, Section 2, to eliminate overdraft pursuant to the provisions of this  
24 Judgment, to protect the prior rights of the Soboba Tribe, and to provide for the  
25 substantial enjoyment of all water rights recognizing their priorities.

1                   1.23 Private Pumper – a Person who owns land with an Overlying  
2 Right or other right in the Management Area and pumps more than 25 acre-feet  
3 per year.

4  
5                   1.24 Public Agency or Agencies – Eastern, Lake Hemet, Hemet  
6 and San Jacinto.

7  
8                   1.25 Recharge or Replenish – to sink, spread or inject water  
9 directly or indirectly underground in the Management Area.

10  
11                  1.26 Recharge Right – a Party's right to the use of Recharge Water.

12  
13                  1.27 Recharge Water – water used for Recharge.

14  
15                  1.28 Recycled Water – treated wastewater which is processed and  
16 suitable for controlled use in the Management Area, including Recharge.

17  
18                  1.29 Replenishment Assessment – an acre-foot charge to be levied  
19 against each Public Agency for water pumped in excess of the sum of its  
20 respective Adjusted Production Right, its share of Imported Water, and applicable  
21 Carry-Over Credits; and against each Class B Participant for pumping in excess  
22 of its 1995-99 average production, i.e., its Base Production Right. Such  
23 assessments shall be determined by the Watermaster to be used for  
24 Replenishment Expenses.

25  
26                  1.30 Replenishment Expenses – Watermaster expenses for the  
27 acquisition of Supplemental Water supplies, for land, and for the construction,  
28 maintenance and operation of facilities necessary to replenish groundwater in the

1 Management Area, or otherwise to provide water to producers within the  
2 Management Area.

3  
4 1.31 Safe Yield – the long term, average quantity of water supply  
5 in the Management Area that can be pumped without causing undesirable results,  
6 including the gradual reduction of natural groundwater in storage over long-term  
7 hydrologic cycles.

8  
9 1.32 Settlement Agreement – that Agreement titled “The Soboba  
10 Band of Luiseño Indians Settlement Agreement” among the Soboba Tribe, the  
11 United States, as Trustee for the Tribe, Eastern Municipal Water District, Lake  
12 Hemet Municipal Water District, and The Metropolitan Water District of  
13 Southern California.

14  
15 1.33 Soboba Tribe (sometimes the “Tribe”) – the Soboba Band of  
16 Luiseno Indians.

17  
18 1.34 Soboba Action – the lawsuit entitled Soboba Band of Mission  
19 Indians, etc., v. Metropolitan, etc., et al, U.S. District Court, Central District of  
20 California, Case No. 00-84208 GAF (MANx).

21  
22 1.35 Storage Agreement – an agreement between Watermaster and  
23 a Party to store Supplemental Water by sinking, spreading, injecting or in-lieu  
24 procedures in the Management Area, and subsequently to recover such water,  
25 without payment of Replenishment Assessments.

26  
27 1.36 Storage Right – a Party's right to store and pump  
28 Supplemental Water pursuant to a Storage Agreement.

1                   1.37 Stored Water – Supplemental Water stored by a Party  
2 pursuant to a Storage Agreement.

3  
4                   1.38 Surface Water – all water tributary to the Management Area  
5 and flowing above the ground surface.

6  
7                   1.39 Supplemental Water – nontributary water imported into the  
8 Management Area, including Imported Water and Recycled Water, and in-lieu  
9 programs that reduce groundwater pumping.

10  
11                  1.40 Transfer – a temporary or permanent conveyance, assignment,  
12 sale, contract or lease of part or all of a Party's Adjusted Production Right, Carry-  
13 Over Credit, Storage Right or Recharge Right to any other Party, or a temporary  
14 assignment, contract, lease or sale of part of the Soboba Tribe's quantified water  
15 right.

16  
17                  1.41 Tribal Water Rights – the Soboba Tribe's rights to water set  
18 forth in Section 4.1 of the Settlement Agreement and Section 5 of this Stipulated  
19 Judgment.

20  
21                  1.42 Tunnel – the San Jacinto Tunnel in Riverside County,  
22 California, constructed by Metropolitan in the 1930s.

23  
24                  1.43 Watermaster – the Board with the powers and duties defined  
25 in Section 9.

26  
27                  1.44 Water Management Plan (sometimes the "Plan") – the Plan  
28 adopted by the Watermaster, as it may be modified from time to time, to

1 implement the Physical Solution, to ensure an adequate and reliable source of  
2 future water supply for the Management Area, and to protect the prior rights of  
3 the Soboba Tribe.

4  
5 2. EXHIBITS.

6  
7 The following exhibits are attached to this Judgment and incorporated in it:

8  
9 "A." Map of the Management Area and the Management Area Watershed.

10  
11 "B." List of Parties to this Judgment.

12  
13 "C." Description of each Public Agency's and Class B Participant's Base  
14 Production Right.

15  
16 3. PUBLIC AGENCIES' WATER RIGHTS.

17  
18 3.1 Base Production Right. The Public Agencies are owners of  
19 rights to pump groundwater from the Management Area as set forth in Exhibit  
20 "C." These rights are for a calendar year and were calculated as follows:

21  
22 3.1.1 The Base Production Right of Eastern is based upon its  
23 respective average pumping for calendar years 1995-1999, less an adjustment of  
24 1800 acre-feet for seepage from Metropolitan's San Jacinto tunnel, and for use of  
25 Fruitvale water. The 1995-1999 period was chosen to reflect recent production  
26 prior to the commencement of negotiations leading to this Stipulated Judgment.

1                   3.1.2 The Base Production Right of Lake Hemet is based on  
2 its average production for calendar years 1995-1999.

3  
4                   3.1.3 The Base Production Right of Hemet is based on its  
5 average production for calendar years 1995-99, plus an adjustment of 900 acre feet  
6 per year.

7  
8                   3.1.4 The Base Production Right of San Jacinto is based upon  
9 its average Production for calendar years 1995-1999, plus 500 acre-feet per year,  
10 and plus an adjustment of 900 acre feet per year. The 500 acre-feet per year has  
11 been added because San Jacinto's recent pumping does not reflect its historic  
12 production, due to water purchases and other factors.

13  
14                   3.1.5 The Base Production Rights of Hemet and San Jacinto  
15 each include 900 acre-feet per year that have been added to their respective  
16 amounts of pumping for calendar years 1995-1999. These amounts have been  
17 added to provide Hemet and San Jacinto a fair share of water from, and to resolve  
18 disputes regarding, Eastern's use of tunnel seepage, Eastern's use of Fruitvale  
19 waters, and Lake Hemet's surface stream diversions. These additional amounts of  
20 900 acre-feet per year shall be treated as the first amounts pumped by Hemet and  
21 San Jacinto, shall not be subject to reduction by the Watermaster as provided in  
22 Sections 3.2 to 3.2.2, and shall not be subject to any Administrative or  
23 Replenishment Assessments as provided in Sections 3.3 to 3.3.2, or to any other fee  
24 or charge imposed under the Management Plan.

25  
26                   3.2 Adjusted Production Rights. It is the goal of the Physical  
27 Solution to adjust Base Production Rights over time on a pro-rata basis to a level  
28 consistent with the Watermaster's determination of Safe Yield. The reduction

1 will be based on periodic demand, hydrology, recharge, and the community's  
2 ability to pay for Supplemental Water, and protection of the Tribal Water Rights.  
3 In order to implement this reduction in a phased manner, each Public Agency's  
4 Base Production Right shall be subject to adjustment as follows:

5  
6 3.2.1 Subject to Section 3.1.5, a 10% reduction from each  
7 Base Production Right in the first full year after entry of this Judgment.

8  
9 3.2.2 Until Adjusted Production Rights are consistent with the  
10 Public Agencies' share of Safe Yield, Watermaster shall determine the required  
11 reductions in Adjusted Production Rights in each subsequent year to achieve Safe  
12 Yield within a reasonable period of time as determined by the Watermaster,  
13 considering the extent of the overdraft, the economic impact on the Parties bound  
14 by this Judgment, and other relevant factors. The goal is to achieve Safe Yield over  
15 a six (6) year period assuming an annual overdraft of 10,000 acre feet. In the event  
16 the extent of the overdraft is greater or lesser than assumed, then the period of time  
17 reasonably required to reach Safe Yield may be extended or reduced accordingly.  
18 However, in no event shall any reduction be more than 10% of the Adjusted  
19 Production Rights of the prior year.

20  
21 3.2.3 A party may pump in excess of its Adjusted Production  
22 Right, without any additional Replenishment Assessment, by an amount equal to its  
23 share of the 7,500 acre feet of Imported Water that is not used by the Tribe. The  
24 amount of the Tribe's unused portion of the 7,500 acre feet shall be determined  
25 annually by the Watermaster. This provision shall apply only during such period as  
26 Imported Water is provided pursuant to Section 5.2 hereof. Shares of unused  
27 Imported Water shall be allotted in proportion to Base Production Rights, and shall  
28 be acquired and paid for pursuant to contract with Eastern.



1                   3.2.4 A Base Production Right of a Public Agency serving the  
2 land of a Class B Participant shall be increased in an amount equal to such  
3 Participant's Base Production Right, adjusted and reduced pursuant to Sections  
4 3.2.1 and 3.2.2, when the Participant's land is converted from agricultural use to  
5 water service from the Public Agency, pursuant to Section 4.4.3.

6  
7                   3.2.5 The Adjusted Production Rights of the Public Agencies  
8 may be increased by the Watermaster on a prorata basis to the extent that pumping  
9 by Class A participants, or pumping by persons not parties to this Judgment, may  
10 decrease, and the Watermaster finds that achieving the goal of maintaining the  
11 Management Area in a Safe Yield condition can still be met.

12  
13                   3.3 Public Agency Production Assessments. Public Agency  
14 pumping shall be subject to the following assessments:

15  
16                   3.3.1 An Administrative Assessment as provided in Section  
17 1.2 . The Administrative Assessment will be \$50.00 per acre-foot of water pumped  
18 in the first full year after entry of this Judgment, and such amount thereafter will be  
19 set by the Watermaster.

20  
21                   3.3.2 A Replenishment Assessment as provided in Section  
22 1.29. Pumping by a Public Agency in excess of the sum of its Adjusted Production  
23 Right, its share of Imported Water, and applicable Carry-Over Credits in order to  
24 meet increasing demands is permissible, provided that such excess extractions shall  
25 be subject to Replenishment Assessments.

26  
27                   3.4 Surface Rights. Eastern holds License Number 016667 from  
28 the State Water Resources Control Board to divert, spread and recover surface

1 flows of the San Jacinto River within the Management Area. Lake Hemet holds  
2 pre-1914 appropriative rights to divert and store surface flows in Lake Hemet,  
3 and to divert surface flows tributary to but outside of the Management Area from  
4 Strawberry Creek and from the North and South Forks of the San Jacinto River.  
5 All Parties acknowledge such Eastern and Lake Hemet rights, and the fact that  
6 they are not subject to any assessments under this Judgment; provided that any  
7 water pumped by Eastern under its License shall be included in its Adjusted  
8 Production Right.

9  
10 3.5 Fruitvale Judgment, Sale of Assets, and Agreements. The  
11 Court hereby finds that Eastern purchased all of the water rights and assets of the  
12 Fruitvale Mutual Water Company (“Fruitvale”) pursuant to the Agreement  
13 described in Section 1.11(b) hereof, and is now the owner thereof. Eastern, as the  
14 successor in interest to Fruitvale, is also a defendant in the action described in  
15 Section 1.11(a) hereof. The Court finds that the only other remaining party in  
16 such action is the plaintiff City of San Jacinto. The Court retained continuing  
17 jurisdiction in such action, and Eastern has made annual reports pursuant to the  
18 Fruitvale Judgment. Pursuant to stipulation between Eastern and San Jacinto, and  
19 in accord with the physical solution and terms of this Judgment, the Court hereby  
20 finds that the rights and obligations of the Fruitvale Judgment have been  
21 subsumed in, and superseded by, this Judgment and are no longer enforceable;  
22 that the limitations upon the place and amounts of water use in the Fruitvale  
23 Judgment, the sale Agreement, and the Agency Agreements described in Sections  
24 1.11(a), (b), (c) are no longer applicable or enforceable; and that the continuing  
25 jurisdiction of the Court under the Fruitvale Judgment, and the obligation of  
26 Eastern to report thereunder, are hereby terminated; provided, however, that none  
27 of the service area agreements included in the Fruitvale documents in Section  
28

1 1.11, or any other agreements related to mutual aid, system interties, or service  
2 areas, shall be affected by this Judgment.

3  
4 3.6 Fruitvale Agency Rights. The water rights of Hemet, San  
5 Jacinto and Lake Hemet under the several agreements with Eastern described in  
6 Section 1.11(c) hereof have been incorporated in their respective Base Production  
7 Rights under this Judgment.

8  
9 4. PRIVATE PUMPERS' WATER RIGHTS

10  
11 4.1 Recognition of Rights. The Private Pumpers are owners of  
12 Overlying or other water rights to pump from the Management Area. The Public  
13 Agencies recognize these rights, and do not intend to take or adversely impact  
14 these rights without an agreement with the owner of such rights. There is no  
15 intent to affect water use that is consistent with the historical use of the Private  
16 Pumpers.

17  
18 4.2 Non-Participation. A Private Pumper can elect not to  
19 participate in the Water Management Plan and not to formally acknowledge its  
20 existence. Such Pumpers are referred to as Non-Participants. Non-Participants  
21 shall continue to exercise whatever water rights they may hold under California  
22 law unaffected by the Plan. However, the Parties do not waive their rights to  
23 challenge any new or expanded use of water or water rights. Non-Participants  
24 will not have the option of intervening as a party under the Judgment at a later  
25 date.

26  
27 4.3 Class A Participation. A Private Pumper can stipulate to be a  
28 party to the Judgment as a Class A Participant under the following terms:

1                   4.3.1 A Class A Participant approves this Physical Solution  
2 and may vote for and/or be elected to serve as the Private Pumper representative on  
3 the Watermaster, but other than Section 4.3.4 shall not otherwise have any  
4 obligation for the implementation of the Physical Solution or the Water  
5 Management Plan.

6  
7                   4.3.2 A Class A Participant may, without any assessment by  
8 the Watermaster, pump from the Participant's property within the Management  
9 Area the amount of water that can be put to reasonable and beneficial use in the  
10 Participant's historic place of use or as authorized under California law.

11  
12                   4.3.3 A Class A Participant shall have the right to convert to  
13 Class B Participation during a grace period that shall end 3 years after the entry of  
14 this Judgment, and upon payment of the total assessments, without interest, that the  
15 Class A Participant would have paid had the Class A Participant elected to be a  
16 Class B Participant from the outset.

17  
18                   4.3.4 A Class A Participant hereby authorizes the installation  
19 of water meters, and the collection and reading of Groundwater production, level  
20 and water quality data from the Class A Participant's well(s) by personnel  
21 authorized by the Watermaster. The metering, meter reading, and other related  
22 monitoring efforts shall be at no cost to the Class A Participant, and the Class A  
23 Participant shall receive copies of the reports and information obtained upon  
24 request.

25  
26                   4.3.5 The Stipulation signed by a Class A Participant shall  
27 describe or otherwise identify the Participant's land and wells within the  
28 Management Area. The heirs, successors and assigns of such land and wells shall

1 succeed to the benefits of the Participant's rights under the Judgment, and be bound  
2 by the obligations thereof, provided that such successor intervenes as a party under  
3 the Judgment. Absent such intervention, the successor will be treated as a Non-  
4 Participant.

5  
6 4.4 Class B Participation. A Private Pumper can stipulate to be or  
7 intervene as a party under the Judgment as a Class B Participant on the following  
8 terms:

9  
10 4.4.1 A Class B Participant's annual pumping shall be limited  
11 to average annual Production during the calendar years 1995 through 1999, less any  
12 amount of water that had been used on land that was developed for non-agricultural  
13 purposes after 1999, which is the Participant's Base Production Right. The Class B  
14 Participant shall pay Replenishment Assessments on amounts in excess of its Base  
15 Production Right. A Class B Participant shall not be subject to Administrative  
16 Assessments, and until conversion to a Public Agency, such Base Production Right  
17 shall not be subject to reduction to Safe Yield. In the absence of production history  
18 for this period, the Watermaster, using all available information including power  
19 consumption records and records of water use by similar farming operations in the  
20 area, will estimate the average annual production for the Participant.

21  
22 4.4.2 The Class B Participant approves this Physical Solution  
23 and may vote for and/or be elected to serve as the Private Pumper's representative  
24 on the Watermaster;

25  
26 4.4.3 Upon conversion of a Class B Participant's land from  
27 agricultural to a use that requires water service from a Public Agency, the Public  
28 Agency shall credit, to the extent legally permissible, the Class B Participant's Base

1 Production Right, adjusted pursuant to the percentage reductions in Sections 3.2.1  
2 and 3.2.2, against any requirement then in effect for any water supply assessment  
3 requirements, or against any fees associated with water supply that the Public  
4 Agency may then have in effect. The Public Agency serving the converted land  
5 shall receive a credit added to its Base Production Right as set forth in Section  
6 3.2.4.

7  
8 4.4.4 A Class B Participant is eligible to enter into a contract  
9 with the Watermaster, or a participating Public Agency, to sell for a defined period  
10 of time the unused portion of the Class B Participant's Base Production Right,  
11 under terms and conditions approved by the Watermaster. Criteria used in  
12 consideration of such contract shall include:

13  
14 4.4.4.1 The Water Management Plan's need to acquire  
15 additional water supplies to address overdraft and recovery;

16  
17 4.4.4.2 Submission of a water conservation plan,  
18 including use of in lieu water, by the Class B Participant that will reasonably  
19 guarantee conservation of water that would otherwise be produced from the  
20 Management Area; and the amount of conserved water transferred reflects a  
21 reduction pursuant to Sections 3.2.1 and 3.2.2.

22  
23 4.4.4.3 Public policy considerations of local  
24 government jurisdictions, including economic, land use and community impacts of  
25 any proposed water conservation plan.

26  
27 4.4.5 The Class B Participant hereby authorizes the installation  
28 of meters and the collection and reading of Groundwater production, water level

1 and water quality data from the Class B Participant's well(s) by personnel  
2 authorized by the Watermaster. The metering, meter reading and other related  
3 monitoring efforts shall be at no cost to the Class B Participant, and the Class B  
4 Participant shall receive copies of the reports and information obtained upon  
5 request.

6  
7 4.4.6 The Stipulation signed by a Class B Participant shall  
8 describe or otherwise identify the Participant's land and wells within the  
9 Management Area. The heirs, successors and assigns of such land and wells shall  
10 succeed to the benefits of the Participant's rights under the Judgment, and be bound  
11 by the obligations thereof, provided that such successor intervenes as a party under  
12 the Judgment. Absent such intervention, the successor will be treated as a Non-  
13 Participant.

14  
15 4.5 In-Lieu Water Use. In the event a Private Pumper receives  
16 Supplemental Water from a Public Agency to serve an historic use in place of  
17 Groundwater, or otherwise engages in an in-lieu program, the Overlying Right of  
18 the Private Pumper shall not be diminished by the receipt and use of such  
19 Supplemental Water or by engaging in an in-lieu program.

20  
21 4.6 Future Production Participation. Any new pumper after the  
22 entry of this Judgment may intervene in this action and Judgment only as a Class  
23 A Participant.

24  
25 4.7 Replacement Wells. Re-drilling of existing wells and the  
26 drilling of new wells to replace existing wells will not be considered new  
27 production as provided in Section 4.6.

1           5.     TRIBAL WATER RIGHTS

2  
3           The Tribal Water Rights will be determined as part of a settlement  
4 among the Soboba Tribe, the United States, Eastern, Lake Hemet and Metropolitan.  
5 The settlement will be reflected in a Settlement Agreement, Congressional  
6 legislation and appropriation of funds, and a Judgment in the Soboba Action. Such  
7 settlement includes the following provisions, which shall be effective only upon  
8 fulfillment of all of the conditions precedent set forth in Article 3 of the Settlement  
9 Agreement, a copy of which is attached hereto.

10  
11           5.1     Senior Right. The Soboba Tribe shall have a prior and  
12 paramount right, superior to all others, to pump 9000 acre-feet per year (3000  
13 acre feet from the Canyon Subbasin and the remainder from a portion of the San  
14 Jacinto Upper Pressure Subbasin referred to as the Intake Subbasin), for use on  
15 the Reservation, as defined in Article 2.20 of the Settlement Agreement, and on  
16 lands now owned or hereafter acquired by the Soboba Tribe contiguous to the  
17 Reservation or within the Canyon and Intake Subbasins; provided, however, that  
18 such use shall be limited to 4100 acre-feet per year for the first 50 years after the  
19 Effective Date as set forth in the Settlement Agreement. The Tribe's right to  
20 pump applies to all Groundwater, whether replenished by Natural Recharge or by  
21 Supplemental Water. In addition, the Tribe shall have the right to purchase  
22 additional water from the Watermaster during the fifty years that its use is limited  
23 to 4,100 AFA at the rate then being charged to the Public Agencies under the  
24 Water Management Plan. In the event the Soboba Tribe is unable, except for  
25 mechanical failure of its wells, pumps or water facilities, to produce from its  
26 existing wells or equivalent replacements up to 3000 AFA production from the  
27 Canyon Sub-basin and the remainder of its Tribal Water Rights from the Intake  
28 Sub-basin, Eastern and Lake Hemet shall deliver any shortage to the Soboba



1 Tribe as provided in Section 4.1C of the Settlement Agreement. Pumping for  
2 such purpose shall not be subject to Administrative or Replenishment  
3 Assessments, and shall not be counted as part of Adjusted Production Rights.  
4

5 5.2 Metropolitan Water. The Soboba settlement provides, among  
6 other matters, that Metropolitan will use its best efforts to deliver sufficient  
7 Imported Water to yield 7,500 acre-feet per year, based upon 15 year averages,  
8 for recharge in the Management Area at its untreated replenishment water rate, or  
9 any successor rate as provided in Section 4.4A of the Settlement Agreement.  
10

11 5.3 Settlement Payment. Subject to the Effective Date of the  
12 Settlement Agreement and funding by the United States, Eastern pursuant to the  
13 terms set forth in the Water Management Plan, will pay the Soboba Tribe \$17  
14 million dollars pursuant to Article 4.7A of the Settlement Agreement in  
15 consideration, in part, of the Tribe's agreement to limit its water use up to 4,100  
16 acre-feet per year for the first 50 years after the Effective Date according to the  
17 build-up schedule set forth in the Settlement Agreement as Exhibit I. Subject to  
18 contracts with Eastern, the Public Agencies shall have the right to pump and use  
19 all Imported Water not used by the Tribe, and the unused portion of the Tribal  
20 Water Rights shall be available for use by the Parties, pursuant to their rights  
21 herein.  
22

23 5.4 Capital Facilities. Eastern on behalf of the Water  
24 Management Plan participants will receive \$10 million from the United States, to  
25 be applied to the costs of constructing and operating the Phase I capital facilities  
26 necessary to import and recharge Supplemental Water as described in the Plan.  
27 Additional grant funds from the State of California or the United States may also  
28 be available for such capital facilities. The rights of the Public Agencies to the

1 use of such facilities will be affirmed by contract as set forth in Sections 9.6.4(a)  
2 and 9.6.4(c).

3  
4 5.5 Acknowledgement of Soboba Tribe Settlement. The Parties  
5 to this Judgment hereby recognize the Tribal Water Rights, as set forth above,  
6 and the applicable provisions of the Soboba Tribe Settlement Agreement, and  
7 acknowledge that protection of Tribal Water Rights is one of the goals of the  
8 Water Management Plan.

9  
10 6. PHYSICAL SOLUTION.

11  
12 6.1 Purpose and Objective. Pursuant to California water law and  
13 the California Constitution, Article X, Section 2, the Court adopts this Physical  
14 Solution to maximize reasonable beneficial use of Surface Water, Groundwater  
15 and Supplemental Water for water users in or dependent upon the Management  
16 Area, to eliminate overdraft, to protect the prior rights of the Soboba Tribe, and to  
17 provide the Parties with the substantial enjoyment of their respective rights,  
18 including, the priorities thereof.

19  
20 6.2 Need for Flexibility. In order to adapt to potential changes in  
21 hydrology, land use, and social and economic conditions, the Physical Solution  
22 must provide some degree of flexibility and adaptability. Accordingly, the Court  
23 retains broad jurisdiction to supplement the discretion granted to the  
24 Watermaster.

25  
26 6.3 Rights to Groundwater. Groundwater in the Management  
27 Area may occur from: natural recharge; spreading operations of natural flows;  
28 recharge with Supplemental Water acquired with Assessment funds; return flows,

1 following or in-lieu recharge programs financed with Assessment funds. All such  
2 Groundwater shall be available to support the pumping of the Parties as allowed  
3 herein, and shall not be the property of any individual Party. Subject to the  
4 provisions of Section 6.7.2, this Section does not preclude any Party, pursuant to  
5 a Storage Agreement, from storing Supplemental Water at its own cost, retaining  
6 title thereto, and pumping such water without Assessment.

7  
8 6.4 Resolution of Priorities. By reason of the long and continuous  
9 overdraft of the Management Area, the contribution of all parties to the overdraft,  
10 the economies that have developed on the basis of the overdraft, the severe  
11 economic disruption that could occur under strict priorities and the doctrines of  
12 prescription and laches, the complexity of determining appropriate priorities,  
13 and the need to make the maximum beneficial use of the water resources of the  
14 State, the Parties are estopped and barred from asserting specific priorities or  
15 preferences to the pumping of groundwater in the Management area, except as  
16 provided in this Judgment, and the Court finds that the provisions of this  
17 Judgment provide for the substantial enjoyment of the respective rights of the  
18 Parties.

19  
20 6.5 Water Management Plan. The Watermaster will approve and  
21 implement a Water Management Plan to enforce and implement the Physical  
22 Solution, and may modify such Plan as conditions require, subject to the  
23 provisions of the Settlement Agreement. The Plan will also facilitate and  
24 accommodate the settlement of the water rights of the Soboba Tribe, and shall be  
25 subject to the approval of the Soboba Tribe and the United States as trustee for  
26 the Tribe. The Parties agree that the Plan shall incorporate and serve to  
27 implement the following goals:  
28

1                   6.5.1 Groundwater levels within the Management Area have  
2 generally been declining for a number of years, and the Management Area is  
3 presently in a condition of Overdraft. The Plan will, within a reasonable period,  
4 eliminate Groundwater Overdraft and provide for excess production by  
5 implementing a combination of available water resources management elements.  
6 These elements include: reduction in natural Groundwater production; enhanced  
7 Recharge with native and/or Supplemental Water; increased use of recycled water;  
8 in-lieu replenishment; acquisition and development of Supplemental Water; and  
9 water conservation programs.

10  
11                   6.5.2 The Management Area is expected to experience  
12 residential, commercial, and industrial growth and development over the next  
13 decade. The estimated amount of Supplemental Water that will be necessary to  
14 provide for and adequately serve this new growth and development is 15,000 acre  
15 feet per year. The Water Management Plan shall accommodate the orderly  
16 expansion of existing water production and service systems, and provide a clear  
17 planning process for meeting these projected growth trends.

18  
19                   6.5.3 The Plan should be implemented in a manner to protect  
20 and/or enhance Management Area water quality. However, implementation of  
21 certain elements of the Plan may cause limited localized water quality degradation.  
22 If such degradation impedes the then current beneficial uses of water by any Public  
23 Agency in the Management Area, the Watermaster shall implement appropriate  
24 mitigation measures to ensure the water supply to the affected Public Agency, and  
25 to bear the associated costs. The standards for local water quality degradation shall  
26 be defined in the Plan.

1                   6.5.4 The Water Management Plan should serve to support the  
2 pursuit of cost-effective water supply and water treatment by the Public Agencies,  
3 both individually and collectively.

4  
5                   6.5.5 The Water Management Plan should serve to protect  
6 Tribal Water Rights.

7  
8                   6.5.6 The Watermaster shall implement a monitoring program  
9 to ensure that Plan activities follow best management and engineering principles to  
10 protect Management Area water resources, and to compile and analyze data on  
11 groundwater production, water levels, water quality and groundwater in storage.

12  
13                   6.6 Replenishment Program. The groundwater replenishment  
14 program shall be administered by the Watermaster. The program shall include:  
15 the acquisition of Supplemental Water; the collection and expenditure of  
16 Replenishment Assessments; the recharge of the Management Area; and the  
17 construction and operation of all necessary facilities, including but not limited to,  
18 development of surface and sub-surface percolation and injection facilities. In  
19 addition, a source of Recharge Water for agencies contributing to the Settlement  
20 Payment described in Section 5.3 will be Imported Water provided by  
21 Metropolitan under the Settlement Agreement, and not used by the Soboba Tribe.

22  
23                   6.6.1 Priority for replenishment will be based on an equitable  
24 apportionment of available replenishment water among the sub-basins after full  
25 consideration of:

26  
27                   6.6.1.1 The Public Agency's participation in the  
28 payment in the Settlement Payment described in Section 5.3.



1 Region requirements, and the provisions of Article 4.2 of the Settlement  
2 Agreement, and may be used in any sub-basin where such requirements are met.  
3

4           6.7    Storage Rights. Unused storage capacity may exist in the  
5 Management Area, and this capacity will be managed by the Watermaster  
6 conjunctively with natural and available Supplemental Water supplies.  
7

8           6.7.1 Subject to availability of Assessment funds and unused  
9 storage capacity as determined by Watermaster, the Management Area may be  
10 Recharged when water is available, to be drawn upon by the Public Agencies in  
11 later years when such Supplemental Water may not be available.  
12

13           6.7.2 Unused storage capacity, as determined by Watermaster,  
14 and pursuant to a Storage Agreement, may be used for “put and take” operations of  
15 Supplemental Water that is paid for by any Public Agency provided that:  
16

17           6.7.2.1 Such operations do not interfere with the rights  
18 of any other pumper, or with the use of the storage capacity for recharge and  
19 storage under the Water Management Plan.  
20

21           6.7.2.2 The Watermaster shall have the first right to  
22 purchase any water available for Recharge for use under the Plan.  
23

24           6.7.2.3 Later recovery of Stored Water shall exclude  
25 losses, and shall not be subject to either Administrative or Replenishment  
26 Assessments.  
27

1                                   6.7.2.4   Such recovered water may be used anywhere  
2 within the service area of the Party.

3  
4                                   6.7.2.5   Such Stored Water may be transferred while  
5 still in storage.

6  
7                                   6.7.3   Any conjunctive use programs for the benefit of territory  
8 outside of the Management Area shall be subject to the Watermaster and the  
9 governance provisions herein. Any storage, conjunctive use programs by third  
10 parties, or in-lieu recharge programs financed with assessment funds, shall be  
11 subject to the Watermaster and the governance provisions herein; provided that  
12 Metropolitan has the right under the Soboba Settlement Agreement to use up to  
13 40,000 acre-feet of storage capacity in the San Jacinto Upper Pressure Sub-basin for  
14 the pre-delivery of water required under Section 5.2.

15  
16                                   6.7.4   Eastern and Lake Hemet have previously provided water  
17 for replenishment of the Management Area. As of May 1, 2005 these amounts, less  
18 losses, were 12,694 acre-feet for Eastern and 950 acre-feet for Lake Hemet Such  
19 Parties shall have Recharge Rights to recover these amounts, less any future losses,  
20 without either Administrative or Replenishment Assessments, and may be used to  
21 offset excess pumping in lieu of Replenishment Assessments. The water available  
22 under such Recharge Rights shall be pumped within 15 years of the entry of this  
23 Judgment, but at not more than 2000 acre-feet in a single year. The Public  
24 Agencies shall notify the Watermaster when such Recharged Water is being  
25 pumped, and in what amounts, and the Watermaster shall keep an accounting of the  
26 amounts remaining. The use of such credits shall be interpreted and administered  
27 so as not to increase the replenishment obligations or assessments of those parties  
28 without such past credits, or after such credits have been fully used.



1                   6.7.5 The accounting for recovery of Stored Water or  
2 Recharge Water from the Management Area shall not include any water that  
3 escapes therefrom and migrates downstream beyond the Management Area. Losses  
4 will be calculated based upon best engineering principles.  
5

6                   6.8 Recycled Water. The use of Recycled Water produced by  
7 Eastern can be of substantial benefit in providing additional water in the  
8 Management Area. The Watermaster shall have a right of first refusal to  
9 purchase all recycled water produced from treatment facilities serving the  
10 Management Area that is not subject to then existing contracts. Such recycled  
11 water may be used for recharge or direct use within the Management Area..  
12

13                   6.8.1 Each Public Agency may implement its own Recycled  
14 Water program, for direct use, subject to the availability of recycled water. The  
15 Public Agency shall be responsible for financing, operating and maintaining the  
16 facilities necessary for that program. The Watermaster will support loan or grant  
17 applications, and the Public Agencies will work to integrate Recycled Water into  
18 the Water Management Plan, to the extent economically feasible while meeting  
19 regulatory standards.  
20

21                   6.8.2 Currently only Eastern has Recycled Water available for  
22 Recharge. To the extent such Recycled Water is not acquired by the Watermaster  
23 for use under the Plan, the water if recharged in the Management Area shall remain  
24 the property of Eastern and may be pumped (less losses) without Replenishment  
25 Assessments.  
26  
27  
28

1                   6.9    Assessment Program. The assessment program contemplated  
2 by the Water Management Plan shall be administered by Eastern pursuant to a  
3 contract with the Watermaster pursuant to the provisions of Section 9.6.4(e).

4  
5                   6.9.1 All Assessments shall be used for Replenishment  
6 Expenses and Administrative Expenses.

7  
8                   6.9.2 Subject to the limitations in this Judgment, each Public  
9 Agency that produces less than its Adjusted Production Right and share of Imported  
10 Water, and any Class B Participant producing less than its Base Production Right,  
11 shall have the following Carry-Over Credit:

12  
13                   6.9.2.1 Carry-Over Credit shall be the difference in  
14 acre-feet between a Party's Adjusted Production Right and share of Imported Water,  
15 or the Class B Participant's Base Production Right, and the Party's actual  
16 production in a calendar year.

17  
18                   6.9.2.2 The Carry-Over Credit may be applied to  
19 reduce the amount of acre feet upon which a Party must pay a Replenishment  
20 Assessment. Carry-Over Credits are transferable among the Parties, and may be  
21 retained for more than one calendar year. The Parties shall notify the Watermaster  
22 if a Carry-Over Credit is being retained.

23  
24                   6.9.2.3 The Watermaster shall keep an accounting of  
25 all Carry-Over Credits.

26  
27                   6.9.3 All Watermaster assessment invoices shall be payable to  
28 Watermaster within 60 days of notice. Any delinquent assessments shall bear

1 interest at a rate to be set by the Watermaster. Watermaster is entitled to recover its  
2 reasonable expenses in collecting any assessment, including attorney's fees and  
3 costs.

4  
5 6.10 Export. The Public Agencies may export water outside the  
6 Management Area, on a temporary basis, upon approval by the Watermaster.  
7 However, any water exported shall be replenished with an appropriate amount of  
8 similar or better quality water as determined by Watermaster. Water exports by  
9 the Public Agencies shall not interfere with the Water Management Plan or any  
10 other Public Agency's operations. The Water Management Plan will set forth the  
11 specific criteria for the export of water, including, but not limited to, conjunctive  
12 use programs.

13  
14 6.11 Capital Facilities. Each Public Agency shall continue to own  
15 its existing capital facilities for water supply and management, subject to the  
16 provisions of Section 9.6.6. However, the Phase I capital facilities necessary to  
17 implement the Water Management Plan shall be owned and operated by Eastern,  
18 pursuant to the Plan and in a fiduciary capacity for the benefit of all Parties under  
19 this Judgment, pursuant to Sections 5.4; 9.6.4(a); 9.6.4(c).

20  
21 6.11.1 Financing of Water Management Plan facilities may be  
22 funded by Assessments, regional capital fees, loans and grants, contributions for  
23 storage rights by Metropolitan or other third-parties, and municipal bonds.  
24 Responsibility for the costs of future capital facilities necessary to implement the  
25 Plan, beyond the Phase I facilities, shall be determined by the Watermaster and  
26 apportioned on relative benefit to be derived by each Public Agency.

1                   6.11.2 Any of the participating Public Agencies may propose  
2 projects to be included in the Water Management Plan to increase the Management  
3 Area water supply. Such proposals, after evaluation by the Watermaster, shall be  
4 included or rejected. If the Watermaster chooses to reject the proposal, the  
5 proposing Public Agency may implement the rejected project at its own cost so  
6 long as it does not significantly impact the implementation of the Management Plan  
7 and/or interfere with the ongoing production by the Public Agencies.  
8

9                   7.     INJUNCTION.  
10

11                   Each Party and his, her or its officers, agents, employees, successors  
12 and assigns, is enjoined and restrained from:  
13

14                   7.1     Producing water from the Management Area without payment  
15 of required Administrative Assessments.  
16

17                   7.2     Producing water from the Management Area in excess of the  
18 Party's Adjusted Production Right and share of Imported Water, or the Base  
19 Production Right in the case of a Class B Participant, without payment of  
20 required Replenishment Assessments.  
21

22                   7.3     Transferring Production Rights except as authorized in this  
23 Judgment.  
24

25                   7.4     Recharging water in the Management Area except as  
26 authorized in this Judgment.  
27  
28

1                   7.5    Storing or exporting water except as authorized in this  
2 Judgment.

3  
4                   8.    CONTINUING JURISDICTION.

5  
6                   8.1    Full Jurisdiction. Full jurisdiction, power and authority is  
7 reserved to the Court as to all matters contained in this Judgment, including  
8 expedited intervention by successors in interest to Private Pumpers, except:

9  
10                   8.1.1    To redetermine Base Production Rights of the Public  
11 Agencies or Class B Participants.

12  
13                   8.1.2    As otherwise limited by law.

14  
15                   8.2    Motion to Interpret. By motion to the Court, upon 30 days  
16 written notice and after hearing, any Party or Watermaster may request the Court  
17 to make such further or supplemental orders to interpret, enforce, carry-out or  
18 amend this Judgment. Any such motion shall be reviewed de novo by the Court.  
19 Any such motion shall be served on all Parties and Watermaster at the addresses  
20 on the Watermaster's notice list.

21  
22                   9.    WATERMASTER.

23  
24                   9.1    Composition. The Watermaster shall consist of a board  
25 composed of one elected official selected by each of the Public Agencies and one  
26 Private Pumper representative selected by the Class A and Class B Private  
27 Pumpers.

1                   9.2    Terms. Each member of the Watermaster shall serve until  
2 replaced by the Public Agency or Private Pumpers that made the original  
3 appointment.

4  
5                   9.3    Removal and Replacement. Any Watermaster member may  
6 be removed and replaced by the same procedure used in his or her appointment.  
7

8                   9.4    Voting. Each member of the Watermaster shall have one  
9 vote. Four affirmative votes shall be required in order to constitute Watermaster  
10 action on each of the following matters. (1) any change sought in the form of  
11 governance; (2) any change in voting requirements; (3) retaining the services of  
12 legal counsel and Advisor; (4) establishing, levying, increasing or decreasing all  
13 assessment amounts; (5) adopting or amending an annual budget; (6) determining  
14 the extent of overdraft and quantifying safe yield; (7) determining Adjusted  
15 Production Rights; (8) decisions regarding the financing of Supplemental Water  
16 or facilities, other than any financing provisions included in this Stipulated  
17 Judgment as provided in Sections 5.3, 5.4, 5.5 hereof; (9) decisions regarding  
18 ownership of facilities, other than ownership of the Phase I facilities described in  
19 the Water Management Plan, which shall be owned by Eastern Municipal Water  
20 District, subject to a right of use by those parties participating in the financing  
21 thereof; (10) policies for the management of the Management Area; (11) and any  
22 decision that involves a substantial commitment by the Watermaster, including  
23 any contracts for conserved water. All other actions by the Watermaster shall  
24 require three affirmative votes.  
25

26                   9.5    Court Review. Any action by the Watermaster, or any failure  
27 to act by virtue of insufficient votes, may be reviewed by the Court on motion by  
28

1 any party, with notice to all other parties. The Court’s review shall be de novo,  
2 and the Court’s decision shall constitute action by the Watermaster.

3  
4 9.6 Powers and Duties. In order to implement the provisions of  
5 this Judgment, the Watermaster shall have the following duties and powers:  
6

7 9.6.1 Water Management Plan. Watermaster shall develop  
8 and implement a Water Management Plan, with such additions and modifications as  
9 may from time to time be appropriate, and shall administer the provisions of this  
10 Judgment. The Water Management Plan shall be subject to approval by the Court,  
11 by the Soboba Tribe, and by the United States.

12  
13 9.6.2 Independent Counsel. The Watermaster shall retain  
14 independent legal counsel to provide such legal services as the Watermaster may  
15 direct.

16  
17 9.6.3 Advisor. The Watermaster shall retain either an  
18 independent engineering firm or qualified individual experienced in hydrology to  
19 evaluate and analyze the data collected by Eastern, and any conclusions based  
20 thereon, and to make recommendations to the Watermaster, referred to herein as  
21 “Advisor.” The Advisor shall also provide general coordination among Eastern, the  
22 Technical Advisory Committee and the Watermaster with respect to their respective  
23 functions, and perform such executive functions as the Watermaster may direct.  
24 The Watermaster reserves the right to refer any matter it may choose to any person  
25 it may select for assistance in carrying out its duties under this Judgment.  
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9.6.4 Operations and Other Functions.

(a) *Operations – Phase I Facilities.* The Phase I Facilities (including capital facilities and spreading basins, as more particularly defined in the Water Management Plan) are either existing facilities of Eastern that will be expanded or improved as part of the Water Management Plan, or are new facilities that will be integrated into Eastern’s existing facilities and will be owned by Eastern. Pursuant to the terms and conditions of contracts to be entered into between Eastern and the Watermaster, and Eastern and the other Public Agencies, Eastern shall construct, install, and operate the Phase I Facilities consistent with the Water Management Plan.

(b) *Operations – Other Facilities.* The Water Management Plan anticipates the need for the construction and installation of other facilities in order to accomplish the goals of the Judgment. Such facilities may be constructed, installed and operated under contract with the Watermaster, by a member of the Watermaster or, in circumstances approved by the Watermaster, by other responsible entities.

(c) *Purchase of Water for Groundwater Recharge.* The Soboba settlement requires Metropolitan to use its best efforts to deliver an average of 7500



1 acre-feet per year of Imported Water for recharge of the Management Area. This  
2 supply is dedicated first to satisfy the rights of the Soboba Tribe as provided in the  
3 Settlement Agreement. Such portion of the supply that is not used by the Soboba  
4 Tribe will be available to those Parties who have participated in the cost thereof.  
5 Subject to the approval of the Watermaster, Eastern shall enter into a contract with  
6 Metropolitan for the purchase and delivery of such Imported Water supply. Eastern  
7 shall also purchase as a member agency of Metropolitan, or otherwise acquire, such  
8 additional supplies of water as may be directed by the Watermaster to implement  
9 the Water Management Plan, subject to availability and transmission capacity. All  
10 such water delivered by Metropolitan, or otherwise acquired by Eastern, and all  
11 Eastern facilities used to deliver, recharge and recapture such water, shall be subject  
12 to rights of use by the Parties entitled thereto. Such rights of use shall be confirmed  
13 in detail in written contracts with Eastern. Recycled water is also available for direct  
14 and indirect groundwater recharge from Eastern's wastewater treatment facilities  
15 serving the Management Area. The Watermaster shall have a right of first refusal  
16 to purchase all recycled water produced from such plant that is not subject to then  
17 existing contracts. Nothing contained herein shall limit the right of the  
18 Watermaster to acquire Imported or Supplemental Water supplies from any of the  
19 Parties, or from other responsible entities.  
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27 (d) *Data Collection.* The Watermaster shall provide for the  
28 collection and maintenance of all production, water level, water quality, and other

1 technical data necessary under or required by the Water Management Plan  
2 (“Data”). Pursuant to the terms and conditions of a contract to be entered into  
3 between Eastern and the Watermaster, Eastern shall collect and maintain all such  
4 Data and transmit such Data to the Watermaster, its Advisor, and the Technical  
5 Advisory Committee as directed by the Watermaster. The foregoing clause does not  
6 restrict the ability of the Watermaster to enter into other agreements with other  
7 members of the Watermaster and/or private firms and individuals for the collection  
8 of Data.

9  
10 (e) *Accounting*. The Watermaster shall provide for the levy, billing,  
11 and collection of all assessments provided for under the Judgment, for the payment  
12 of costs and expenses of the Watermaster, and for the performance of such  
13 accounting and related functions as may be required in connection with those  
14 functions (“Accounting Functions”). All funds collected shall be held in a  
15 segregated account. All expenses and disbursements shall be separately accounted  
16 for. Pursuant to the terms and conditions of a contract to be entered into between  
17 Eastern and the Watermaster, Eastern shall initially perform the Accounting  
18 Functions for Watermaster. The foregoing clause does not restrict the ability of the  
19 Watermaster to enter into other agreements with other members of the Watermaster  
20 and/or private firms and individuals to provide some or all of the Accounting  
21 Functions.

22 9.6.5 Technical Advisory Committee. There has been a  
23 Technical Advisory Committee that has functioned throughout the development of  
24 the Water Management Principles and Plan, and this Stipulated Judgment. That  
25 Committee has been composed of such managerial and technical representatives as  
26 the individual parties decide to appoint. Each party has paid the costs of its own  
27 representatives, and shall continue to do so in the future. The Technical Advisory  
28 Committee shall continue to function, and to provide such technical assistance as

1 the Watermaster may request. The Technical Advisory Committee shall make  
2 recommendations to the Watermaster's Advisor and to the Watermaster on all  
3 matters requiring four votes for Watermaster action, and shall receive from Eastern  
4 all data associated with such matters for its review and evaluation. The Technical  
5 Advisory Committee and its members shall also function as a way to keep the City  
6 Councils, Boards of Directors and participating Private Pumpers fully informed  
7 about the implementation of this Judgment.  
8  
9

10                   9.6.6 Reservation of Rights. The Watermaster reserves the  
11 right to assume, on its own, any functions set forth in Section 9.6.4, except as  
12 provided in Section 9.6.4(a), and to undertake all other acts required to implement  
13 the Plan and this Judgment, so long as it is legally capable of performing such  
14 functions. The Watermaster, if it should choose, may also act through or in  
15 conjunction with the other Public Agencies, or through a Joint Powers Agency  
16 composed of all the Public Agencies hereunder. Except as specifically provided in  
17 Section 9.6.4(a) with respect to Eastern's facilities used in Phase I, the Watermaster  
18 shall have no right to use or acquire the water facilities of any of the Parties,  
19 without their consent, provided that it is the intent of the Parties that their individual  
20 facilities will be available where appropriate to implement the Water Management  
21 Plan, upon terms equitable to all parties, and consistent with their respective  
22 obligations to their own customers.  
23

24                   9.6.7 Rules and Regulations. The Watermaster may make such  
25 rules and regulations as may be necessary for its own operations as well as for the  
26 operation of the Plan and this Judgment, subject to Court approval. Meetings of the  
27 Watermaster shall be subject to the Brown Act .  
28

1                   9.6.8 Reports to Court. The Watermaster shall file annually  
2 with the Court, and serve on all Parties, a report regarding its activities during the  
3 preceding year, including an audited statement of all accounts and financial  
4 activities.

5  
6                   9.6.9 Notice to Parties. Watermaster shall maintain a current  
7 list of the Parties and their addresses for notice purposes. Rules for service shall be  
8 governed by the California Code of Civil Procedure and the California Rules of  
9 Court. Each Party shall notify Watermaster in writing of the name and address for  
10 its receipt of notice and service under this Judgment. A Party may change this  
11 information by written notice to Watermaster. Notice shall be deemed sufficient if  
12 directed to the most recent address provided by the Watermaster.

13  
14                   9.7 Watermaster Records. Watermaster's records shall be kept at  
15 the office of Eastern unless changed by the Watermaster and approved by the  
16 Court. These records shall be treated as public records under the Public Records  
17 Act. Cal. Gov't Code §§ 6250-6277 (West 1995 and Supp. 2002).

18  
19                   10. MISCELLANEOUS.

20  
21                   10.1 Intervention After Judgment. Any Person who is not a Party  
22 and who proposes to Produce water from the Management Area, or who is an  
23 heir, successor or assign of an existing party, may become a Party to this action  
24 and Judgment, subject to the conditions contained herein, by filing a petition in  
25 intervention. The petition may be filed and approved ex parte with notice to the  
26 Watermaster. Such intervener shall thereafter be a Party bound by this Judgment,  
27 and entitled to the rights and privileges accorded under this Judgment.

LAW OFFICES OF  
BEST BEST & KRIEGER LLP  
3750 UNIVERSITY AVENUE  
P.O. BOX 1028  
RIVERSIDE, CALIFORNIA 92502

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10.2 Loss of Rights. No right adjudicated in this Judgment shall be lost by non-use, abandonment, forfeiture or otherwise, except upon a written election by the owner of the right filed with Watermaster, or by order of the Court upon noticed motion and after hearing.

10.3 Attorney's Fees and Costs. No Party shall recover any attorney's fees or costs in this proceeding from any Party.

Dated: \_\_\_\_\_, 200\_

\_\_\_\_\_  
Judge of the Superior Court

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EXHIBIT B  
List of Parties to this Judgment

1. Parties

- A. Eastern Municipal Water District (“Eastern”)
- B. Lake Hemet Municipal Water District (“Lake Hemet”)
- C. City of Hemet (“Hemet”)
- D. City of San Jacinto (“San Jacinto”)

2. Class A Participants

- A.
- B.
- C.
- D.

3. Class B Participants

- A.
- B.
- C.

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Exhibit C  
Base Production Rights

1. Public Agencies

Agency Name	Base Production Rights (Acre-feet per year)
Eastern Municipal Water District	10,869
Lake Hemet Municipal Water District	11,063
City of Hemet	6,320
City of San Jacinto	4,031

2. Class B Participants









**Eastern Municipal Water District:**

<b>Name</b>	<b>Title</b>
David J. Slawson	Board President, Division 5
Ronald Sullivan	Board Vice President, Division 4
Joe Kuebler, CPA	Director Division 2, EMWD Board Treasurer
Philip E. Paule	Director Division 1
Randy A. Record	Director Division 3, MWD Director

**Lake Hemet Municipal Water District:**

<b>Name</b>	<b>Title</b>
Frank Douglas Marshall III	Board President
Patrick Searl	Board Vice President
Herbert C. Forst	Board Secretary
John S. Fricker	Board Treasurer
Larry Minor	Director

**City of Hemet:**

<b>Name</b>	<b>Title</b>
Marc Searl	Mayor
Lori Van Arsdale	Vice- Mayor
C. Robin Resser Lowe	Councilperson
Brian Christie	Councilperson
Eric Mc Bride	Councilperson
Steve Clayton	City Clerk
Judith Oltman	City Treasurer

**City of San Jacinto:**

<b>Name</b>	<b>Title</b>
Jim Ayres	Mayor
Chris Carlson	Vice- Mayor
Dale Stubblefield	Council Member
Robert Ritchie	Council Member
John Mansperger	Council Member







## PRINCIPLES FOR WATER MANAGEMENT

1. Water Management Plan. These Principles, approved by the appropriate authority of each party, are intended to form the basis from which the parties will develop a Water Management Plan (“Management Plan”) for the area described in Section 2. The Management Plan is being developed to ensure an adequate and reliable source of future water supply. The Management Plan is also intended to facilitate and accommodate a settlement of the claims of the Soboba Band of Luiseno Indians (“Soboba Tribe”).
2. Management Area. The area included in the Management Plan consists of the Canyon Sub-basin and the San Jacinto Upper Pressure Sub-basin, downstream to Bridge Street, and the Hemet Basins (“Management Area”). The Management Area is shown upon the attached map.
3. Pumpers within the Management Area. The primary pumpers within the Management Area are: Eastern Municipal Water District (“Eastern”), Lake Hemet Municipal Water District (“Lake Hemet”), City of San Jacinto (“San Jacinto”), and City of Hemet (“Hemet”) (individually

“Public Agency,” collectively “Public Agencies”); the Soboba Tribe (not a Management Plan participant); and approximately 62 individual agricultural and other private pumpers who pump more than 25 acre-feet per year (“Private Pumpers”).

4. Goals. The parties agree that the Management Plan shall incorporate and serve to implement the following goals:

A. Allowing for Future Urban Growth. The parties acknowledge that the Management Area will continue to experience residential, commercial, and industrial growth and development, and that existing water production and service systems will need to be expanded to meet this growth. It is estimated that at least 15,000 afy incremental water supply capacity over the existing base production rights of the Public Agencies must be dedicated to adequately serve this growth. The Management Plan should serve and provide a clear planning process so that each affected Public Agency will be able to meet these projected growth needs.



B. Water Quality Protection. Implementation of the Management Plan should protect and/or enhance Management Area water quality. However, implementation of certain elements of the Management Plan may cause limited localized water quality degradation. If such degradation impedes the then current beneficial use of any Public Agency in the Management Area, the Watermaster described in Section 22 (“Watermaster”) shall implement appropriate mitigation measures to ensure water supply to the affected Public Agency and bear the associated costs. The standards for local water quality degradation shall be defined in the Management Plan.

C. Cost-Effective Management. The Management Plan should serve to support the pursuit of cost-effective water supply and water treatment by the Public Agencies, both individually and collectively.

D. Overdraft. The groundwater levels within the Management Area have generally been declining for a number of years, and the Management Area is presently in a condition of overdraft. It is recognized that the Management Plan will, within a reasonable period, eliminate groundwater overdraft and enhance operational yield by

implementing a combination of available water resources management elements. These elements include: reduction in native groundwater production; enhanced recharge with native, imported and/or recycled water; development of supplemental supplies such as imported and recycled water; and water conservation programs.

E. Monitoring. The Watermaster shall implement a monitoring program to ensure the Management Plan activities follow best management and engineering principles to protect Management Area water resources.

5. Public Agencies Base Production Rights.

A. The base production rights of Eastern, Lake Hemet and Hemet in the first year of the Management Plan shall be based upon their average production for calendar years 1995-1999. This period was chosen to reflect these Public Agencies' recent pumping, and shall determine their base production rights.

B. The base production right of San Jacinto in the first year of the Management Plan, shall be based upon its average production for calendar years 1995-1999, plus 500 afy. The 500 afy is added because San Jacinto's recent production does not reflect its historic production because of water purchases and other factors.

C. Pursuant to Section 21 below, for the life of the Management Plan, Hemet and San Jacinto shall each add an additional 900 afy to their base production rights. The additional 900 afy shall not be subject to reduction by the Watermaster as provided in Section 5.D and shall not be subject to any Administrative or Replenishment Assessments as provided in Section 6, or other fee or charge imposed under the Management Plan.

D. It is the goal of the Management Plan to adjust base production rights over time to a level consistent with the Watermaster's calculation of the Public Agencies' share of safe yield for the Management Area. Based on current information, it appears that the total reduction in base production rights will need to be approximately 35%. The ultimate reduction will be based on periodic demand, hydrology, recharge and

availability of imported water. In order to implement this reduction in a phased manner, each Public Agency's base production rights shall be subject to adjustment as follows:

(1) A 10% reduction from the base production rights in the first year of the Management Plan; and

(2) Until base production rights are consistent with the Public Agencies' share of safe yield, Watermaster shall determine the reductions in base production rights in each subsequent year of the Management Plan, to achieve this goal within 6 years of approval of the Management Plan. Each reduction shall not be more than 10% of the base production right of the prior year.

(3) Pursuant to Section 7(A)(2)(b), upon conversion of a Class B Participant's land from agricultural to a use that requires water service from a Public Agency, the Public Agency shall receive an increase in its base production rights equal to the adjusted base production right of the Class B Participant.

6. Public Agency Production Assessments. The Public Agency production will be subject to the following assessments:

A. An Administrative Assessment on each acre-foot pumped by a Public Agency up to its adjusted base production right. The parties contemplate that the Administrative Assessment will be \$50.00 per acre-foot of water pumped in the first year of the Management Plan, and that such amount will thereafter be set by the Watermaster.

B. A Replenishment Assessment on each acre-foot pumped by a Public Agency in excess of its adjusted base production right equal to the cost of providing a like quantity of supplemental water to recharge the Management Area, including recharge losses. Pumping by a Public Agency in excess of its adjusted base production right in order to meet increasing demands is expected and permissible, provided that such excess extractions shall be subject to the Replenishment Assessment. The costs of providing a like quantity of supplemental water shall include the costs of water, O&M costs of the replenishment system, capital recovery and other administrative costs. Currently, the total of these cost items is estimated to be in the range

of \$300 to \$400 per acre-feet; the actual amount will reflect the costs at the time incurred.

7. Private Pumpers Water Rights. The Public Agencies recognize the overlying water rights of the Private Pumpers, and do not intend to take or adversely impact these rights without an agreement with the owner of such rights. The Management Plan will lay out alternatives for the retention, protection, or transfer of such rights, leaving selection of the alternative to the individual overlying water rights owner. A Private Pumper can elect not to participate in the Management Plan and not to formally acknowledge its existence. Such Pumpers shall be referred to herein as “Non-Participants”; such Pumpers shall continue to exercise whatever water rights they may hold under California law unaffected by the Management Plan. There is no intent to affect water use that is consistent with the historical use of the Private Pumpers. However, other pumpers under the Management Plan do not waive their rights to challenge new or expanded water rights. Non-Participants will not have the option of joining the program at a later date. The alternatives available to participants are as follows:

A. (1) Class A Participation. A Private Pumper can elect to sign a written agreement acknowledging the existence of the Management Plan. Such Pumper shall be a Class A Participant and shall be entitled to vote for and/or be elected to serve as the Private Pumper representative on the Management Plan's governing board or body described in Paragraph 22 below, but shall not otherwise be required to participate in the Management Plan implementation. A Class A Participant may, without any financial assessment by the Watermaster, pump from his/her/its property within the Management Area the amount of water that can be put to reasonable and beneficial use on the Pumper's land as may be authorized under California law. Class A Participants shall have the right to convert to Class B Participation during a grace period that shall end three (3) years after the effective date of the Management Plan, as approved by a judgment of the Superior Court for Riverside County, upon payment of the total assessments the Pumper would have paid had the Pumper elected to be a member of Class B from the outset, plus interest.

(2) Class B Participation. A Private Pumper can become a Class B Participant by electing to limit annual pumping to the Pumper's average annual production during the calendar years 1995 through

1999 and to pay replenishment assessments on amounts in excess of that average annual production. A Class B Participant shall enjoy the following benefits of Plan Participation:

a. Vote for and/or be elected to serve as the Private Pumper's representative on the Management Plan's Governing Board;

b. Upon conversion of Pumper's land from agricultural use to a use that requires water service from a participating Public Agency, Public Agency shall credit to the extent legally permissible, Pumper or Pumper's successor-in-interest's adjusted production right, using the formula in Section 5 towards satisfaction of any requirement then in effect for water supply assessment requirements. Furthermore, Pumper or Pumper's successor-in-interest shall be given a credit for Pumper's adjusted production right using the formula in Section 5 towards any fees associated with water supply that the Public Agency may then have in effect. The Public Agency serving the converted land shall receive a credit to its production right as set forth in Section 5.



c. To the extent the Pumper's land is not covered under Section 7(A)(2)(b), Pumper will be eligible to enter into a contract with the Management Plan, or a participating Public Agency, to sell for a defined period of time some portion of Pumper's adjusted production right, under terms and conditions mutually agreed upon by the Pumper and the Management Plan. Criteria used in consideration of such contract shall include:

(i) Management Plan's need to acquire additional water supplies to address Basin overdraft and recovery;

(ii) Submission of a water conservation plan, including use of in lieu water, by Pumper that will reasonably guarantee conservation of water that would otherwise be produced from the Basin;

(iii) Public policy considerations of local government jurisdictions, including economic and land use impacts of proposed water conservation plan.

B. In-Lieu Water Use. In the event a Private Pumper (or successor) receives recycled and/or imported water from a Public Agency to serve an overlying use in place of groundwater, or otherwise engages in an in-lieu program, the overlying water right of the Private Pumper (or successor) shall not be diminished by the receipt and use of such recycled and/or imported water or by engaging in an in-lieu program.

C. Well Monitoring. To become a Class A or B Participant, a Private Pumper shall authorize the metering of the Pumper's well(s) and the collection of groundwater level and quality data, and the reading thereof by Management Plan personnel. The metering and reading shall be at no cost to the Pumper, and the Pumper shall receive copies of the reports and information obtained upon request.

D. Future Production Participation. Any new Pumper after the effective date of the Management Plan, as approved by a judgment of the Superior Court for Riverside County, can only participate as a Class A Participant as described in Section 7A(1).

E. Replacement Wells. The redrilling of existing wells and the drilling of new wells to replace existing wells will not be considered new private production.

8. Capital Facilities. Each Public Agency shall continue to own its existing capital facilities for water management. However, capital facilities may be jointly constructed and owned by the Management Plan. Joint financing of such facilities may be funded by regional capital fees, loans and grants, contributions for storage by The Metropolitan Water District of Southern California (“Metropolitan”) or other third-parties, and municipal bonds. Responsibility for the costs of any existing and future capital facility of the Management Plan should be apportioned among the Public Agencies based on relative benefit to be derived by each Public Agency. Any of the participating Public Agencies may propose projects to be included in the Management Plan to increase Management Area water supply. Such proposals, after evaluation by the Watermaster, shall be included or rejected. If the Watermaster chooses to reject the proposal, the proposing Public Agency may implement the rejected project as long as it does not significantly impact the implementation of the Management Plan and/or interfere with the ongoing production by the Public Agencies.

9. Soboba Tribe's Water Rights. The Soboba Tribe's water rights shall be determined as part of a settlement among the Soboba Tribe, the United States, Eastern, Lake Hemet and Metropolitan. Major points of the proposed settlement are:

A. The Soboba Tribe shall have a senior, prior right in the Canyon and San Jacinto Upper Pressure Sub-basins of 9000 afy, but its use shall be limited to a maximum of 4100 afy during the first 50 years after the effective date of the settlement.

B. The Soboba Tribe shall have the right to purchase replenishment water for use pursuant to the Principles of Settlement at the Management Plan replenishment rate.

C. The Soboba settlement provides that, among other things, Metropolitan will use its best efforts to deliver sufficient water to yield a 15-year average of 7,500 afy to the Management Plan until 2035 at its long-term interruptible rate (currently \$233/af).

D. Subject to full funding of the settlement by the United States, the Management Plan shall pay the Soboba Tribe \$10 million.

E. The Management Plan will also pay the Soboba Tribe \$7 million. A Public Agency's payment of its share of this amount is optional, but in order to obtain the benefits of the low-cost Metropolitan water delivered pursuant to the settlement, a Public Agency shall pay its share of this amount.

F. The Management Plan will receive \$10 million for capital improvements from the United States, and all unused Soboba Tribe water based on the Public Agency's participation in the payment in Section 9(E) above.

10. Implementation of These Principles. These Interim Principles for Water Management shall be used by the parties as a basis for the preparation of the Management Plan, and a stipulated judgment in a water rights adjudication. As explained below, the Management Plan shall be administered by the Watermaster. The Watermaster will be under the continuing jurisdiction of the Court.

11. Assessment Program. The assessment program contemplated by the Management Plan shall be administered by the Watermaster subject to the governance provisions herein. All payments shall be made to the Watermaster and shall be maintained in a separate restricted fund. All assessments shall be used exclusively to acquire imported, recycled or Metropolitan water for the recharge of the Management Area, and for the facilities and operational and administrative expenses associated with the assessment and recharge programs. Subject to Management Plan approval, assessments may also be used by affected parties to acquire and deliver water for direct use by the parties, in lieu of pumping.

12. Replenishment Program. The replenishment program contemplated by the Management Plan shall also be administered by the Watermaster. The program shall include: the acquisition of supplemental water supplies (including imported, recycled and Soboba Tribe water); the expenditure of assessments; the recharge of the Management Area; and the construction and operation of all necessary facilities, including but not limited to, development of surface and sub-surface percolation and injection facilities. Priority for replenishment will be based on an equitable

apportionment of available replenishment water among the sub-basins after full consideration of: the Public Agency's participation in the payment in Section 9(E) above; the Management Area conditions; water demands; the availability of storage capacity to accommodate the recharge of natural flows; the availability of appropriate conveyance facilities; and the availability of replenishment or imported water. The Watermaster is encouraged to take advantage of surplus imported water that occasionally may be available at low cost, and to use available assessment funds to bank such recharge against future pumping in excess of adjusted production rights.

13. Rights to Groundwater. Groundwater in the Management Area may occur from: natural recharge; spreading operations of natural flows; replenishment with imported, recycled or Metropolitan water acquired with assessment funds; or in-lieu recharge programs financed with assessment funds. All such groundwater shall be available to support the pumping of the parties as allowed herein, and shall not be the property of any individual party, subject to the provisions of Section 14.

14. Storage Rights. The parties recognize that unused storage capacity exists in the Management Area, and the Management Plan contemplates that this capacity will be managed conjunctively with available imported and recycled water supplies. Subject to availability of the Management Plan fund for assessments and unused storage capacity as determined by Watermaster, the Management Area will be recharged and water stored therein when such supplies are available, and drawn upon by the Public Agencies in dry years when such supplemental water supplies may not be available. In addition, unused storage capacity as determined by Watermaster may be used for “put and take” operations of recycled or imported water that is paid for by any party to the Management Plan provided that:

A. Such operations do not interfere with the rights of any other pumper, or with the use of the storage capacity for recharge and storage under the Management Plan;

B. Water available for recharge is purchased first, as needed, for the Management Plan;



C. Later recovery of stored water shall exclude losses; and

D. Such recovered water may be used anywhere within the service area of the party.

Any conjunctive use programs for the benefit of territory outside of the Management Area shall be subject to the governance provisions herein. Any storage, conjunctive use programs by third parties or in-lieu recharge programs financed with assessment funds shall be subject to the governance provisions herein.

15. Spreading Operations. The Public Agencies shall independently or jointly operate their respective facilities to maximize the existing spreading and recharge operations of natural flow in the Management Area.

16. Recharge Water Quality. Consistent with Section 4(E) above all water used to replenish any sub-basin in the Management Area shall meet the Regional Water Quality Control Board requirements, and may be used in any sub-basin where such requirements are met.

17. Recharge Losses. The accounting for storage recharge of the Management Area shall not include any water that escapes therefrom and migrates downstream beyond the Management Area. Losses will be calculated based upon best engineering principles.

18. Recycled Water. The use of recycled water can be of substantial benefit in providing additional water in the Management Area. Each Public Agency may implement a recycled water program, including the ownership, operation and construction of all necessary facilities, and the application for and administration of any loan or grant applications. The Management Plan will support loan or grant applications, and the Public Agencies will work to integrate recycled water into the Management Plan to the extent economically feasible while meeting regulatory standards. Subject to existing recycled water contracts, the Management Plan will have a first right of refusal to purchase excess recycled water for recharge. Priority shall be given to Management Area recharge for the use of recycled water which originates therefrom.

19. Export. The Public Agencies may export water outside the Management Area, on a temporary basis, upon approval by the Watermaster.

However, any water exported shall be replenished with an appropriate amount of similar or better quality water as determined by Watermaster. Also, water exports by the Public Agencies shall not interfere with the Management Plan or any other Public Agency's operations. The Management Plan will set forth the specific criteria for the export of water, including, but not limited to, conjunctive use programs.

20. Credits. Recharge credits documented before the Management Plan shall be calculated pursuant to the Management Plan. Future recharge credits shall be established by replenishment of water or by not exercising the full, adjusted base production right, and shall be calculated pursuant to the Management Plan.

21. Tunnel Seepage, Stream Diversions, Fruitvale To resolve Eastern's use of Tunnel seepage, Lake Hemet's stream diversions and Eastern's use of Fruitvale water, 900 afy shall be added to Hemet's adjusted base production and 900 afy shall be added to San Jacinto's adjusted base production right as discussed in Section 5 above. This is intended to provide Hemet and San Jacinto a fair share of water from these disputed issues.

22. Governance. The Management Plan will be administered by a Watermaster as follows:

A. The governing board of the Watermaster shall consist of one elected official from each of the Public Agencies and one Private Pumper representative selected by the Private Pumpers who participate in the Management Plan. Each member shall have one vote.

B. The Watermaster's duties shall include: determining safe yield; determining replenishment needs; determining annual adjusted base production rights; purchasing and selling imported and recycled water; constructing future capital facilities; establishing assessment rates; initiating necessary conservation and drought management measures; and implementing other responsibilities identified in the Management Plan documents.

Dated: \_\_\_\_\_, 2004.

EASTERN MUNICIPAL WATER  
DISTRICT

By: \_\_\_\_\_

Dated: \_\_\_\_\_, 2004.

LAKE HEMET MUNICIPAL WATER  
DISTRICT

By: \_\_\_\_\_

Dated: \_\_\_\_\_, 2004.

CITY OF HEMET

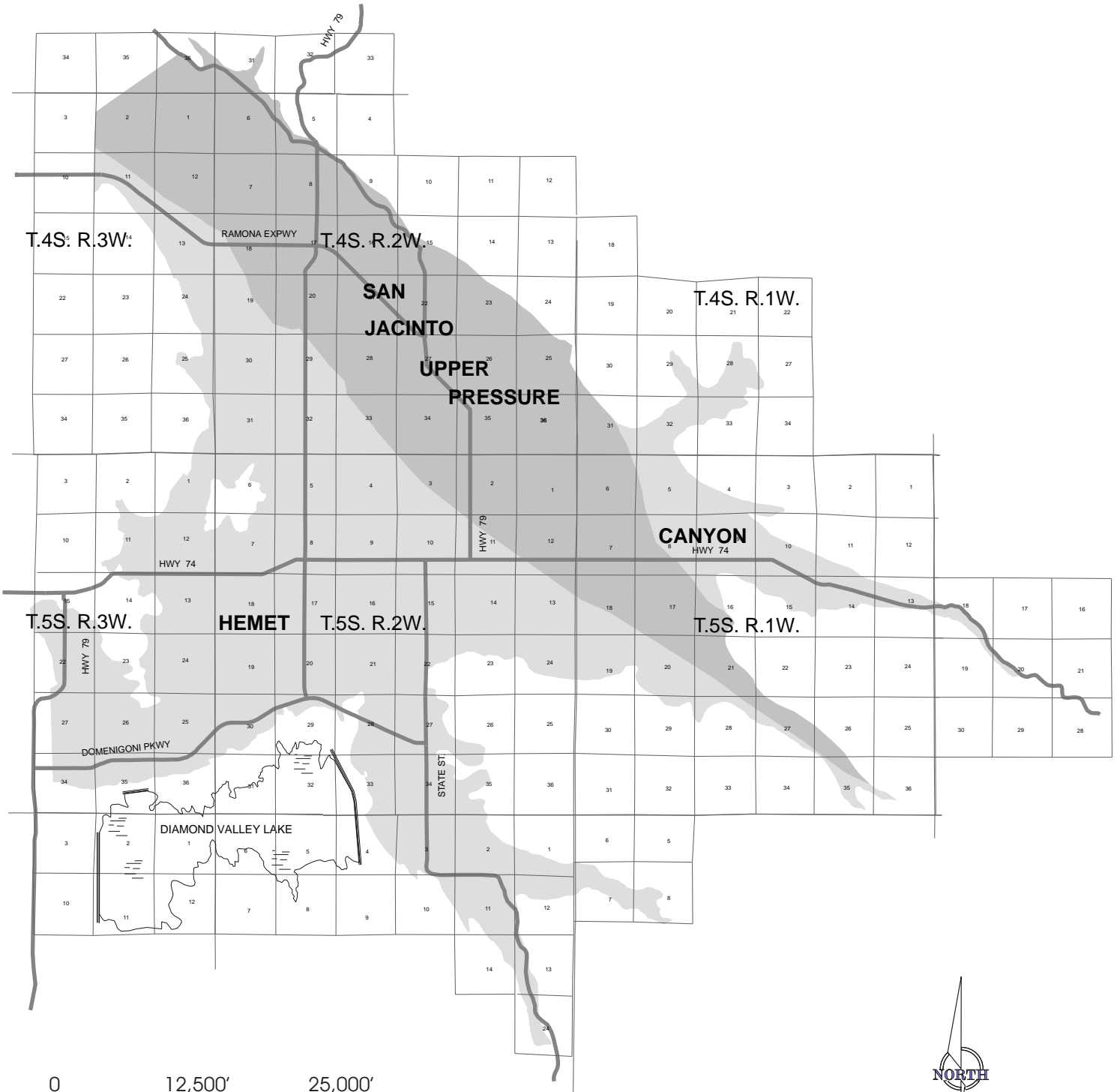
By: \_\_\_\_\_

Dated: \_\_\_\_\_, 2004.

CITY OF SAN JACINTO

By: \_\_\_\_\_

# MANAGEMENT AREA



1" = 12,500'  
05-29-2003







Appendix E. List of Committee Attendees

The attendees of the PC who contributed to this plan:

<b>Name</b>	<b>Title</b>	<b>Affiliation</b>
Debi Lara	Administrative Assistant	City of Hemet
Marc Searl	Member, City Council	City of Hemet
Steve Temple	City Manager	City of Hemet
Eric Vail	Attorney	City of Hemet
Lori VanArsdale	Member, City Council	City of Hemet
Dennis Williams	Consultant	City of Hemet
Chris Carlson-Buydos	Member, City Council	City of San Jacinto
Bob Hargreaves	Attorney	City of San Jacinto
Steven Johnson	Consultant	City of San Jacinto
Barry McClellan	City Manager	City of San Jacinto
Ken Shaw	Member, City Council	City of San Jacinto
Samson Haile-Selassie	Project Manager	DWR
Eric Hong	Project Manager	DWR
Dale Schafer	Facilitator	DWR
Ali Taghavi	Consultant	DWR
Mike Garner	Asst. General Manager	EMWD
Richard Hall	Member, BOD	EMWD
Behrooz Mortazavi	Asst. General Manager	EMWD
Tony Pack	General Manager	EMWD
Ravi Ravishanker	Deputy General Manager	EMWD
Gerry Shoaf	Attorney	EMWD
Rodger Siems	Member, BOD	EMWD
Herb Forst	Member, BOD	LHMWD
John Fricker	Member, BOD	LHMWD
Rob Lindquist	General Manager	LHMWD
Art Littleworth	Attorney	LHMWD
John Loncar	Consultant	LHMWD
Tom Wagoner	General Manager	LHMWD
Bruce Scott	Private Water Producer	Private Water Producer
Jim Conner	Private Water Producer	Private Water Producer
Bill Corwin	Private Water Producer	Private Water Producer
Gary McMillan	Private Water Producer	Private Water Producer
Randy Record	Private Water Producer	Private Water Producer
Joe Garcia	Environmental Specialist	Soboba Tribe

Appendix E. List of Committee Attendees

The members of the TC who contributed to this plan:

<b>Name</b>	<b>Title</b>	<b>Affiliation</b>
Mike Gow	Director of Public Works	City of Hemet
Dennis Williams	Consultant	City of Hemet
Steve Johnson	Consultant	City of San Jacinto
Maurice Hall	Project Manager	DWR
Eric Hong	Project Manager	DWR
Dale Schafer	Facilitator	DWR
Ali Taghavi	Consultant	DWR
Khos Ghaderi	Director of Operations	EMWD
Joe Lewis	Director of Engineering Svcs.	EMWD
Fahkri Manghi	Hydrologist	EMWD
Behrooz Mortazavi	Asst. General Manager	EMWD
Peter Odencrans	Public Affairs Officer	EMWD
Ralph Phraner	Senior Geologist	EMWD
Ravi Ravishanker	Deputy General Manager	EMWD
John Loncar	Consultant	LHMWD
Tom Wagoner	General Manager	LHMWD
Dick Kelley	Private Water Producer	Private Water Producer
Bruce Scott	Private Water Producer	Private Water Producers
Joe Garcia	Environmental Specialist	Soboba Tribe
Peter Pyle	Consultant	Soboba Tribe

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Appendix E. List of Committee Attendees

The representatives of each Public Agency and DWR at CAM Committee meetings who contributed to this plan:

<b>Name</b>	<b>Title</b>	<b>Affiliation</b>
Steve Temple	City Manager	City of Hemet
Eric Vail	Attorney	City of Hemet
Dennis Williams	Consultant	City of Hemet
Bob Hargreaves	Attorney	City of San Jacinto
Steve Johnson	Consultant	City of San Jacinto
Barry McClellan	City Manager	City of San Jacinto
Samson Haile-Selassie	Project Manager	DWR
Eric Hong	Project Manager	DWR
Dale Schafer	Facilitator	DWR
Ali Taghavi	Consultant	DWR
Mike Garner	Asst. General Manager	EMWD
Behrooz Mortazavi	Asst. General Manager	EMWD
Tony Pack	General Manager	EMWD
Chuck Rathbone	Director of Finance	EMWD
Gerry Shoaf	Attorney	EMWD
Art Littleworth	Attorney	LHMWD
John Loncar	Consultant	LHMWD
Tom Wagoner	General Manager	LHMWD



**LHMWD SURFACE WATER DIVERSION**

**EMWD IMPORTED WATER USAGE**

**EMWD RECYCLED WATER PRODUCTION**

**EMWD RECYCLED WATER SALES**



**EMWD  
Historical Water Supply Components (AF)**

<b>Year</b>	<b>Groundwater*</b>	<b>Imports</b>	<b>Recycled Water**</b>	<b>Sales to other Agencies</b>	<b>Conveyance Water</b>	<b>Total</b>
1984	11,763	2,228	0	(1,811)	0	12,181
1985	11,859	971	0	(2,301)	0	10,529
1986	11,605	605	0	(1,750)	0	10,460
1987	12,217	2,889	37	(3,549)	0	11,594
1988	14,539	4,463	42	(2,929)	0	16,116
1989	14,762	5,712	40	(4,500)	0	16,014
1990	16,533	5,774	24	(8,417)	0	13,915
1991	12,051	378	24	(2,667)	0	9,786
1992	11,810	92	25	(2,149)	0	9,778
1993	10,483	0	1	(155)	0	10,329
1994	12,253	0	0	(1,823)	0	10,430
1995	11,055	50	7	(707)	0	10,406
1996	16,349	0	57	(1,902)	(2,583)	11,921
1997	16,282	183	31	(1,133)	(3,120)	12,242
1998	14,692	0	4	(417)	(3,656)	10,623
1999	17,458	0	0	(1,658)	(3,130)	12,670
2000	17,634	198	0	(2,236)	(2,690)	12,906
2001	15,127	1,761	0	(2,853)	(907)	13,128
2002	15,370	0	0	(4,895)	(929)	9,546
2003	13,693	325	0	(1,864)	(686)	11,468
2004	12,515	5,636	0	(4,283)	0	13,868

\* Groundwater includes conveyance water

\*\* Recycled water does not include water sold to land owners for irrigation

**LHMWD**  
**Historical Water Supply Components (AF)**

<b>Year</b>	<b>Groundwater</b>	<b>Purchases from EMWD</b>	<b>Surface Water</b>	<b>Total</b>
1984	4,901	1811	*	*
1985	6,609	2074	6,557	15,241
1986	6,961	1750	6,078	14,789
1987	6,929	3396	4,418	14,743
1988	7,427	2792	6,424	16,642
1989	6,481	4338	6,837	17,656
1990	5,829	8382	1,902	16,114
1991	7,559	2300	2,057	11,917
1992	7,770	2149	2,206	12,125
1993	6,748	155	6,064	12,967
1994	9,780	1820	1,633	13,233
1995	9,166	653	4,328	14,146
1996	10,932	1841	3,359	16,132
1997	12,472	507	2,959	15,938
1998	9,356	266	4,019	13,641
1999	13,390	952	3,033	17,375
2000	13,093	1808	1,765	16,666
2001	12,490	2103	1,348	15,941
2002	12,595	4100	441	17,136
2003	12,044	1343	1,530	14,918
2004	11,900	3635	1,330	16,865

\* Surface water data unavailable for 1984



**City of Hemet Water Service Area  
Historical Water Supply Components (AF)**

<b>Year</b>	<b>Groundwater</b>	<b>Purchases from EMWD</b>	<b>Total</b>
1984	3,514	0	3,514
1985	3,810	227	4,037
1986	5,531	0	5,531
1987	4,669	153	4,822
1988	6,306	137	6,443
1989	6,549	162	6,711
1990	5,776	35	5,811
1991	5,138	367	5,505
1992	5,597	0	5,597
1993	5,478	0	5,478
1994	5,327	3	5,330
1995	5,643	1	5,644
1996	5,961	14	5,975
1997	5,891	27	5,918
1998	4,801	31	4,832
1999	4,805	642	5,447
2000	5,048	428	5,476
2001	4,735	749	5,484
2002	4,955	761	5,716
2003	4,999	518	5,517
2004	5,684	345	6,029

**City of San Jacinto Water Service Area  
Historical Water Supply Components (AF)**

<b>Year</b>	<b>Groundwater</b>	<b>Purchases from EMWD</b>	<b>Total</b>
1984	2,805	0	2,805
1985	2,840	0	2,840
1986	2,763	0	2,763
1987	2,746	0	2,746
1988	2,980	0	2,980
1989	2,662	0	2,662
1990	3,841	0	3,841
1991	3,051	0	3,051
1992	3,481	0	3,481
1993	2,802	0	2,802
1994	2,793	0	2,793
1995	2,637	54	2,691
1996	2,831	47	2,878
1997	2,337	600	2,937
1998	2,585	120	2,705
1999	2,766	65	2,831
2000	2,780	0	2,780
2001	2,742	1	2,743
2002	3,231	34	3,265
2003	3,154	2	3,156
2004	2,794	303	3,097

**Private Water Producers  
Historical Water Supply Components (AF)**

<b>Year</b>	<b>Groundwater</b>	<b>Recycled Water</b>	<b>Total</b>
1984	27,420	2086	29,506
1985	30,465	4076	34,541
1986	29,317	4480	33,797
1987	28,512	4461	32,973
1988	27,933	5010	32,943
1989	27,390	5571	32,961
1990	24,725	4439	29,164
1991	23,894	3688	27,582
1992	23,904	3076	26,980
1993	26,130	3301	29,431
1994	30,777	2416	33,193
1995	28,777	3847	32,624
1996	27,216	4312	31,528
1997	28,566	4507	33,073
1998	27,630	3926	31,556
1999	29,358	4975	34,333
2000	33,123	4596	37,719
2001	28,678	4319	32,997
2002	19,962	4888	24,850
2003	15,465	3898	19,363
2004	17,179	5047	22,226

**Soboba Tribe  
Historical Water Supply Components (AF)**

<b>Year</b>	<b>Groundwater</b>	<b>Total</b>
1984	398	398
1985	948	948
1986	912	912
1987	450	450
1988	450	450
1989	450	450
1990	450	450
1991	450	450
1992	450	450
1993	450	450
1994	246	246
1995	951	951
1996	1,324	1,324
1997	1,190	1,190
1998	1,000	1,000
1999	1,545	1,545
2000	1,321	1,321
2001	1,536	1,536
2002	2,016	2,016
2003	1,773	1,773
2004	1,315	1,315







STATE OF CALIFORNIA  
THE RESOURCES AGENCY  
STATE WATER RESOURCES CONTROL BOARD  
DIVISION OF WATER RIGHTS

## License for Diversion and Use of Water

APPLICATION 924

PERMIT 468

LICENSE 10667

EASTERN MUNICIPAL WATER DISTRICT  
P. O. BOX 858, HENET, CALIFORNIA 92343

**THIS IS TO CERTIFY, That**

HAS *made proof as of* JANUARY 23, 1969 *(the date of inspection)*  
to the satisfaction of the State Water Resources Control Board of a right to the use of the water of  
SAN JACINTO RIVER IN RIVERSIDE COUNTY

tributary to LAKE ELSINORE

for the purpose of IRRIGATION AND DOMESTIC USES  
under Permit 468 of the Board and that the right to the use of this water has been perfected  
in accordance with the laws of California, the Regulations of the Board and the permit terms; that the  
priority of this right dates from FEBRUARY 14, 1918 and that the amount of water to which  
this right is entitled and hereby confirmed is limited to the amount actually beneficially used for the stated  
purposes and shall not exceed FIVE THOUSAND SEVEN HUNDRED SIXTY (5,760) ACRE-Feet PER ANNUM,  
TO BE COLLECTED TO UNDERGROUND STORAGE BY SPREADING FROM NOVEMBER 1 OF EACH YEAR TO  
JUNE 30 OF THE SUCCEEDING YEAR AT A RATE OF 41 CUBIC FEET PER SECOND AND SUBSEQUENTLY  
EXTRACTED AND PLACED TO BENEFICIAL USE. SO LONG AS THERE IS NO INTERFERENCE WITH  
OTHER RIGHTS, JUNIOR, AS WELL AS SENIOR, LICENSEE MAY INCREASE HIS RATE OF DIVERSION  
TO A MAXIMUM OF 100 CUBIC FEET PER SECOND; PROVIDED THAT THE TOTAL QUANTITY DIVERTED  
IN ANY 30-DAY PERIOD DOES NOT EXCEED 2,442 ACRE-Feet.

THE POINTS OF DIVERSION OF SUCH WATER ARE LOCATED:

- (1) SOUTH 2,900 FEET AND EAST 1,400 FEET FROM NW CORNER OF SECTION 10, T5S, R1E, SBB&M, BEING WITHIN NE $\frac{1}{4}$  OF SW $\frac{1}{4}$  OF SAID SECTION 10, AND
- (2) NORTH 1,600 FEET AND WEST 900 FEET FROM SW CORNER OF SECTION 4, T5S, R1E, SBB&M, BEING WITHIN NW $\frac{1}{4}$  OF SW $\frac{1}{4}$  OF SAID SECTION 4.

A DESCRIPTION OF LANDS OR THE PLACE WHERE  
SUCH WATER IS PUT TO BENEFICIAL USE IS AS FOLLOWS:

DOMESTIC USE AND IRRIGATION OF 7,500 ACRES NET WITHIN A GROSS AREA OF 29,500 ACRES  
WITHIN T4S, R1W; T4S, R1E; T5S, R1E; T5S, R1W; T5S, R2W, SBB&M, AS SHOWN ON MAP  
FILED WITH STATE WATER RESOURCES CONTROL BOARD.

DIVERSION OF WATER UNDER THIS LICENSE IS, AND SHALL BE, SUBJECT TO THE PRO-  
VISION OF JUDGMENT AND DECREE ISSUED IN CASE NUMBER 51,546 IN THE SUPERIOR COURT  
OF THE STATE OF CALIFORNIA IN AND FOR THE COUNTY OF RIVERSIDE, SAID JUDGMENT AND  
DECREE BEING DATED 3 JUNE, 1954.

Licensee shall allow representatives of the Board and other parties, as may be authorized from time to time by the Board, reasonable access to project works to determine compliance with the terms of this license.

All rights and privileges under this license including method of diversion, method of use and quantity of water diverted are subject to the continuing authority of the Board in accordance with law and in the interest of the public welfare to prevent waste, unreasonable use, unreasonable method of use or unreasonable method of diversion of said water.

Reports shall be filed promptly by licensee on appropriate forms which will be provided for the purpose from time to time by the Board.

The right hereby confirmed to the diversion and use of water is restricted to the point or points of diversion herein specified and to the lands or place of use herein described.

This license is granted and licensee accepts all rights herein confirmed subject to the following provisions of the Water Code:

Section 1625. Each license shall be in such form and contain such terms as may be prescribed by the Board.

Section 1626. All licenses shall be under the terms and conditions of this division (of the Water Code).

Section 1627. A license shall be effective for such time as the water actually appropriated under it is used for a useful and beneficial purpose in conformity with this division (of the Water Code) but no longer.

Section 1628. Every license shall include the enumeration of conditions therein which in substance shall include all of the provisions of this article and the statement that any appropriator of water to whom a license is issued takes the license subject to the conditions therein expressed.

Section 1629. Every licensee, if he accepts a license does so under the conditions precedent that no value whatsoever in excess of the actual amount paid to the State therefor shall at any time be assigned to or claimed for any license granted or issued under the provisions of this division (of the Water Code), or for any rights granted or acquired under the provisions of this division (of the Water Code), in respect to the regulation by any competent public authority of the services or the price of the services to be rendered by any licensee or by the holder of any rights granted or acquired under the provisions of this division (of the Water Code) or in respect to any valuation for purposes of sale to or purchase, whether through condemnation proceedings or otherwise, by the State or any city, city and county, municipal water district, irrigation district, lighting district, or any political subdivision of the State, of the rights and property of any licensee, or the possessor of any rights granted, issued, or acquired under the provisions of this division (of the Water Code).

Section 1630. At any time after the expiration of twenty years after the granting of a license, the State or any city, city and county, municipal water district, irrigation district, lighting district, or any political subdivision of the State shall have the right to purchase the works and property occupied and used under the license and the works built or constructed for the enjoyment of the rights granted under the license.

Section 1631. In the event that the State, or any city, city and county, municipal water district, irrigation district, lighting district, or political subdivision of the State so desiring to purchase and the owner of the works and property cannot agree upon the purchase price, the price shall be determined in such manner as is now or may hereafter be provided by law for determining the value of property taken in eminent domain proceedings.

Dated: MAY 25 1976

STATE WATER RESOURCES CONTROL BOARD

*R. J. Rosenberger*  
Chief, Division of Water Rights

Division	DISTRIBUTION	Code
	State Secretary	
	General Manager	
	Deputy General Manager	
	Administrative Services	
	Community Relations	
	Contract Administration	
	Purchasing	
	Engineering Branch	
	Planning	
	Maps & Records	
	Engineering	
	Construction	
	Operations Branch	
	Water Reservoirs	
	Water Operations & M. & S.	
	Water Utility	
	Administrative Branch	
	Customer Service	
	Water Billing	
	Public Information	
	Finance	
	General Services	

W/enuL.



***APPENDIX H1: PREPARATION OF WATER MANAGEMENT PLAN***

***APPENDIX H2: DRAFT AGREEMENT REGARDING PHASE 1 FACILITIES  
CONSTRUCTION COST AND USE***

***APPENDIX H3: MONITORING PROGRAM***

***APPENDIX H4: INTERIM WATER SUPPLY PLAN***



## MEMORANDUM OF UNDERSTANDING

### **PREPARATION OF WATER MANAGEMENT PLAN FOR THE HEMET/SAN JACINTO MANAGEMENT AREA**

This Memorandum Of Understanding: Preparation of Water Management Plan for the Hemet/San Jacinto Management Area ("MOU"), is hereby entered into this 17<sup>th</sup> day of June, 2004 by and between the EASTERN MUNICIPAL WATER DISTRICT, a California municipal water district ("EMWD"), LAKE HEMET MUNICIPAL WATER DISTRICT, a California municipal water district ("LHMWD"), CITY OF HEMET, a California general law city ("Hemet"), and CITY OF SAN JACINTO, a California general law city ("San Jacinto"), (collectively referred to hereinafter as the "Parties"), based on the following facts:

#### RECITALS

A. Groundwater in the Hemet/San Jacinto Management area has been, and will remain, a significant source of water for the people and agribusiness of Riverside County providing an invaluable contribution to the local economy and public good. As a result, the Parties have acknowledged their collective interest in the management of local water resources within the Hemet/San Jacinto Management area.

B. In furtherance of this collective interest, the Parties entered into that "Memorandum of Understanding to Work Cooperatively to Promote Conjunctive Use Projects and Programs in Upper San Jacinto River Basins" dated June 19, 2001 (the "Conjunctive Use MOU"). The purpose of the Conjunctive Use MOU is to encourage cooperation among the Parties to facilitate and support local groundwater management efforts and conjunctive use programs particularly those that could increase dry-year water supplies, within the safe-yield and without the overdraft of San Jacinto groundwater basins.

C. In the cooperative spirit of the Conjunctive MOU and with assistance from the State Department of Water Resources, the parties engaged in several rounds of policy discussions and technical investigations into suitable methods to alleviate the overdraft, manage long term water supplies, and provide for demands of growth. As the result of these efforts, the Parties each approved a statement of principles entitled "Principles for Water Management" (the "Principles") in February 2004 with regard to the Hemet and San Jacinto Basins. The Principles established the framework from which the Parties agreed to develop a Water Management Plan for the Hemet and San Jacinto Basins.

D. The intent of this MOU is to provide for the creation of the Water Management Plan ("WMP") called for in the Principles, to appoint Eastern Municipal Water District as the Contract Administrator for preparation of the WMP, and to establish an equitable mechanism for funding the WMP by the Parties.

## OPERATIVE PROVISIONS

**NOW, THEREFORE**, in consideration of the promises made and recited herein, the Parties do hereby enter into this Memorandum of Understanding setting forth their pledges, commitments, understandings and appropriate limiting conditions, as follows:

### ARTICLE 1.0 AGREEMENT TO UNDERTAKE WMP

1.1 **Cooperation.** The Parties agree that the WMP shall be timely undertaken and completed in accordance with this MOU. In order to ensure the timely and efficient completion of the WMP within the budget described in this MOU, the Parties agree to cooperate with and amongst each other, to share information necessary for the preparation of the WMP, and to take such other reasonable actions as may be necessary for the timely completion of the WMP, provided such actions do not result in additional costs to the Parties.

1.2. **Scope of Work.** The WMP shall be prepared in accordance with the Scope of Work attached hereto and incorporated herein by reference as Attachment 1 (hereinafter referred to as the "Scope of Work"). The Scope of Work defines the extent of the WMP, the tasks necessary for its completion, assigns responsibility for those tasks, and outlines the basic content of each constituent section.

1.3. **Consultant.** The Parties agree that the WMP shall be prepared by an independent contractor, except for those sections which the Scope of Work designates will be prepared by EMWD or the Parties collectively. The Parties agree that Water Resources & Information Management Engineering, Inc, (hereinafter "WRIME") is hereby selected to be the independent contractor principally responsible for undertaking and completing the Scope of Work. However, it is contemplated that WRIME will subcontract with, or EMWD will enter into separate contracts with, GEOSCIENCE, Support Services, Inc., and Stetson Engineering (hereinafter collectively referred to as "Subconsultants") for certain work identified in the Scope of Work. Subconsultants shall serve as consultants for WRIME with regard to performance of the Scope of Work and shall not serve as consultants for Hemet or San Jacinto or their attorneys for performance of the Scope of Work.

1.4. **Project Cost.** The Parties agree that the amount to be paid to WRIME and Subconsultants for undertaking and completing the Scope of Work shall not exceed that amounts reflected on the WMP Budget attached hereto and incorporated herein by reference as Attachment 2. The WMP Budget reflects a total, not to exceed, project cost of \$180,894 ("Total Project Cost"). The Parties agree that the approximately \$16,869 remaining in the budget for the Hemet/San Jacinto Groundwater Association ("GWA") and the approximately \$20,000 remaining in the budget for the Integrated Water Management Plan ("IWMP") shall be reprogrammed and allocated toward payment of the Total Project Cost. After application of these funds, a cost of \$144,025 remains to be funded by and apportioned among the Parties ("Adjusted Project Cost"). The Adjusted

Project Cost excludes individual expenses of the Parties regarding for their own review, comment, and approval of the WMP as well as expenses of EMWD in preparing sections of the WMP for which the Scope of Work indicates it is principally responsible.

**ARTICLE 2.0 OBLIGATIONS OF THE PARTIES**

2.1 **Funding of WMP.** Each of the Parties individually agrees to fund up to their apportioned share of the Adjusted Project Cost as determined in Article 3.0 "Apportionment of Cost" and to pay such share in a lump sum payment within thirty (30) calendar days of receipt of an invoice from EMWD, provided that EMWD invoices the parties in July of 2004 or thereafter in accordance with Attachment 3.

2.2 **Administration of Contract.** EMWD hereby agrees to act as the contracting agency for the preparation of the WMP. In this regard, EMWD shall enter into and execute the appropriate contract(s) with WRIME and the Subconsultants to perform the Scope of Work for an amount not to exceed the Project Cost. EMWD shall also perform the duties set forth in Attachment 3.

**ARTICLE 3.0 APPORTIONMENT OF COST**

3.1. **Method of Apportionment.** The Parties agree to apportion the Adjusted Project Cost among themselves based on each Party's pro rata share of the total base production of all the Parties as determined by the Hemet/San Jacinto Policy Committee and shown below:

<b>Apportionment of Adjusted Project Cost (*900 af credit taken out)</b>			
<b>Agency</b>	<b>Base Production (AF)</b>	<b>Percentage</b>	<b>Cost Contribution</b>
City of Hemet*	5,420	17.7 %	\$ 25,492
City of San Jacinto*	3,131	10.3 %	\$ 14,835
LHMWD.	11,063	36.3 %	\$ 52,281
EMWD	10,869	35.7 %	\$ 51,417
<b>Totals</b>	<b>30,483</b>	<b>100.0 %</b>	<b>\$144,025</b>

**ARTICLE 4.0 MISCELLANEOUS PROVISIONS**

4.1 **Term.** This MOU shall terminate, unless extended by the mutual agreement of the Parties memorialized in writing, upon acceptance of the completed WMP by the governing boards of each of the Parties, provided the Consultant has been fully paid for the Scope of Work and has released the Parties, and each of them, from any claims for further or additional compensation for the Scope of Work.

4.2 **Ownership of Documents.** The WMP together with all data, information, materials and reports (including electronically or digitally stored materials) produced in the preparation of the WMP shall become the joint property of the Parties upon acceptance of the WMP.

4.3 **Individual Costs & Expenses.** Except for the costs and expenses which the Parties have collectively agreed to fund as provided in Article 3.0 "Apportionment of Funding" of this MOU, any cost or expense incurred any one of the Parties with regard to the WMP or its review or approval, shall remain the sole cost and expense of the incurring Party.

4.4 **Authority.** The individuals executing this Agreement on behalf of the Parties and the instruments referenced on behalf of the Parties represent and warrant that they have the legal power, right and actual authority to bind the Parties to the terms and conditions hereof and thereof.

4.5 **Counterpart Originals.** This Agreement may be executed in original counterparts, which together shall constitute a single agreement.

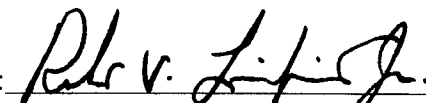
4.6 **Effective Date.** This MOU has become effective among and between the Parties on the date by which each Party's governing board or council has approved the MOU and the authorized representative of each Party has executed the MOU.

**IN WITNESS WHEREOF,** the Parties hereto have executed this Memorandum of Understanding on the date and year first above written.

**EASTERN MUNICIPAL WATER DISTRICT**

By:  \_\_\_\_\_  
AS GALK, General Manager

**LAKE HEMET MUNICIPAL WATER DISTRICT**

By:  \_\_\_\_\_  
ROBERT V. LINDQUIST, JR., General Manager

[additional signatures on following page]

**CITY OF HEMET**

By:  \_\_\_\_\_  
Steve Temple, City Manager

ATTEST:

By: Sarah McComas  
~~Stephen Clayton~~ Sarah McComas  
Deputy City Clerk

Approved as to Form:

By: Julie H. Biggs  
~~Eric S. Vail~~ Julie H. Biggs  
Assistant City Attorney

CITY OF SAN JACINTO

By: Peter A. Cosentino  
Peter A. Cosentino City Manager

ATTEST:

By: Dorothy J. Chauinard  
City of San Jacinto  
City Clerk

Approved as to Form:

By: Robert Harjo  
~~Robert Harjo~~ Robert Harjo  
City Attorney





**AGREEMENT TO DEVELOP A GROUNDWATER  
MONITORING PROGRAM IN THE  
HEMET/SAN JACINTO MANAGEMENT AREA**

**THIS AGREEMENT** is made and entered into by and among the following entities, which are hereinafter collectively referred to as the "AGENCIES."

City of Hemet  
Lake Hemet Municipal Water District

City of San Jacinto  
Eastern Municipal Water District

**I. RECITALS**

**A - Background:**

1. Groundwater in the Hemet/San Jacinto Management Area has been, and will remain, a significant source of water for the people and agribusiness of Riverside County providing an invaluable contribution to the local economy and public good.
2. The Cities of Hemet and San Jacinto, Lake Hemet Municipal Water District, and Eastern Municipal Water District strive to increase the availability and reliability of local surface and ground water resources in the area.
3. The Cities of Hemet and San Jacinto, Lake Hemet Municipal Water District, and Eastern Municipal Water District have an interest in the management of local water resources within the Hemet/San Jacinto Management Area.
4. The Department of Water Resources seeks to support local groundwater management efforts, particularly those that could increase dry-year water supplies, within the safe yield and without the overdraft of groundwater resources.
5. Through cooperation, open communication, and consensus building among the AGENCIES, the Hemet/San Jacinto Groundwater Policy and Technical Committees were formed in June of 2001 to identify programs needed to improve groundwater resources management in the area.
6. The AGENCIES have determined that development and implementation of a groundwater monitoring program is necessary for the accurate evaluation of the operational yield of the Hemet/San Jacinto Management Area.

**B – The Purpose of this Agreement:**

1. Develop a Monitoring Program in the Hemet/San Jacinto Management Area.
2. Appoint Eastern Municipal Water District as the Monitoring Program Administrator.
3. Establish an equitable funding mechanism among the Agencies to collect and fund the Monitoring Program.

## II. COVENANTS

NOW, THEREFORE, in consideration of the foregoing recitals and mutual covenants contained herein, the AGENCIES hereby agree as follows:

A Develop a Groundwater Monitoring Program:

The AGENCIES and other private groundwater producers in the area hereby agree to develop the Groundwater Monitoring Program, as more specifically provided for in Attachment 1.

B Roles and Responsibilities of the AGENCIES:

The AGENCIES shall perform the duties as more specifically provided for in Attachment 1.

C Monitoring Program Costs:

A total of \$200,000 is estimated to be required for the meter installation and first year operation of the monitoring program. This amount includes contingencies and uncertainties associated with such monitoring programs. Attachment 1 contains detailed cost estimates.

It is anticipated that Department of Water Resources (DWR) will contribute \$100,000 of the \$200,000 estimated cost for the meter installation and first year implementation of the monitoring program, provided the Agencies agree to fund and implement the monitoring program into future years pursuant to Covenant II.D, below.

D Cost Sharing of the Monitoring Program:

Until the full implementation of the Water Management Plan, the AGENCIES will share the annual Monitoring Program costs based on their base groundwater production percentages as determined by the Hemet/San Jacinto Groundwater Policy Committee and shown below:

<b>Cost Sharing Prior to Plan Implementation</b>			
<b>Agency</b>	<b>Base Production (AF)</b>	<b>Percentage</b>	<b>Cost Contribution</b>
City of Hemet	6,320	19.6 %	\$ 19,600
City of San Jacinto	4,031	12.5 %	\$ 12,500
LHMWD.	11,063	34.2 %	\$ 34,200
EMWD	10,869	33.7 %	\$ 33,700
<b>Totals</b>	<b>32,283</b>	<b>100.0 %</b>	<b>\$100,000</b>

As noted above, the AGENCIES' share of the first year's budget is \$100,00. Future years' budgets will be approved by the Hemet/San Jacinto Groundwater Policy Committee, and incorporate any excesses or deficits from prior years.

E Term of the Agreement:

This Agreement shall terminate, unless extended by mutual agreement of the AGENCIES, on the date a stipulated judgment for the Water Management Plan is executed by the AGENCIES provided that all debts and liabilities of the Monitoring Program are satisfied.

An Agency may terminate its participation in this agreement on an anniversary date of the Agreement by given the other Agencies written notice three months prior to that anniversary date.

F Ownership of Documents:

All data and reports produced shall become the joint property of the AGENCIES.

G Effective Date:

This Agreement shall become effective upon execution by all AGENCIES pursuant to authorization by each AGENCY's Governing Board.


H Counterparts:

This Agreement may be executed in original counterparts, which together shall constitute a single agreement.

IN WITNESS WHEREOF, the AGENCIES have executed this Agreement on the date set forth below.

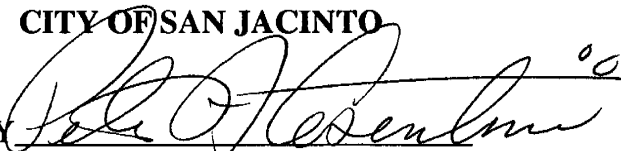
**CITY OF HEMET**

DATE 9/13/03

BY   
City Manager

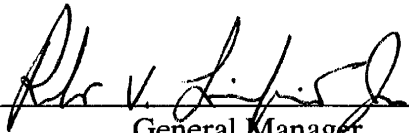
**CITY OF SAN JACINTO**

DATE 9-16-03

BY   
City Manager

**LAKE HEMET MUNICIPAL  
WATER DISTRICT**

DATE 9/16/03

BY   
General Manager

**EASTERN MUNICIPAL WATER DISTRICT**

DATE 9/19/03

BY   
General Manager



**AGREEMENT TO IMPLEMENT THE 2005 WATERSHED  
MONITORING PROGRAM IN THE  
HEMET/SAN JACINTO MANAGEMENT AREA**

**THIS AGREEMENT** is made and entered into by and among the following entities, which are hereinafter collectively referred to as the "AGENCIES."

City of Hemet  
Lake Hemet Municipal Water District

City of San Jacinto  
Eastern Municipal Water District

**I. RECITALS**

**A - Background:**

1. Groundwater in the Hemet/San Jacinto Management area has been, and will remain, a significant source of water for the people and agribusiness of Riverside County providing an invaluable contribution to the local economy and public good.
2. The Cities of Hemet and San Jacinto, Lake Hemet Municipal Water District, and Eastern Municipal Water District strive to increase the availability and reliability of local surface and ground water resources in the area.
3. The Cities of Hemet and San Jacinto, Lake Hemet Municipal Water District, and Eastern Municipal Water District have an interest in the management of local water resources within the Hemet/San Jacinto Management area.
4. The Department of Water Resources seeks to support local groundwater management efforts, particularly those that could increase dry-year water supplies, within the safe yield and without the overdraft of groundwater resources.
5. Through cooperation, open communication, and consensus building among the AGENCIES, the Hemet/San Jacinto Policy and Technical Committees was formed in June of 2001 to identify programs needed to improve groundwater resources management in the area.
6. The AGENCIES developed and implemented a groundwater monitoring program for the year 2004 for the accurate evaluation of groundwater changes within the Hemet/San Jacinto Management area.
7. The AGENCIES are interested in the continuation of the groundwater monitoring program for the accurate evaluation of water resources in the Hemet/San Jacinto Management area.
8. The AGENCIES are interested in overseeing the current USGS surface water monitoring program for better evaluation of the recharge into the Hemet/San Jacinto Management area.
9. The AGENCIES have determined that implementation of a watershed monitoring program which consists of groundwater and surface water monitoring is necessary for the accurate evaluation of the safe yield of the Hemet/San Jacinto Management area.

**B – The Purpose of this Agreement:**

1. Conduct a Watershed Monitoring Program which consists of groundwater and surface water monitoring in the Hemet/San Jacinto Management area for year 2005.
2. Appoint Eastern Municipal Water District as the Monitoring Program Administrator.
3. Establish an equitable funding mechanism to collect the corresponding shares of each entity to fund the Monitoring Program for 2005.

**II. COVENANTS**

NOW, THEREFORE, in consideration of the foregoing recitals and mutual covenants contained herein, the AGENCIES hereby agree as follows:

**A Watershed Monitoring Program:**

The AGENCIES and other private groundwater producers in the area hereby will implement a Watershed Monitoring Program during 2005.

**B Roles and Responsibilities of the AGENCIES:**

The AGENCIES shall continue the duties as performed during implementation of the Groundwater Monitoring Program in 2004 and oversee the surface water monitoring conducted by U.S. Department of Interior - Geological Survey (USGS).

**C Monitoring Program Costs:**

A total of \$112,000 is estimated to be required for the operation of the watershed monitoring program during 2005. This amount includes participation in a cooperative surface water monitoring program with USGS in addition to the groundwater monitoring program conducted during 2004. Contingencies and uncertainties associated with such monitoring programs are also included in this amount.

**D Cost Sharing of the Monitoring Program:**

Until the full implementation of the Water Management Plan, the AGENCIES will share the Watershed Monitoring Program costs based on their base groundwater production percentages that are subject to assessments as determined by the Hemet/San Jacinto Policy Committee and shown below:

<b>Cost Sharing For 2005</b>				
<b>Agency</b>	<b>Base Production (AF)</b>	<b>Production subject to Assessment</b>	<b>Percentage</b>	<b>Cost Contribution</b>
<b>City of Hemet</b>	<b>6,320</b>	<b>5,420</b>	<b>17.8%</b>	<b>\$ 19,900</b>
<b>City of San Jacinto</b>	<b>4,031</b>	<b>3,131</b>	<b>10.3%</b>	<b>\$ 11,500</b>
<b>LHMWD.</b>	<b>11,063</b>	<b>11,063</b>	<b>36.3%</b>	<b>\$ 40,700</b>
<b>EMWD</b>	<b>10,869</b>	<b>10,869</b>	<b>35.7%</b>	<b>\$ 39,900</b>

Totals	32,283	30,483	100.0%	\$ 112,000
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If the above costs increase by more than 10%, the AGENCIES shall meet and confer on the cost allocation amendment.

**E Term of the Agreement:**

This Agreement shall terminate, unless extended by mutual agreement of the AGENCIES, on the date a stipulated judgment for the Water Management Plan is executed by the AGENCIES provided that all debts and liabilities of the Monitoring Program are satisfied.

**F Ownership of Documents:**

All data and reports produced shall become the joint property of the AGENCIES.

**G Effective Date:**

This Agreement shall become effective upon execution by all AGENCIES pursuant to authorization by each AGENCY's Governing Board.


**H Counterparts:**

This Agreement may be executed in original counterparts, which together shall constitute a single agreement.

**IN WITNESS WHEREOF**, the AGENCIES have executed this Agreement on the date set forth below.

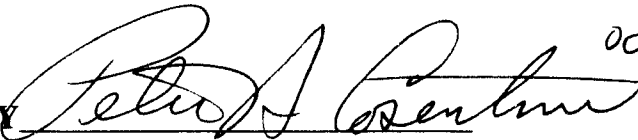
**CITY OF HEMET**

DATE 1/24/05

BY   
City Manager

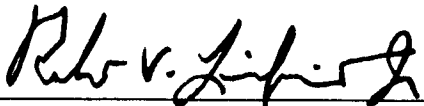
**CITY OF SAN JACINTO**

DATE 1-12-05

BY <sup>00</sup>  
City Manager


**LAKE HEMET MUNICIPAL  
WATER DISTRICT**

DATE JAN. 12, 2004

BY   
General Manager

**EASTERN MUNICIPAL WATER DISTRICT**

DATE Jan 19, 2005

BY   
General Manager



## **MEMORANDUM OF UNDERSTANDING**

### **2006-2008 WATERSHED MONITORING PROGRAM**

#### **HEMET/SAN JACINTO MANAGEMENT AREA**

This Memorandum Of Understanding; 2006-2008 Watershed Monitoring Program, Hemet/San Jacinto Management Area ("MOU"), is hereby dated for reference purposes as of May 23, 2006, by and between the EASTERN MUNICIPAL WATER DISTRICT, a California municipal water district ("EMWD"), LAKE HEMET MUNICIPAL WATER DISTRICT, a California municipal water district ("LHMWD"), CITY OF HEMET, a California general law city ("Hemet"), and CITY OF SAN JACINTO, a California general law city ("San Jacinto"), (collectively referred to hereinafter as the "Parties"), based on the following facts:

#### **RECITALS**

A. The Parties previously entered into an "Agreement to Implement the 2004 Watershed Monitoring Program in the Hemet/San Jacinto Management Area" dated September 19, 2003 ("2004 MOU") and an "Agreement to Implement the 2005 Watershed Monitoring Program in the Hemet/San Jacinto Management Area" dated January 26, 2005 ("2005 MOU"). The purpose and rationale of the Watershed Monitoring Program ("WMP") as reflected in the 2004 MOU and 2005 MOU is to conduct a program which consists of groundwater and surface water monitoring in the Hemet/San Jacinto Management Area ("Management Area") for years 2004 and 2005.

B. The Parties agree that the groundwater in the Management Area has been, and will remain, a significant source of water for the people and agribusiness of Riverside County, thus providing an invaluable contribution to the local economy and public good, for which the Parties strive to increase the availability and reliability of local surface and groundwater resources in the area.

C. The Parties have an interest in the management of local water resources within the Management Area. To this end, the California Department of Water Resources seeks to support local groundwater management efforts, particularly those that could increase dry-year water supplies, within the safe yield and without the overdraft of groundwater resources.

D. Through cooperation, open communication, and consensus building among the Parties, the Hemet/San Jacinto Policy and Technical Committees were formed in June of 2001, to identify programs needed to improve groundwater resources management in the area. Through these committees, the Parties developed and implemented the 2004 MOU and 2005 MOU for the accurate evaluation of groundwater changes within the Management Area. The parties desire to continue the WMP for the accurate evaluation of water resources within the Management Area.

E. The Parties further desire to oversee the current U.S. Department of Interior - Geological Survey ("USGS") Surface Water Monitoring Program for a better evaluation of the

recharge into the Management Area. Accordingly, the Parties have determined that implementation of a WMP which consists of groundwater and surface water monitoring is necessary for the accurate evaluation of the safe yield of the Management Area.

F. In furtherance thereof, it is the purpose and intent of the Parties in entering into this MOU to continue the WMP consisting of groundwater and surface water monitoring in the Management Area for years 2006 through 2008, appoint Eastern Municipal Water District as the WMP Administrator, and establish an equitable funding mechanism to collect the corresponding shares of each entity to fund the WMP for 2006 through 2008. To implement this goal, the Parties pledge to undertake the following actions.

### **OPERATIVE PROVISIONS**

**NOW, THEREFORE**, in consideration of the promises made and recited herein, the Parties do hereby enter into this Memorandum of Understanding setting forth their pledges, commitments, understandings and appropriate limiting conditions, as follows:

#### **1.0 THE PARTIES' PLEDGES AND CONDITIONS**

1.1 **Pledges by the Parties**. Subject to the conditions set forth in Section 1.2, the Parties pledge the following:

1.1.1 **Implementation of the WMP**. The Parties agree to implement, and other local private groundwater producers have separately agreed to implement outside of this MOU, a WMP for the years 2006 through 2008, and agree to continue the duties as performed during implementation of the 2004 MOU and 2005 MOU to oversee the surface water monitoring conducted by U.S. Department of Interior - Geological Survey (USGS).

1.1.2 **Appointment of EMWD as WMP Administrator**. The Parties agree that EMWD shall be appointed as the WMP Administrator, whose duties shall include the administration of the WMP and the invoicing of the other Parties as provided below.

1.1.3 **WMP Costs**. An annual cost of \$112,000 is estimated to be required for the operation of the WMP for each of the three years from 2006 through 2008. This amount includes participation in a cooperative Surface Water Monitoring Program with USGS in addition to the WMP conducted during 2004 and 2005. Contingencies and uncertainties associated with such monitoring programs are also included in this amount. If the above cost increases by more than 10%, the Parties agree to meet and confer on the cost allocation amendment.

1.1.4 **Cost Sharing of the WMP**. Until the full implementation of the Water Management Plan, the Parties agree to share the WMP costs based on their base groundwater production percentages that are subject to assessments as determined by the Hemet/San Jacinto Policy Committee and shown in the table below:

<b>Cost Sharing For 2006 through 2008</b>				
<b>Agency</b>	<b>Base Production (AF)</b>	<b>Production subject to Assessment</b>	<b>Percentage</b>	<b>Cost Contribution</b>
<b>Hemet</b>	<b>6,320</b>	<b>5,420</b>	<b>17.8%</b>	<b>\$ 19,900</b>
<b>San Jacinto</b>	<b>4,031</b>	<b>3,131</b>	<b>10.3%</b>	<b>\$ 11,500</b>
<b>LHMWD</b>	<b>11,063</b>	<b>11,063</b>	<b>36.3%</b>	<b>\$ 40,700</b>
<b>EMWD</b>	<b>10,869</b>	<b>10,869</b>	<b>35.7%</b>	<b>\$ 39,900</b>
<b>Totals</b>	<b>32,283</b>	<b>30,483</b>	<b>100.0%</b>	<b>\$ 112,000</b>

1.2 **Cooperation with Other Parties.** The Parties agree to cooperate with each other to reasonably facilitate each Party's performance of their pledge, to share information and to regularly meet and confer concerning implementation of this MOU as part of the regularly scheduled meetings of the Groundwater Policy Committee or such sub-committee as the Policy Committee shall designate from time to time.

## **2.0 MISCELLANEOUS PROVISIONS**

2.1 **Term and Continuation of the WMP.** This MOU shall terminate, unless extended by the mutual agreement of the Parties memorialized in writing, on the earlier of the following dates: (i) the date upon which two or more Parties mutually agree to terminate the MOU; (ii) the date upon which all Parties have adopted the Water Management Plan; or (iii) December 31, 2008. During the Term of this MOU, all of the obligations of the Parties shall be continued and carried over to the next calendar year, subject to adjustment if the WMP cost increases by more than 10%. The Parties shall meet and confer during the last quarter of the preceding year to determine the anticipated cost to be apportioned among the Parties for the forthcoming year and memorialized in a statement signed by the managers of all Parties. In any year subsequent to 2006, no Party shall be obligated to contribute more than one hundred twenty-five percent (125%) of its contribution assigned for the prior year without approval of its Board or Council

2.2 **Invoicing.** The Parties agree that EMWD shall invoice each Party for its contribution to the WMP and subsequent years, either in one lump sum during the year, or in installments over the year as is agreed upon by the Party being invoiced and arranged by that Party with EMWD.

2.3 **Ownership of Documents.** The Parties agree that all data and reports produced shall become the joint property of the Parties.

2.4 **Costs & Expenses.** Other than as set forth above, the Parties shall bear their own costs and expenses of otherwise participating in this MOU.

2.5 **Authority.** The individuals executing this MOU on behalf of the Parties and the instruments referenced on behalf of the Parties represent and warrant that they have the legal

power, right and actual authority to bind the Parties to the terms and conditions hereof and thereof.


2.6 **Counterpart Originals.** This Agreement may be executed in duplicate originals, each of which is deemed to be an original.

2.7 **Effective Date.** This MOU has become effective among and between the Parties on the date by which each Party's governing board or council has approved the MOU and the authorized representative of each Party has executed the MOU.

**IN WITNESS WHEREOF**, the Parties hereto have executed this Memorandum of Understanding on the date and year first above written.

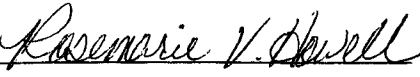
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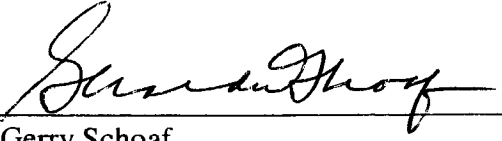
**EASTERN MUNICIPAL WATER DISTRICT**

By:   
Tony Pack  
General Manager

ATTEST:

Approved as to Form:

By:   
Board Secretary

By:   
Gerry Schoaf  
General Counsel

LAKE HEMET MUNICIPAL WATER DISTRICT

By: Tom Wagoner  
Tom Wagoner, General Manager

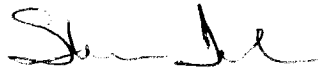
ATTEST:

Approved as to Form:

By: John Chubb  
District, Secretary


By: Arthur L. Littleworth  
Arthur Littleworth, General Counsel


CITY OF HEMET

By:   
Steve Temple, City Manager

ATTEST:

Approved as to Form:

By:   
Stephen Clayton, City Clerk

By:   
Eric S. Vail, City Attorney

CITY OF SAN JACINTO

By: Barry McClellan  
Barry McClellan, City Manager

ATTEST:

Approved as to Form:

By: Dorothy Chomnard  
Dorothy Chomnard, City Clerk

By: Robert Hargreaves  
Robert Hargreaves, Special Counsel

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## **MEMORANDUM OF UNDERSTANDING**

### **INTERIM WATER SUPPLY PLAN**

### **UPPER SAN JACINTO SUB-BASINS**

This Memorandum Of Understanding; Interim Water Supply Plan, Upper San Jacinto Sub-Basins ("MOU"), is hereby entered into this 1st day of April, 2004 by and between the EASTERN MUNICIPAL WATER DISTRICT, a California municipal water district ("EMWD"), LAKE HEMET MUNICIPAL WATER DISTRICT, a California municipal water district ("LHMWD"), CITY OF HEMET, a California general law city ("Hemet"), and CITY OF SAN JACINTO, a California general law city ("San Jacinto"), (collectively referred to hereinafter as the "Parties"), based on the following facts:

#### **RECITALS**

A. The Parties have entered into that "Memorandum of Understanding to Work Cooperatively to Promote Conjunctive Use Projects and Programs in Upper San Jacinto River Basins" dated June 19, 2001 (the "Conjunctive Use MOU"). The purpose of the Conjunctive Use MOU is to encourage cooperation among the Parties to facilitate and support local groundwater management efforts and conjunctive use programs particularly those that could increase dry-year water supplies, within the safe-yield and without the overdraft of San Jacinto groundwater basins.

B. The Parties have also entered into that "Agreement to Develop a Groundwater Monitoring Program in the Hemet/San Jacinto Management Area" dated \_\_\_\_\_ 2003 ("GWM Program"). The purpose of the GWM Program is to measure and monitor groundwater levels to assist in the accurate evaluation of conditions of overdraft and the evaluation of operational safe yield in the Hemet/San Jacinto Management Area.

C. Furthermore, in February of 2004, the Parties each approved a statement of principles entitled "Principles for Water Management" (the "PWM") with regard to the Hemet and San Jacinto Basins. The PWM establishes the framework from which the Parties will develop a Water Management Plan for the Hemet and San Jacinto Basins.

D. The Conjunctive Use MOU and the PWM recognize that the Parties, individually and collectively, have an interest in managing and preserving the ground and surface water resources within the Hemet and San Jacinto Basins in order to alleviate an escalating condition of overdraft within those Basins.

E. Through the ongoing GWM Program conducted by the Parties, it has been discovered that well levels within certain portions of the Canyon and Intake sub-areas of the San Jacinto Basin ("Upper San Jacinto Sub-Basins") have declined more than the Parties had originally projected. This fact suggests that the condition of overdraft in the Upper San Jacinto Sub-Basins may be deteriorating more rapidly than anticipated,

making a collective effort to address the situation prudent prior to establishment of the Water Management Plan.

F. Therefore, in furtherance of the goals stated in the Conjunctive Use MOU and the PWM, it is the purpose and intent of the Parties in entering into this MOU to provisionally address the deteriorating situation by providing interim stabilization of the Upper San Jacinto Sub-Basins through the application of approximately 6,000 acre feet of direct and indirect groundwater recharge during calendar year 2004. To implement this goal, the Parties pledge to undertake the following actions during the calendar year 2004.

## **OPERATIVE PROVISIONS**

**NOW, THEREFORE**, in consideration of the promises made and recited herein, the Parties do hereby enter into this Memorandum of Understanding setting forth their pledges, commitments, understandings and appropriate limiting conditions, as follows:

### **ARTICLE 1.0 - EMWD's PLEDGES AND CONDITIONS**

1.1 **Pledges by EMWD.** Subject to the conditions set forth in Section 1.2, EMWD pledges the following:

1.1.1 **Purchase and Recharge of Water.** EMWD will contribute up to Eight Hundred Eighty Three Thousand Dollars and No Cents (\$883,000.00) for the acquisition, transportation, operations, and recharge of imported water into the Upper San Jacinto Sub-Basins. EMWD will coordinate and cooperate with LHMWD and MWD regarding the acquisition of imported water. EMWD understands and agrees that it will implement the transportation and recharge of the purchased imported water into the Upper San Jacinto Sub-Basins using its existing conveyance and spreading facilities within the Management Area.

1.1.2 **Restriction on Conveyances and Exports.** EMWD will use its best efforts to eliminate flows from San Jacinto Basin to the Homeland and Juniper flats area during July, August, and September 2004, and will eliminate the use of any conveyance water during the 2004 calendar year in the Menifee Area. EMWD will not otherwise export any water intended for groundwater recharge, or made available due to groundwater recharge, in the Upper San Jacinto Sub-Basins during the 2004 calendar year. In addition, EMWD will pursue construction of Reach 16 to deliver recycled water to the Heartland Area and will investigate water supply contingency plans.

1.2 **EMWD's Conditions.** The pledges of EMWD stated in Section 1.1 are subject to the following conditions:

1.2.1 **Optimizing Capacity.** That the Parties cooperate with EMWD's efforts to optimize its delivery capacity during the months of July, August, and September 2004, by refraining, to the extent feasible, from exercising their rights to

delivery of Entitlement Water and/or Excess Water ("Fruitvale Water") under EMWD's Improvement District No. 24 program as provided in those agreements between the Parties individually and EMWD ("Fruitvale Agreements"). It is understood and agreed that any Party's cooperation with such effort by EMWD will not result in a loss, waiver, abrogation or diminishment of their contract rights under the Fruitvale Agreements or such other rights as the Party may have to purchase and receive Fruitvale Water.

1.2.2 Compliance by Other Parties. That each other party use its best efforts in good faith to perform and fulfill their respective pledges as expressed in Sections 2.1, 3.2, and 4.2.

1.3 Acceptance of Other Parties' Conditions. EMWD hereby accepts each other Party's conditions on their respective pledges.

1.4 Cooperation with Other Parties. EMWD agrees to cooperate with the other Parties to reasonably facilitate each Party's performance of their pledge, to share information and to regularly meet and confer concerning implementation of this MOU as part of the regularly scheduled meetings of the Groundwater Policy Committee or such sub-committee as the Policy Committee shall designate from time to time.

## **ARTICLE 2.0 - LHMWD'S PLEDGES AND CONDITIONS**

2.1 Pledges by LHMWD. Subject to the conditions set forth in Section 2.2, LHMWD pledges the following:

2.1.1 Purchase and Recharge of Water. LHMWD will contribute up to Eight Hundred Twenty-eight Thousand Dollars and No Cents (\$828,000.00) for the acquisition, transportation, operations, and recharge of imported water into the Upper San Jacinto Sub-Basins. LHMWD will coordinate and cooperate with EMWD and MWD regarding the acquisition of imported water. LHMWD understands and agrees that EMWD will implement the transportation and recharge of the purchased imported water into the Upper San Jacinto Sub-Basins using its existing conveyance and spreading facilities within the Management Area.

2.1.2 Optimizing Capacity. LHMWD will cooperate with EMWD's efforts to optimize EMWD's delivery capacity during the months of July, August, and September 2004, by refraining during such months, to the extent feasible, from exercising their rights to delivery of Entitlement Water and/or Excess Water ("Fruitvale Water") under EMWD's Improvement District No. 24 program as provided in those agreements between the Parties individually and EMWD. It is understood and agreed that LHMWD's cooperation with such effort by EMWD will not result in a loss, waiver, abrogation or diminishment of LHMWD's contract rights under the Fruitvale Agreements or such other rights as LHMWD may have to purchase and receive Fruitvale Water.

2.2 LHMWD's Conditions. The pledges of LHMWD stated in Section 2.1 are subject to the following conditions:

2.2.1 Emergency Production of Water. In the event LHMWD experiences an emergency loss of water production capacity or is otherwise unable to satisfy its municipal demand through the use of its own facilities, as determined by the LHMWD, LHMWD reserves the right to exercise its rights to delivery of Fruitvale Water during the months of July, August and September 2004 and shall pay EMWD the standard rate for Fruitvale Water, for amounts delivered within LHMWD's entitlement. For amounts required by LHMWD and delivered by EMWD over the entitlement amount, LHMWD shall pay EMWD's then current wholesale water rates.

2.2.2 Restriction on Conveyance Water and Exports. That EMWD use its best efforts to eliminate flows from San Jacinto Basin to the Homeland and Juniper flats area during July, August, and September 2004, and to eliminate the use of any conveyance water during the 2004 calendar year in the Menifee Area. EMWD will not otherwise export any water intended for groundwater recharge, or made available due to groundwater recharge, in the Upper San Jacinto Sub-Basins during the 2004 calendar year.

2.2.3 Preservation of Fruitvale Water Rights. Notwithstanding LHMWD's pledge to not exercise its entitlements to purchase and receive Fruitvale Water during July, August and September 2004, such pledge and non-exercise shall not be construed by the Parties or any of them as a waiver, failure to exercise, or other abrogation of LHMWD's rights under the Fruitvale Agreements or Fruitvale Adjudication and such rights shall be preserved, survive without diminishment, and remain valid and in full force and effect.

2.2.4 Compliance by Other Parties. That each other party use its best efforts in good faith to perform and fulfill their respective pledges as expressed in Sections 1.1, 3.2, and 4.2.

2.3 Acceptance of Other Parties' Conditions. LHMWD hereby accepts each other Party's conditions on their respective pledges.

2.4 Cooperation with Other Parties. LHMWD agrees to cooperate with the other Parties to reasonably facilitate each Party's performance of their pledge, to share information and to regularly meet and confer concerning implementation of this MOU as part of the regularly scheduled meetings of the Groundwater Policy Committee or such sub-committee as the Policy Committee shall designate from time to time.

### **ARTICLE 3.0 - HEMET'S PLEDGES AND CONDITIONS**

3.1 Acknowledgement of Conditions. Hemet acknowledges the need of the Parties to cooperatively minimize the impacts on water resources in the Upper San Jacinto Sub-Basins. The Parties acknowledge that groundwater resources and well levels surrounding Hemet's water production facilities in the Hemet Basin have not experienced the same rate of decline, as have facilities of the Parties in the San Jacinto Basin. The Parties further acknowledge that Hemet's temporary reallocation of production from the Upper San Jacinto Sub-Basins to the Hemet Basin, as stated in

Section 3.2.1 [Reallocation of Water Production], is provided by Hemet as a means of cooperating with, and providing benefit to, the other Parties to address the conditions in the Upper San Jacinto Sub-Basins. The Parties also acknowledge that Hemet's temporary reallocation of production will not adversely impact the rights, interests, or facilities of the other Parties, and will not unreasonable contribute to the overdraft of the Hemet Basin.

3.2 **Pledges by Hemet.** Subject to the conditions set forth in Section 3.3, Hemet pledges the following:

3.2.1 **Reallocation of Water Production.** Hemet will reduce its water production and/or receipt from the Upper San Jacinto Sub-Basins during calendar year 2004 by a total of 1072 acre feet. The reduction will be accomplished by: (i) reducing groundwater production from Hemet wells No. 6 and No. 9, by approximately 300 acre feet over the 2004 calendar year; and (ii) by foregoing the exercise of its right to receive deliveries of Entitlement Water or Excess Water ("Fruitvale Water") -- currently 772 acre feet -- under EMWD's Improvement District No. 24 program as provided in that Agreement between Hemet and EMWD dated June 13, 1972 ("Fruitvale Agreement") during calendar year 2004. Hemet will off-set this decrease in water production and/or receipt with an increase in groundwater production from Hemet's new or existing facilities in the Hemet Basin.

3.2.2 **Optimizing Capacity.** Hemet will cooperate with EMWD's efforts to optimize EMWD's delivery capacity during the months of July, August, and September 2004, by refraining during such months, to the extent feasible, from exercising its rights to delivery of Entitlement Water and/or Excess Water ("Fruitvale Water") under EMWD's Improvement District No. 24 program as provided in those agreements between the Parties individually and EMWD ("Fruitvale Agreements"). It is understood and agreed that Hemet's cooperation with such effort by EMWD will not result in a loss, waiver, abrogation or diminishment of Hemet's contract rights under the Fruitvale Agreements or such other rights as Hemet may have to purchase and receive Fruitvale Water.

3.3 **Hemet's Conditions.** The pledge's of Hemet stated in Section 3.2 are subject to the following conditions:

3.3.1 **Emergency Production of Water.** In the event Hemet experiences an emergency loss of water production capacity, or is otherwise unable to satisfy its municipal demand from its own facilities, as determined by the Hemet Water District, Hemet shall be entitled to increase water production from Hemet Well No. 6 and No. 9, or receive Fruitvale Water during the duration of the emergency. Hemet's pledge to reallocate water production as provided in Section 3.2 shall be reduced by the same amount. However, Hemet shall contribute an amount of funds equal to the acre feet of water produced multiplied by EMWD's then current wholesale water rate for the acquisition of replacement water.

3.3.2 Preservation of Water Lease Obligations. Hemet has an obligation to produce one hundred (100) acre feet of water per year each from Well No. 6 and Well No. 9. Notwithstanding anything to the contrary in Section 3.2, Hemet shall be entitled to produce such amounts from these wells. Hemet anticipates that it will be able to meet both its pledged reduction and its lease obligations.

3.3.3 Preservation of Fruitvale Water Rights. Notwithstanding Hemet's pledge to not exercise its entitlements to purchase and receive Fruitvale Water during calendar year 2004, such pledge and non-exercise shall not be construed by the Parties or any of them as a waiver, failure to exercise, or other abrogation of Hemet's rights under the Fruitvale Agreements or Fruitvale Adjudication and such rights shall be preserved, survive without diminishment, and remain valid and in full force and effect.

3.3.4 Restriction on Conveyance Water and Exports. That EMWD use its best efforts to eliminate flows from San Jacinto Basin to the Homeland and Juniper flats area and to eliminate the use of any conveyance water during the 2004 calendar year in the Menifee Area. EMWD will not otherwise export any water intended for groundwater recharge in the Upper San Jacinto Sub-Basins during the 2004 calendar year.

3.3.5 Compliance by Other Parties. That each other party use its best efforts in good faith to perform and fulfill their respective pledges as expressed in Sections 1.1, 2.1, and 4.2.

3.4 Acceptance of Other Parties' Conditions. Hemet hereby accepts each other Party's conditions on their respective pledges.

3.5 Cooperation with Other Parties. Hemet agrees to cooperate with the other Parties to reasonably facilitate each Party's performance of their pledge, to share information and to regularly meet and confer concerning implementation of this MOU as part of the regularly scheduled meetings of the Groundwater Policy Committee or such sub-committee as the Policy Committee shall designate from time to time.

#### **ARTICLE 4.0 - SAN JACINTO'S PLEDGES AND CONDITIONS**

4.1 Acknowledgement of Conditions. San Jacinto acknowledges the need of the Parties to cooperatively minimize the impacts on water resources in the Upper San Jacinto Sub-Basins.

4.2 Pledges by San Jacinto. Subject to the conditions set forth in Section 4.3, San Jacinto pledges the following:

4.2.1 Pledge of Future Credits. San Jacinto pledges 243 acre feet (the current equivalent of \$78,260 at the import water rate of \$322) of future recharge credits that are anticipated to accrue to San Jacinto pursuant to Section 20 of the Principles For Water Management. San Jacinto's recharge credits will be reduced by 243 acre feet once accrued. Another Party may purchase these credits from the

Watermaster for \$78,260, which amount will then be applied to the 2004 interim recharge program.

4.2.2 Optimizing Capacity. San Jacinto will make a good faith effort to cooperate with EMWD's efforts to optimize EMWD's delivery capacity during the months of July, August, and September 2004, by refraining, to the extent feasible in its sole discretion, from exercising its rights to delivery of Entitlement Water and/or Excess Water ("Fruitvale Water") under EMWD's Improvement District No. 24 program as provided in those agreements between the Parties individually and EMWD ("Fruitvale Agreements"). It is understood and agreed that San Jacinto's cooperation with such effort by EMWD will not result in a loss, waiver, abrogation or diminishment of San Jacinto's contract rights under the Fruitvale Agreements or such other rights as San Jacinto may have to purchase and receive Fruitvale Water.

4.3 San Jacinto's Conditions. San Jacinto's pledges as stated in Section 4.2 are subject to the following conditions:

4.3.1 Emergency Production of Water. In the event San Jacinto experiences an emergency loss of water production capacity or is otherwise unable to satisfy its municipal demand through the use of its own facilities, as determined by the San Jacinto, San Jacinto reserves the right to exercise its rights to delivery of Fruitvale Water during the months of July, August and September 2004 and shall pay EMWD the standard rate for Fruitvale Water, for amounts delivered within San Jacinto's entitlement. For amounts required by San Jacinto and delivered by EMWD over the entitlement amount, San Jacinto shall pay EMWD's then current wholesale water rates.

4.3.2 Preservation of Fruitvale Rights. Notwithstanding San Jacinto's pledge to not otherwise exercise its entitlements to purchase and receive Fruitvale Water during July, August and September 2004, such pledge and non-exercise shall not be construed by the Parties or any of them as a waiver, failure to exercise, or other abrogation of San Jacinto's rights under the Fruitvale Agreement or Fruitvale Adjudication and such rights shall be preserved, survive without diminishment, and remain valid and in full force and effect.

4.3.3 Restriction on Conveyances and Exports. That EMWD use its best efforts to eliminate flows from San Jacinto Basin to the Homeland and Juniper flats area and will eliminate the use of any conveyance water during the 2004 calendar year in the Menifee Area. EMWD will not otherwise export any water intended for groundwater recharge in the Upper San Jacinto Sub-Basins during the 2004 calendar year.

4.3.4 Compliance by Other Parties. That each other party use its best efforts in good faith to perform and fulfill their respective pledges as expressed in Sections 1.1, 2.1, and 3.2.

4.4 Acceptance of Other Parties' Conditions. San Jacinto hereby accepts each other Party's conditions on their respective pledges.

4.5 **Cooperation with Other Parties.** San Jacinto agrees to cooperate with the other Parties to reasonably facilitate each Party's performance of their pledge, to share information and to regularly meet and confer concerning implementation of this MOU as part of the regularly scheduled meetings of the Groundwater Policy Committee or such sub-committee as the Policy Committee shall designate from time to time.

**ARTICLE 5.0 - MISCELLANEOUS PROVISIONS**

5.1 **Term.** This MOU shall terminate, unless extended by the mutual agreement of the Parties memorialized in writing, on December 31, 2004.

5.2 **Costs & Expenses.** The Parties shall bear the costs of implementing their own pledges, and shall bear their own costs and expenses otherwise participating in this MOU.

5.3 **Authority.** The individuals executing this Agreement on behalf of the Parties and the instruments referenced on behalf of the Parties represent and warrant that they have the legal power, right and actual authority to bind the Parties to the terms and conditions hereof and thereof.

5.4 **Counterpart Originals.** This Agreement may be executed in duplicate originals, each of which is deemed to be an original.

5.5 **Effective Date.** This MOU has become effective among and between the Parties on the date by which each Party's governing board or council has approved the MOU and the authorized representative of each Party has executed the MOU.

**IN WITNESS WHEREOF,** the Parties hereto have executed this Memorandum of Understanding on the date and year first above written.

EASTERN MUNICIPAL WATER  
DISTRICT

By:

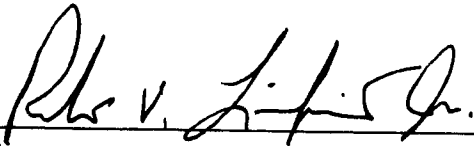


Its:


GENERAL MANAGER

LAKE HEMET MUNICIPAL WATER  
DISTRICT

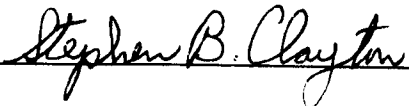


By:   
Its: GENERAL MANAGER


CITY OF HEMET

By:   
Steve Temple, City Manager

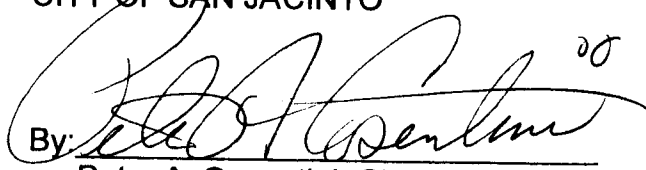
ATTEST:

By:   
Stephen Clayton  
City Clerk

Approved as to Form:

By:   
Eric S. Vail  
Assistant City Attorney for the City  
of Hemet

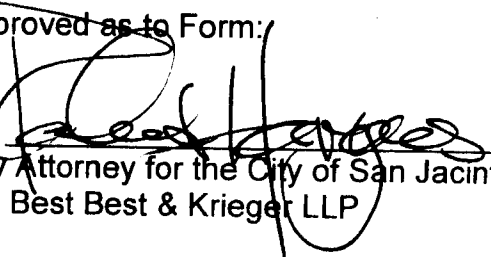
CITY OF SAN JACINTO

By:   
Peter A. Cosentini, City Manager

ATTEST:

  
Dorothy L. Chouinard, City Clerk

Approved as to Form:

By:   
City Attorney for the City of San Jacinto  
Best Best & Krieger LLP



## MEMORANDUM OF UNDERSTANDING

### 2005 INTERIM WATER SUPPLY PLAN

#### UPPER SAN JACINTO SUB-BASINS

This Memorandum Of Understanding; 2005 Interim Water Supply Plan, Upper San Jacinto Sub-Basins ("MOU"), is hereby entered into this 1<sup>ST</sup> day of March, 2005 by and between the EASTERN MUNICIPAL WATER DISTRICT, a California municipal water district ("EMWD"), LAKE HEMET MUNICIPAL WATER DISTRICT, a California municipal water district ("LHMWD"), CITY OF HEMET, a California general law city ("Hemet"), and CITY OF SAN JACINTO, a California general law city ("San Jacinto"), (collectively referred to hereinafter as the "Parties"), based on the following facts:

#### RECITALS

A. The Parties previously entered into that "Memorandum of Understanding Interim Water Supply Plan Upper San Jacinto Sub-Basins" dated April 1, 2004 ("2004 MOU") to purchase supplemental water for recharge into certain portions of the canyon and intake sub-areas of the San Jacinto Basin ("Upper San Jacinto Sub-Basins"). The purpose and rationale of the Interim Water Supply Plan ("IWSP") is more fully recited in the 2004 MOU and is incorporated herein by reference.

B. The Parties have determined that it is in the best interest of each of them to continue the IWSP through calendar year 2005 on the terms and conditions set forth in this MOU. The Parties have also affirmed that continuation of the IWSP in this manner is consistent with their effort to engage in collective approaches to addressing the overdraft while the Parties work toward completion of the Water Management Plan.

C. In furtherance thereof, it is the purpose and intent of the Parties in entering into this MOU to assist in providing for interim stabilization of the Upper San Jacinto Sub-Basins through the application of approximately 8,000 acre feet of direct and indirect groundwater recharge during the calendar year 2005. To implement this goal, the Parties pledge to undertake the following actions during the calendar year 2005.

#### OPERATIVE PROVISIONS

**NOW, THEREFORE**, in consideration of the promises made and recited herein, the Parties do hereby enter into this Memorandum of Understanding setting forth their pledges, commitments, understandings and appropriate limiting conditions, as follows:

#### ARTICLE 1.0 - EMWD's PLEDGES AND CONDITIONS

1.1 **Pledges by EMWD.** Subject to the conditions set forth in Section 1.2, EMWD pledges the following:

1.1.1 Purchase and Recharge of Water. EMWD will contribute up to One Million One Hundred Fifty-eight Thousand Two Hundred Dollars and No Cents (\$1,158,200.00) for the acquisition, transportation, operation, and recharge of imported water into the Upper San Jacinto Sub-Basins. EMWD will coordinate and cooperate with LHMWD and MWD regarding the acquisition of imported water. EMWD understands and agrees that it will implement the transportation and recharge of the purchased imported water into the Upper San Jacinto Sub-Basins using its existing conveyance and spreading facilities within the Management Area.

1.1.2 Restriction on Conveyances and Exports. EMWD will use its best efforts to eliminate flows from San Jacinto Basin to the Homeland and Juniper Flats area during July, August, and September 2005, and will eliminate the use of any conveyance water during the 2005 calendar year in the Menifee Area. EMWD will not otherwise export any water intended for groundwater recharge, or made available due to groundwater recharge, in the Upper San Jacinto Sub-Basins during the 2005 calendar year. In addition, EMWD will pursue construction of Reach 16 to deliver recycled water to the Heartland Area and will investigate water supply contingency plans.

1.2 EMWD's Conditions. The pledges of EMWD stated in Section 1.1 are subject to the following conditions:

1.2.1 Optimizing Capacity. That the Parties cooperate with EMWD's efforts to optimize its delivery capacity during the months of July, August, and September 2005, by refraining, to the extent feasible, from exercising their rights to delivery of Entitlement Water and/or Excess Water ("Fruitvale Water") under EMWD's Improvement District No. 24 program as provided in those agreements between the Parties individually and EMWD ("Fruitvale Agreements"). It is understood and agreed that any Party's cooperation with such effort by EMWD will not result in a loss, waiver, abrogation or diminishment of their contract rights under the Fruitvale Agreements or such other rights the Party may have to purchase and receive Fruitvale Water.

1.2.2 Compliance by Other Parties. That each other Party use its best efforts in good faith to perform and fulfill their respective pledges as expressed in Sections 2.1, 3.1, and 4.1.

1.3 Acceptance of Other Parties' Conditions. EMWD hereby accepts each other Party's conditions on their respective pledges.

1.4 Cooperation with Other Parties. EMWD agrees to cooperate with the other Parties to reasonably facilitate each Party's performance of their pledge, to share information and to regularly meet and confer concerning implementation of this MOU as part of the regularly scheduled meetings of the Groundwater Policy Committee or such sub-committee as the Policy Committee shall designate from time to time.

## ARTICLE 2.0 - LHMWD'S PLEDGES AND CONDITIONS

2.1 **Pledges by LHMWD.** Subject to the conditions set forth in Section 2.2, LHMWD pledges the following:

2.1.1 **Purchase and Recharge of Water.** LHMWD will contribute up to Nine Hundred Eighty-seven Thousand Six Hundred Dollars and No Cents (\$987,600.00) for the acquisition, transportation, operation, and recharge of imported water into the Upper San Jacinto Sub-Basins. LHMWD will coordinate and cooperate with EMWD and MWD regarding the acquisition of imported water. LHMWD understands and agrees that EMWD will implement the transportation and recharge of the purchased imported water into the Upper San Jacinto Sub-Basins using its existing conveyance and spreading facilities within the Management Area.

2.1.2 **Optimizing Capacity.** LHMWD will cooperate with EMWD's efforts to optimize EMWD's delivery capacity during the months of July, August, and September 2005, by refraining during such months, to the extent feasible, from exercising their rights to delivery of Entitlement Water and/or Excess Water ("Fruitvale Water") under EMWD's Improvement District No. 24 program as provided in those agreements between the Parties individually and EMWD. It is understood and agreed that LHMWD's cooperation with such effort by EMWD will not result in a loss, waiver, abrogation or diminishment of LHMWD's contract rights under the Fruitvale Agreements or such other rights as LHMWD may have to purchase and receive Fruitvale Water.

2.2 **LHMWD's Conditions.** The pledges of LHMWD stated in Section 2.1 are subject to the following conditions:

2.2.1 **Emergency Production of Water.** In the event LHMWD experiences an emergency loss of water production capacity or is otherwise unable to satisfy its municipal demand through the use of its own facilities, as determined by the LHMWD, LHMWD reserves the right to exercise its rights to delivery of Fruitvale Water during the months of July, August and September 2005 and shall pay EMWD the standard rate for Fruitvale Water, for amounts delivered within LHMWD's entitlement. For amounts required by LHMWD and delivered by EMWD over the entitlement amount, LHMWD shall pay EMWD's then current wholesale water rates.

2.2.2 **Restriction on Conveyance Water and Exports.** That EMWD use its best efforts to eliminate flows from San Jacinto Basin to the Homeland and Juniper Flats area during July, August, and September 2005, and to eliminate the use of any conveyance water during the 2005 calendar year in the Menifee Area. EMWD will not otherwise export any water intended for groundwater recharge, or made available due to groundwater recharge, in the Upper San Jacinto Sub-Basins during the 2005 calendar year.

2.2.3 **Preservation of Fruitvale Water Rights.** Notwithstanding LHMWD's pledge to not exercise its entitlements to purchase and receive Fruitvale Water during July, August and September 2005, such pledge and non-exercise shall not be construed by the Parties or any of them as a waiver, failure to exercise, or other abrogation of LHMWD's rights under

the Fruitvale Agreements or Fruitvale Adjudication and such rights shall be preserved, survive without diminishment, and remain valid and in full force and effect.

2.2.4 Compliance by Other Parties. That each other Party use its best efforts in good faith to perform and fulfill their respective pledges as expressed in Sections 1.1, 3.1, and 4.1.

2.3 Acceptance of Other Parties' Conditions. LHMWD hereby accepts each other Party's conditions on their respective pledges.

2.4 Cooperation with Other Parties. LHMWD agrees to cooperate with the other Parties to reasonably facilitate each Party's performance of their pledge, to share information and to regularly meet and confer concerning implementation of this MOU as part of the regularly scheduled meetings of the Groundwater Policy Committee or such sub-committee as the Policy Committee shall designate from time to time.

### **ARTICLE 3.0 - HEMET'S PLEDGES AND CONDITIONS**

3.1 Pledges by Hemet. Subject to the conditions set forth in Section 3.2, Hemet pledges the following:

3.1.1 Purchase and Recharge of Water. Hemet will contribute up to One Hundred Sixty-four Thousand Dollars and No Cents (\$164,000.00) for the acquisition, transportation, operation, and recharge of imported water into the Upper San Jacinto Sub-Basins. Hemet will coordinate and cooperate with EMWD and MWD regarding the acquisition of imported water. Hemet understands and agrees that EMWD will implement the transportation and recharge of the purchased imported water into the Upper San Jacinto Sub-Basins using its existing conveyance and spreading facilities within the Management Area.

3.1.2 Optimizing Capacity. Hemet will cooperate with EMWD's efforts to optimize EMWD's delivery capacity during the months of July, August, and September 2005, by refraining during such months, to the extent feasible, from exercising its rights to delivery of Entitlement Water and/or Excess Water ("Fruitvale Water") under EMWD's Improvement District No. 24 program as provided in those agreements between the Parties individually and EMWD ("Fruitvale Agreements"). It is understood and agreed that Hemet's cooperation with such effort by EMWD will not result in a loss, waiver, abrogation or diminishment of Hemet's contract rights under the Fruitvale Agreements or such other rights Hemet may have to purchase and receive Fruitvale Water.

3.2 Hemet's Conditions. The pledges of Hemet stated in Section 3.1 are subject to the following conditions:

3.2.1 Emergency Production of Water. In the event Hemet experiences an emergency loss of water production capacity, or is otherwise unable to satisfy its municipal demand from its own facilities, as determined by the Hemet Water District, Hemet shall be entitled to increase water production from Hemet Well No. 6 and No. 9, or receive Fruitvale

Water during the duration of the emergency. Hemet's pledge to reallocate water production as provided in Section 3.2 shall be reduced by the same amount. However, Hemet shall contribute an amount of funds equal to the acre feet of water produced multiplied by EMWD's then current wholesale water rate for the acquisition of replacement water.

3.2.2 Preservation of Fruitvale Water Rights. Notwithstanding Hemet's pledge to not exercise its entitlements to purchase and receive Fruitvale Water during calendar year 2005, such pledge and non-exercise shall not be construed by the Parties or any of them as a waiver, failure to exercise, or other abrogation of Hemet's rights under the Fruitvale Agreements or Fruitvale Adjudication and such rights shall be preserved, survive without diminishment, and remain valid and in full force and effect.

3.2.3 Restriction on Conveyance Water and Exports. That EMWD use its best efforts to eliminate flows from San Jacinto Basin to the Homeland and Juniper flats area and to eliminate the use of any conveyance water during the 2005 calendar year in the Menifee Area. EMWD will not otherwise export any water intended for groundwater recharge in the Upper San Jacinto Sub-Basins during the 2005 calendar year.

3.2.4 Compliance by Other Parties. That each other Party use its best efforts in good faith to perform and fulfill their respective pledges as expressed in Sections 1.1, 2.1, and 4.1.

3.3 Acceptance of Other Parties' Conditions. Hemet hereby accepts each other Party's conditions on their respective pledges.

3.4 Cooperation with Other Parties. Hemet agrees to cooperate with the other Parties to reasonably facilitate each Party's performance of their pledge, to share information and to regularly meet and confer concerning implementation of this MOU as part of the regularly scheduled meetings of the Groundwater Policy Committee or such sub-committee as the Policy Committee shall designate from time to time.

#### **ARTICLE 4.0 - SAN JACINTO'S PLEDGES AND CONDITIONS**

4.1 Pledges by San Jacinto. Subject to the conditions set forth in Section 4.3, San Jacinto pledges the following:

4.1.1 Purchase and Recharge of Water. San Jacinto will contribute up to Ninety Thousand Two Hundred Dollars and No Cents (\$90,200.00) for the acquisition, transportation, operation, and recharge of imported water into the Upper San Jacinto Sub-Basins. San Jacinto will coordinate and cooperate with EMWD and MWD regarding the acquisition of imported water. San Jacinto understands and agrees that EMWD will implement the transportation and recharge of the purchased imported water into the Upper San Jacinto Sub-Basins using its existing conveyance and spreading facilities within the Management Area.

4.1.2 Optimizing Capacity. San Jacinto will make a good faith effort to cooperate with EMWD's efforts to optimize EMWD's delivery capacity during the months of

July, August, and September 2005, by refraining, to the extent feasible in its sole discretion, from exercising its rights to delivery of Entitlement Water and/or Excess Water ("Fruitvale Water") under EMWD's Improvement District No. 24 program as provided in those agreements between the Parties individually and EMWD ("Fruitvale Agreements"). It is understood and agreed that San Jacinto's cooperation with such effort by EMWD will not result in a loss, waiver, abrogation or diminishment of San Jacinto's contract rights under the Fruitvale Agreements or such other rights as San Jacinto may have to purchase and receive Fruitvale Water.

4.2 **San Jacinto's Conditions.** San Jacinto's pledges as stated in Section 4.2 are subject to the following conditions:

4.2.1 **Emergency Production of Water.** In the event San Jacinto experiences an emergency loss of water production capacity or is otherwise unable to satisfy its municipal demand through the use of its own facilities, as determined by San Jacinto, San Jacinto reserves the right to exercise its rights to delivery of Fruitvale Water during the months of July, August and September 2005 and shall pay EMWD the standard rate for Fruitvale Water, for amounts delivered within San Jacinto's entitlement. For amounts required by San Jacinto and delivered by EMWD over the entitlement amount, San Jacinto shall pay EMWD's then current wholesale water rates.

4.2.2 **Preservation of Fruitvale Rights.** Notwithstanding San Jacinto's pledge to not otherwise exercise its entitlements to purchase and receive Fruitvale Water during July, August and September 2005, such pledge and non-exercise shall not be construed by the Parties or any of them as a waiver, failure to exercise, or other abrogation of San Jacinto's rights under the Fruitvale Agreement or Fruitvale Adjudication and such rights shall be preserved, survive without diminishment, and remain valid and in full force and effect.

4.2.3 **Restriction on Conveyances and Exports.** That EMWD use its best efforts to eliminate flows from San Jacinto Basin to the Homeland and Juniper flats area and will eliminate the use of any conveyance water during the 2004 calendar year in the Menifee Area. EMWD will not otherwise export any water intended for groundwater recharge in the Upper San Jacinto Sub-Basins during the 2005 calendar year.

4.2.4 **Compliance by Other Parties.** That each other party use its best efforts in good faith to perform and fulfill their respective pledges as expressed in Sections 1.1, 2.1, and 3.1.

4.3 **Acceptance of Other Parties' Conditions.** San Jacinto hereby accepts each other Party's conditions on their respective pledges.

4.4 **Cooperation with Other Parties.** San Jacinto agrees to cooperate with the other Parties to reasonably facilitate each Party's performance of their pledge, to share information and to regularly meet and confer concerning implementation of this MOU as part of the regularly scheduled meetings of the Groundwater Policy Committee or such sub-committee as the Policy Committee shall designate from time to time.



## ARTICLE 5.0 - MISCELLANEOUS PROVISIONS

5.1 **Term.** This MOU shall terminate, unless extended by the mutual agreement of the Parties memorialized in writing, on December 31, 2005.

5.2 **Invoicing.** The Parties agree that EMWD shall invoice each Party for its contribution to the 2005 IWSP either in one lump sum during the Term, or in installments over the Term as is agreed upon by the Party being invoiced and arranged by that Party with EMWD.

5.3 **Costs & Expenses.** The Parties shall bear the costs of implementing their own pledges, and shall bear their own costs and expenses of otherwise participating in this MOU.

5.4 **Authority.** The individuals executing this Agreement on behalf of the Parties and the instruments referenced on behalf of the Parties represent and warrant that they have the legal power, right and actual authority to bind the Parties to the terms and conditions hereof and thereof.

5.5 **Counterpart Originals.** This Agreement may be executed in duplicate originals, each of which is deemed to be an original.

5.6 **Effective Date.** This MOU has become effective among and between the Parties on the date by which each Party's governing board or council has approved the MOU and the authorized representative of each Party has executed the MOU.

**IN WITNESS WHEREOF,** the Parties hereto have executed this Memorandum of Understanding on the date and year first above written.

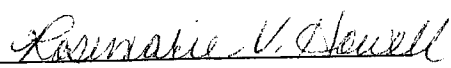
[SIGNATURE PAGES FOLLOW]

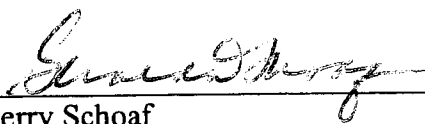
**EASTERN MUNICIPAL WATER DISTRICT**

By:   
Tony Pack  
General Manager

ATTEST:

Approved as to Form:

By:   
Board Secretary

By:   
Gerry Schoaf  
General Counsel

LAKE HEMET MUNICIPAL WATER DISTRICT

By: Rob Lindquist  
Rob Lindquist, General Manager


ATTEST:

Approved as to Form:

By: Karen Hornbarger  
Karen Hornbarger, ~~Secretary~~  
Assistant Secretary

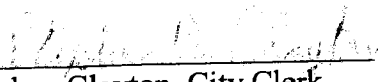
By: Arthur L. Littleworth  
Arthur Littleworth, General Counsel

**CITY OF HEMET**

By:   
Steve Temple, City Manager

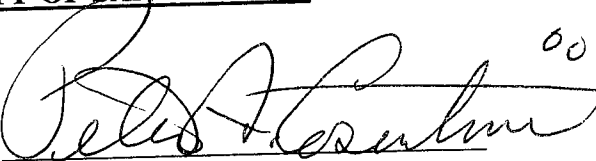
ATTEST:

Approved as to Form:

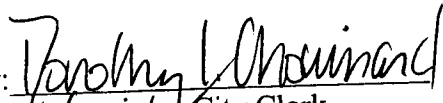
By:   
Stephen Clayton, City Clerk

By:   
Eric S. Vail, City Attorney

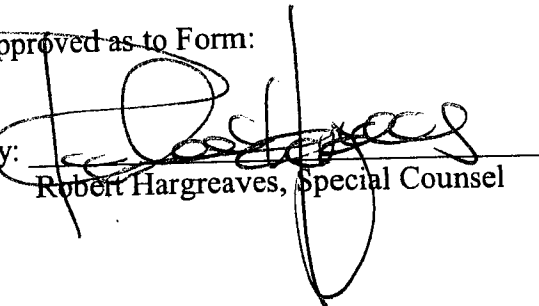
**CITY OF SAN JACINTO**

By:  00  
Peter Cosentini, City Manager

ATTEST:

By:   
~~San Jacinto~~ City Clerk

Approved as to Form:

By:   
Robert Hargreaves, Special Counsel



**MEMORANDUM OF UNDERSTANDING**

**2006 INTERIM WATER SUPPLY PLAN**

**UPPER SAN JACINTO SUB-BASINS**

This Memorandum Of Understanding; 2006 Interim Water Supply Plan, Upper San Jacinto Sub-Basins ("MOU"), is hereby dated for reference purposes as of March 5, 2006, by and between the EASTERN MUNICIPAL WATER DISTRICT, a California municipal water district ("EMWD"), LAKE HEMET MUNICIPAL WATER DISTRICT, a California municipal water district ("LHMWD"), CITY OF HEMET, a California general law city ("Hemet"), and CITY OF SAN JACINTO, a California general law city ("San Jacinto"), (collectively referred to hereinafter as the "Parties"), based on the following facts:

**RECITALS**

A. The Parties previously entered into that "Memorandum of Understanding, Interim Water Supply Plan, Upper San Jacinto Sub-Basins" dated April 1, 2004 ("2004 MOU") and that "Memorandum of Understanding, 2005 Interim Water Supply Plan, Upper San Jacinto Sub-Basins" dated March 1, 2005 ("2005 MOU"). The purpose and rationale of the Interim Water Supply Plan ("IWSP") as reflected in the 2004 MOU and 2005 MOU is to purchase supplemental water for recharge into certain portions of the canyon and intake sub-areas of the San Jacinto Basin ("Upper San Jacinto Sub-Basins").

B. The IWSP was undertaken by the parties as an interim measure pending completion and adoption of a Water Management Plan and entry of a Stipulated Judgment (collectively "WMP") by a Court of competent jurisdiction, binding the Parties to a long term solution to managing and resolving the overdraft of the Hemet / San Jacinto Basin ("Management Area"). Although the Parties have been working earnestly toward completion of the WMP, it is anticipated that the WMP will not be finalized and adopted by all Parties sufficiently early in 2006 so as to supersede the need for the IWSP.

C. Based on this state of affairs, the Parties have determined that it is in their mutual best interests to continue the IWSP through calendar year 2006 and/or until such time as the WMP is finalized and adopted by all of the Parties. The Parties have also affirmed that continuation of the IWSP in this manner is consistent with their effort to engage in collective approaches to addressing the overdraft while the Parties work toward completion of the WMP.

D. In furtherance thereof, it is the purpose and intent of the Parties in entering into this MOU to assist in providing for interim stabilization of the Upper San Jacinto Sub-Basins through the application of approximately 6,000 acre feet of direct and indirect groundwater recharge during the calendar year 2006 and an equivalent or greater amount of water, adequate supply providing, in subsequent years. To implement this goal, the Parties pledge to undertake the following actions.

## OPERATIVE PROVISIONS

**NOW, THEREFORE**, in consideration of the promises made and recited herein, the Parties do hereby enter into this Memorandum of Understanding setting forth their pledges, commitments, understandings and appropriate limiting conditions, as follows:

### ARTICLE 1.0 - EMWD's PLEDGES AND CONDITIONS

1.1 **Pledges by EMWD.** Subject to the conditions set forth in Section 1.2, EMWD pledges the following:

1.1.1 **Purchase and Recharge of Water.** During the Term of this MOU, EMWD agrees to contribute funds, in the amounts provided for in this MOU, for the acquisition, transportation, operation, and recharge of imported water into the Upper San Jacinto Sub-Basins. EMWD will coordinate and cooperate with LHMWD and MWD regarding the acquisition of imported water. EMWD understands and agrees that it will implement the transportation and recharge of the purchased imported water into the Upper San Jacinto Sub-Basins using its existing conveyance and spreading facilities within the Management Area. For calendar 2006, EMWD agrees to contribute up to Six Hundred Seventy-Five Thousand Seven Hundred Dollars and No Cents (\$675,700.00) for imported water under the MOU.

1.1.2 **Restriction on Conveyances and Exports.** EMWD will use its best efforts to eliminate flows from San Jacinto Basin to the Homeland and Juniper Flats area during July, August, and September 2006, and will eliminate the use of any conveyance water during the 2006 calendar year in the Menifee Area. EMWD will not otherwise export any water intended for groundwater recharge, or made available due to groundwater recharge, in the Upper San Jacinto Sub-Basins during the 2006 calendar year. In addition, EMWD will investigate water supply contingency plans.

1.1.3 **Continued Participation in IWSP.** Subject to Section 5.1 EMWD agrees that it will continue its participation in the Interim Water Supply Plan in the same manner and to the same extent as set forth in Article 1.0 of the MOU during each subsequent calendar year until the WMP has been finalized and adopted by all parties.

1.2 **EMWD's Conditions.** The pledges of EMWD stated in Section 1.1 are subject to the following conditions:

1.2.1 **Optimizing Capacity.** That the Parties cooperate with EMWD's efforts to optimize its delivery capacity during the months of July, August, and September 2006, by refraining, to the extent feasible, from exercising their rights to delivery of Entitlement Water and/or Excess Water ("Fruitvale Water") under EMWD's Improvement District No. 24 program as provided in those agreements between the Parties individually and EMWD ("Fruitvale Agreements"). It is understood and agreed that any Party's cooperation with such effort by EMWD will not result in a loss, waiver, abrogation or diminishment of their contract rights under the Fruitvale Agreements or such other rights the Party may have to purchase and receive Fruitvale Water.



1.2.2 Compliance by Other Parties. That each other Party use its best efforts in good faith to perform and fulfill their respective pledges as expressed in Sections 2.1, 3.1, and 4.1.

1.3 Acceptance of Other Parties' Conditions. EMWD hereby accepts each other Party's conditions on their respective pledges.

1.4 Cooperation with Other Parties. EMWD agrees to cooperate with the other Parties to reasonably facilitate each Party's performance of their pledge, to share information and to regularly meet and confer concerning implementation of this MOU as part of the regularly scheduled meetings of the Groundwater Policy Committee or such sub-committee as the Policy Committee shall designate from time to time.

## **ARTICLE 2.0 - LHMWD'S PLEDGES AND CONDITIONS**

2.1 Pledges by LHMWD. Subject to the conditions set forth in Section 2.2, LHMWD pledges the following:

2.1.1 Purchase and Recharge of Water. During the Term of this MOU, LHMWD agrees to contribute funds, in the amounts provided for in this MOU, for the acquisition, transportation, operation, and recharge of imported water into the Upper San Jacinto Sub-Basins. LHMWD will coordinate and cooperate with EMWD and MWD regarding the acquisition of imported water. LHMWD understands and agrees that EMWD will implement the transportation and recharge of the purchased imported water into the Upper San Jacinto Sub-Basins using its existing conveyance and spreading facilities within the Management Area. For calendar 2006, LHMWD agrees to contribute up to Eight Hundred Forty-Two Thousand Four Hundred Dollars and No Cents (\$842,400.00) for imported water under the MOU.

2.1.2 Optimizing Capacity. LHMWD will cooperate with EMWD's efforts to optimize EMWD's delivery capacity during the months of July, August, and September 2006, by refraining during such months, to the extent feasible, from exercising their rights to delivery of Entitlement Water and/or Excess Water ("Fruitvale Water") under EMWD's Improvement District No. 24 program as provided in those agreements between the Parties individually and EMWD. It is understood and agreed that LHMWD's cooperation with such effort by EMWD will not result in a loss, waiver, abrogation or diminishment of LHMWD's contract rights under the Fruitvale Agreements or such other rights as LHMWD may have to purchase and receive Fruitvale Water.

2.1.3 Continued Participation in IWSP. Subject to Section 5.1, LHMWD agrees that it will continue its participation in the Interim Water Supply Plan in the same manner and to the same extent as set forth in Article 2.0 of the MOU during each subsequent calendar year until the WMP has been finalized and adopted by all parties.

2.2 LHMWD's Conditions. The pledges of LHMWD stated in Section 2.1 are subject to the following conditions:

2.2.1 Emergency Production of Water. In the event LHMWD experiences an emergency loss of water production capacity or is otherwise unable to satisfy its municipal demand through the use of its own facilities, as determined by the LHMWD, LHMWD reserves the right to exercise its rights to delivery of Fruitvale Water during the months of July, August and September 2006 and shall pay EMWD the standard rate for Fruitvale Water, for amounts delivered within LHMWD's entitlement. For amounts required by LHMWD and delivered by EMWD over the entitlement amount, LHMWD shall pay EMWD's then current wholesale water rates.

2.2.2 Restriction on Conveyance Water and Exports. That EMWD use its best efforts to eliminate flows from San Jacinto Basin to the Homeland and Juniper Flats area during July, August, and September 2006, and to eliminate the use of any conveyance water during the 2005 calendar year in the Menifee Area. EMWD will not otherwise export any water intended for groundwater recharge, or made available due to groundwater recharge, in the Upper San Jacinto Sub-Basins during the 2006 calendar year.

2.2.3 Preservation of Fruitvale Water Rights. Notwithstanding LHMWD's pledge to not exercise its entitlements to purchase and receive Fruitvale Water during July, August and September 2006, such pledge and non-exercise shall not be construed by the Parties or any of them as a waiver, failure to exercise, or other abrogation of LHMWD's rights under the Fruitvale Agreements or Fruitvale Adjudication and such rights shall be preserved, survive without diminishment, and remain valid and in full force and effect.

2.2.4 Compliance by Other Parties. That each other Party use its best efforts in good faith to perform and fulfill their respective pledges as expressed in Sections 1.1, 3.1, and 4.1.

2.3 Acceptance of Other Parties' Conditions. LHMWD hereby accepts each other Party's conditions on their respective pledges.

2.4 Cooperation with Other Parties. LHMWD agrees to cooperate with the other Parties to reasonably facilitate each Party's performance of their pledge, to share information and to regularly meet and confer concerning implementation of this MOU as part of the regularly scheduled meetings of the Groundwater Policy Committee or such sub-committee as the Policy Committee shall designate from time to time.

## **ARTICLE 3.0 - HEMET'S PLEDGES AND CONDITIONS**

3.1 Pledges by Hemet. Subject to the conditions set forth in Section 3.2, Hemet pledges the following:

3.1.1 Purchase and Recharge of Water. During the Term of this MOU, Hemet agrees to contribute funds, in the amounts provided for in this MOU, for the acquisition, transportation, operation, and recharge of imported water into the Upper San Jacinto Sub-Basins. Hemet will coordinate and cooperate with EMWD and MWD regarding the acquisition of imported water. Hemet understands and agrees that EMWD will implement the transportation and recharge of the purchased imported water into the Upper San Jacinto Sub-Basins using its

existing conveyance and spreading facilities within the Management Area. For calendar 2006, Hemet agrees to contribute up to One Hundred Ninety-Four Thousand Dollars and No Cents (\$194,000.00) for imported water under the MOU.

3.1.2 Optimizing Capacity. Hemet will cooperate with EMWD's efforts to optimize EMWD's delivery capacity during the months of July, August, and September 2006, by refraining during such months, to the extent feasible, from exercising its rights to delivery of Entitlement Water and/or Excess Water ("Fruitvale Water") under EMWD's Improvement District No. 24 program as provided in those agreements between the Parties individually and EMWD ("Fruitvale Agreements"). It is understood and agreed that Hemet's cooperation with such effort by EMWD will not result in a loss, waiver, abrogation or diminishment of Hemet's contract rights under the Fruitvale Agreements or such other rights Hemet may have to purchase and receive Fruitvale Water.

3.1.3 Continued Participation in IWSP. Subject to Section 5.1, Hemet agrees that it will continue its participation in the Interim Water Supply Plan in the same manner and to the same extent as set forth in Article 3.0 of the MOU during each subsequent calendar year until the WMP has been finalized and adopted by all parties.

3.2 Hemet's Conditions. The pledges of Hemet stated in Section 3.1 are subject to the following conditions:

3.2.1 Emergency Production of Water. In the event Hemet experiences an emergency loss of water production capacity, or is otherwise unable to satisfy its municipal demand from its own facilities, as determined by the Hemet Water Department, Hemet shall be entitled to increase water production from any one or more of Hemet's wells located within the Upper San Jacinto Sub-Basins, or receive Fruitvale Water during the duration of the emergency for which Hemet shall pay EMWD the standard rate for Fruitvale Water, for amounts delivered within Hemet's entitlement. For amounts required by Hemet and delivered by EMWD over the entitlement amount, Hemet shall pay EMWD's then current wholesale water rates.

3.2.2 Preservation of Fruitvale Water Rights. Notwithstanding Hemet's pledge to not exercise its entitlements to purchase and receive Fruitvale Water during calendar year 2006, such pledge and non-exercise shall not be construed by the Parties or any of them as a waiver, failure to exercise, or other abrogation of Hemet's rights under the Fruitvale Agreements or Fruitvale Adjudication and such rights shall be preserved, survive without diminishment, and remain valid and in full force and effect.

3.2.3 Restriction on Conveyance Water and Exports. That EMWD use its best efforts to eliminate flows from San Jacinto Basin to the Homeland and Juniper flats area and to eliminate the use of any conveyance water during the 2006 calendar year in the Menifee Area. EMWD will not otherwise export any water intended for groundwater recharge in the Upper San Jacinto Sub-Basins during the 2006 calendar year.

3.2.4 Compliance by Other Parties. That each other Party use its best efforts in good faith to perform and fulfill their respective pledges as expressed in Sections 1.1, 2.1, and 4.1.

3.3 **Acceptance of Other Parties' Conditions.** Hemet hereby accepts each other Party's conditions on their respective pledges.

3.4 **Cooperation with Other Parties.** Hemet agrees to cooperate with the other Parties to reasonably facilitate each Party's performance of their pledge, to share information and to regularly meet and confer concerning implementation of this MOU as part of the regularly scheduled meetings of the Groundwater Policy Committee or such sub-committee as the Policy Committee shall designate from time to time.

#### **ARTICLE 4.0 - SAN JACINTO'S PLEDGES AND CONDITIONS**

4.1 **Pledges by San Jacinto.** Subject to the conditions set forth in Section 4.3, San Jacinto pledges the following:

4.1.1 **Purchase and Recharge of Water.** During the Term of this MOU, San Jacinto agrees to contribute funds, in the amounts provided for in this MOU, for the acquisition, transportation, operation, and recharge of imported water into the Upper San Jacinto Sub-Basins. San Jacinto will coordinate and cooperate with EMWD and MWD regarding the acquisition of imported water. San Jacinto understands and agrees that EMWD will implement the transportation and recharge of the purchased imported water into the Upper San Jacinto Sub-Basins using its existing conveyance and spreading facilities within the Management Area. For calendar 2006, San Jacinto agrees to contribute up to Eighty-Seven Thousand Nine Hundred Dollars and No Cents (\$87,900.00) for imported water under the MOU.

4.1.2 **Optimizing Capacity.** San Jacinto will make a good faith effort to cooperate with EMWD's efforts to optimize EMWD's delivery capacity during the months of July, August, and September 2006, by refraining, to the extent feasible in its sole discretion, from exercising its rights to delivery of Entitlement Water and/or Excess Water ("Fruitvale Water") under EMWD's Improvement District No. 24 program as provided in those agreements between the Parties individually and EMWD ("Fruitvale Agreements"). It is understood and agreed that San Jacinto's cooperation with such effort by EMWD will not result in a loss, waiver, abrogation or diminishment of San Jacinto's contract rights under the Fruitvale Agreements or such other rights as San Jacinto may have to purchase and receive Fruitvale Water.

4.1.3 **Continued Participation in IWSP.** Subject to Section 5.1, San Jacinto agrees that it will continue its participation in the Interim Water Supply Plan in the same manner and to the same extent as set forth in Article 4.0 of the MOU during each subsequent calendar year until the WMP has been finalized and adopted by all parties.

4.2 **San Jacinto's Conditions.** San Jacinto's pledges as stated in Section 4.1 are subject to the following conditions:

4.2.1 **Emergency Production of Water.** In the event San Jacinto experiences an emergency loss of water production capacity or is otherwise unable to satisfy its municipal demand through the use of its own facilities, as determined by San Jacinto, San Jacinto reserves the right to exercise its rights to delivery of Fruitvale Water during the months of July, August and September 2006 and shall pay EMWD the standard rate for Fruitvale Water, for amounts

delivered within San Jacinto's entitlement. For amounts required by San Jacinto and delivered by EMWD over the entitlement amount, San Jacinto shall pay EMWD's then current wholesale water rates.

4.2.2 Preservation of Fruitvale Rights. Notwithstanding San Jacinto's pledge to not otherwise exercise its entitlements to purchase and receive Fruitvale Water during July, August and September 2006, such pledge and non-exercise shall not be construed by the Parties or any of them as a waiver, failure to exercise, or other abrogation of San Jacinto's rights under the Fruitvale Agreement or Fruitvale Adjudication and such rights shall be preserved, survive without diminishment, and remain valid and in full force and effect.

4.2.3 Restriction on Conveyances and Exports. That EMWD use its best efforts to eliminate flows from San Jacinto Basin to the Homeland and Juniper flats area and will eliminate the use of any conveyance water during the 2006 calendar year in the Menifee Area. EMWD will not otherwise export any water intended for groundwater recharge in the Upper San Jacinto Sub-Basins during the 2006 calendar year.

4.2.4 Compliance by Other Parties. That each other party use its best efforts in good faith to perform and fulfill their respective pledges as expressed in Sections 1.1, 2.1, and 3.1.

4.3 Acceptance of Other Parties' Conditions. San Jacinto hereby accepts each other Party's conditions on their respective pledges.

4.4 Cooperation with Other Parties. San Jacinto agrees to cooperate with the other Parties to reasonably facilitate each Party's performance of their pledge, to share information and to regularly meet and confer concerning implementation of this MOU as part of the regularly scheduled meetings of the Groundwater Policy Committee or such sub-committee as the Policy Committee shall designate from time to time.

## **ARTICLE 5.0 - MISCELLANEOUS PROVISIONS**

5.1 Term and Continuation of the IWSP. This MOU shall terminate, unless extended by the mutual agreement of the Parties memorialized in writing, on the earlier of the following dates: (i) the date upon which two or more Parties mutually agree to terminate the MOU; (ii) the date upon which all Parties have adopted the WMP; or (iii) December 31, 2008. During the Term of this MOU, all of the obligations of the Parties shall be continued and carried over to the next calendar year, subject to adjustment for the amount of water to be recharged in any subsequent year. The Parties acknowledge that the amount of water to be recharged may fluctuate year to year depending upon conditions within the Management Area, the availability of Imported Water, and the ability to receive and recharge such water. The Parties agree that the goal is to purchase and recharge between 6,000 to 8,000 acre feet of Imported Water each year during the Term. The Parties shall meet and confer during the last quarter of the preceding year to determine the amount of water and the anticipated cost to be apportioned among the Parties for the forthcoming year and memorialized in a statement signed by the managers of all Parties. In any year subsequent to 2006, no Party shall be obligated to contribute more than one hundred

twenty-five percent (125%) of its contribution assigned for the prior year without approval of its Board or Council.

5.2 **Invoicing**. The Parties agree that EMWD shall invoice each Party for its contribution to the 2006 IWSP and subsequent years, either in one lump sum during the year, or in installments over the year as is agreed upon by the Party being invoiced and arranged by that Party with EMWD.

5.3 **Costs & Expenses**. The Parties shall bear the costs of implementing their own pledges, and shall bear their own costs and expenses of otherwise participating in this MOU.

5.4 **Authority**. The individuals executing this Agreement on behalf of the Parties and the instruments referenced on behalf of the Parties represent and warrant that they have the legal power, right and actual authority to bind the Parties to the terms and conditions hereof and thereof.

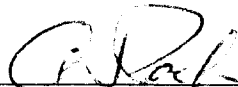
5.5 **Counterpart Originals**. This Agreement may be executed in duplicate originals, each of which is deemed to be an original

5.6 **Effective Date**. This MOU has become effective among and between the Parties on the date by which each Party's governing board or council has approved the MOU and the authorized representative of each Party has executed the MOU.

**IN WITNESS WHEREOF**, the Parties hereto have executed this Memorandum of Understanding on the date and year first above written.

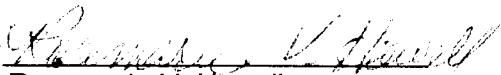
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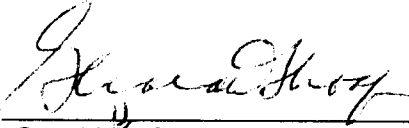
**EASTERN MUNICIPAL WATER DISTRICT**

By: \_\_\_\_\_  
Anthony J. Pack  
General Manager

ATTEST:

Approved as to Form:

By: \_\_\_\_\_  
Rosemarie V. Howell  
Board Secretary

By: \_\_\_\_\_  
Gerald R. Shoaf  
General Counsel

**LAKE HEMET MUNICIPAL WATER DISTRICT**

By: Thomas W. Wagoner  
Tom Wagoner, General Manager

ATTEST:

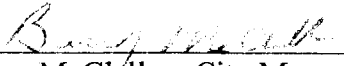
Approved as to Form:

By: Karen Hornbarger  
Assistant Secretary  
Karen Hornbarger

By: Arthur L. Littleworth  
Arthur Littleworth, General Counsel

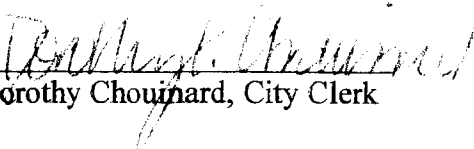


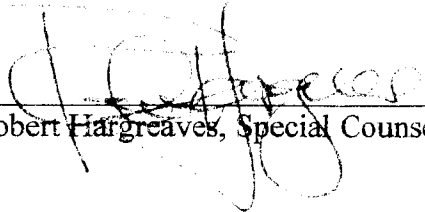
**CITY OF SAN JACINTO**

By:   
Barry McClellan, City Manager


ATTEST:

Approved as to Form:

By:   
Dorothy Chouinard, City Clerk


By:   
Robert Hargreaves, Special Counsel

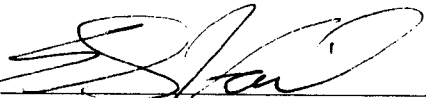
**CITY OF HEMET**

By:   
\_\_\_\_\_  
Steve Temple, City Manager

ATTEST:

Approved as to Form:

By:   
\_\_\_\_\_  
Stephen Clayton, City Clerk

By:   
\_\_\_\_\_  
Eric S. Vail, City Attorney





## Water Management Plan GWMP Components

Description	Section(s)
<b><i>SB 1938 Mandatory Components</i></b>	
1. Documentation of public involvement	2.2.4, 11.10
2. BMO(s)	3.1
3. Monitoring and management of groundwater elevations, groundwater quality, inelastic land subsidence, and changes in surface water flows and quality that directly affect groundwater levels or quality	3.1.7, 3.2.7, 11.2
4. Plan to involve other agencies located in the groundwater basin	2
5. Adoption of monitoring protocols	11.2
6. Map of groundwater basin boundary, as delineated by DWR Bulletin 118, with agencies boundaries that are subject to GWMP	2.2, 4.1
7. For agencies not overlying groundwater basins, prepare the GWMP using appropriate geologic and hydrogeologic principles	N/A
<b><i>AB 3030 and SB 1938 Voluntary Components</i></b>	
1. Control of saline water intrusion	3.2.3
2. Identify and manage well protection and recharge areas	3.2, 11.2
3. Regulate the migration of contaminated groundwater	3.2
4. Administer well-abandonment and destruction program	11.2, 11.9
5. Control and mitigate groundwater overdraft	3.2, 5.3
6. Replenish groundwater	3.2, 5.3
7. Monitor groundwater levels	3.2, 11.2
8. Develop and operate conjunctive use projects	3.2, 5.3
9. Identify well-construction policies	11.9
10. Develop and operate groundwater contamination cleanup, recharge, storage, conservation, water-recycling, and extraction projects	3.2, 5.3
11. Develop relationships with state and federal regulatory agencies	1.1, 3.2, 4.10
12. Review land use plans and coordinate with land use planning agencies to assess activities that create reasonable risk of groundwater contamination	5.1
<b><i>DWR Bulletin 118 Suggested Components</i></b>	
1. Manage with guidance of advisory committee	2.4, 9
2. Describe area to be managed under GWMP	2.1
3. Create links between BMOs and goals and actions of GWMP	3, 11.6
4. Describe GWMP monitoring programs	3.2, 11.2
5. Describe integrated water-management planning efforts	3.2, 4.8.3, 5.3.3.1, 5.3.3.6

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Description	Section(s)
6. Report of implementation of GWMP	11.2, 11.5
7. Evaluate GWMP periodically	11.5, 9.6.2



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## Appendix G: Stipulated Judgment

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**FILED**  
SUPERIOR COURT OF CALIFORNIA  
COUNTY OF RIVERSIDE  
APR 18 2013  
D. Pollard

Attorneys for Plaintiff  
EASTERN MUNICIPAL WATER DISTRICT

SUPERIOR COURT OF THE STATE OF CALIFORNIA  
IN AND FOR THE COUNTY OF RIVERSIDE

EASTERN MUNICIPAL WATER DISTRICT,	)	CASE NO.:
A California Municipal Water District,	)	
	)	STIPULATED JUDGMENT
	)	
Plaintiff,	)	
vs.	)	
	)	
CITY OF HEMET;	)	
CITY OF SAN JACINTO;	)	
LAKE HEMET MUNICIPAL WATER	)	
DISTRICT;	)	
DOES 1 through 1,000, inclusive,	)	
	)	
Defendants.	)	
	)	

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**JUDGMENT**

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**FINDINGS**

After consideration of the pleadings and the Stipulation for Entry of Judgment, the Court finds that:

1. **Complaint.** On May 16, 2012, Plaintiff Eastern Municipal Water District ("Eastern") filed a Complaint against Defendants Lake Hemet Municipal Water District ("Lake Hemet"), City of Hemet ("Hemet"), City of San Jacinto ("San Jacinto"), and DOES 1 through 1,000, inclusive. The Complaint requests a declaration of Plaintiff's and Defendants' individual and collective rights to Surface Water and Groundwater in the Canyon Subbasin, the San Jacinto Upper Pressure Subbasin downstream to Bridge Street, and the Hemet Basin ("Management Area") and the imposition of a Physical Solution to achieve the optimum, reasonable, beneficial use of the waters of the Management Area pursuant to section 2 of article X of the California Constitution. A map describing the boundaries of the Management Area is attached to this Judgment as Exhibit "A" and to the Complaint.

2. **Parties.**

A. **Eastern.** Eastern is a California municipal water district formed pursuant to the Municipal Water District Law, California Water Code Sections 71000-73001 (West 1966), with its principal place of business in Riverside County, California. Eastern diverts Surface Water from the San Jacinto River, and pumps Groundwater from the Management Area for use by its customers within its boundaries.

B. **Lake Hemet.** Lake Hemet is a California municipal water district formed pursuant to the Municipal Water District Law, California Water Code Sections 71000-73001 (West 1966), with its principal place of business in Riverside County, California. Lake Hemet diverts Surface Water from the Santa Jacinto River and its tributaries, and pumps Groundwater from the Management Area for use by its customers within its boundaries.

C. **Hemet.** Hemet is a California municipal corporation providing utility services pursuant to the California Constitution, article XI, section 9. Hemet pumps Groundwater from the Management Area for use by its customers within its boundaries.



1                   **D.     San Jacinto.** San Jacinto is a California municipal corporation providing  
2 utility services pursuant to the California Constitution, article XI, section 9. San Jacinto pumps  
3 Groundwater from the Management Area for use by its customers within its boundaries.

4                   **E.     Pumpers.** Does 1 through 1,000, inclusive, are Persons or entities who  
5 own farms or other property within the Management Area, and pump Groundwater from the  
6 Management Area.

7                   **3.     Answers and Stipulation for Judgment.** All defendants have filed Answers,  
8 and all Parties have filed a Stipulation for Entry of Judgment.

9                   **4.     Sole Producers.** Other than the Soboba Band of Luiseño Indians, and certain  
10 overlying users not Parties to this litigation, the Parties claim essentially all of the rights to  
11 produce Surface Water and Groundwater in the Management Area.

12                   **5.     Importance of Surface Water and Groundwater.** Surface water and  
13 Groundwater from the Management Area are important water supplies for agriculture, domestic  
14 and municipal use. The Parties have a mutual and collective interest in the coordinated  
15 management of such water resources to ensure that the common resource is used efficiently and  
16 reasonably, and that it is sustained and replenished.

17                   **6.     Overdraft.** It is estimated that the Overdraft of the Management Area is  
18 approximately 10,000 acre-feet per year. This estimate will be refined through further studies to  
19 be completed pursuant to the Water Management Plan, including data on the several subbasins  
20 within the Management Area. Studies confirm that in recent years the total Groundwater  
21 production from the Management Area, including pumping by those Persons not Parties to this  
22 litigation, has averaged approximately 54,800 acre-feet per year.

23                   **7.     Importance of Judgment.** The Parties have an interest in the Physical Solution  
24 imposed by this Judgment to promote the efficient and coordinated management of Surface  
25 Water and Groundwater, to avoid problems from Overdraft, to assist in protecting the rights of  
26 the Soboba Band of Luiseño Indians, to sustain and enhance water resources, and to resolve  
27 competing claims to Surface Water and Groundwater.

28                   **8.     Jurisdiction.** This Court has jurisdiction to enter this Judgment declaring and

1 adjudicating the rights of the Parties to the reasonable and beneficial use of Surface Water and  
2 Groundwater in the Management Area, and to impose a Physical Solution pursuant to law,  
3 including California Constitution, article X, section 2.

4  
5 **JUDGMENT**

6  
7 **IT IS ORDERED, ADJUDGED AND DECREED:**

8 **1. DEFINITIONS.**

9 **1.1 Adjusted Production Right** – the Base Production Right of each Public  
10 Agency, as adjusted pursuant to Sections 3.2 to 3.2.5.

11 **1.2 Administrative Assessment** – an acre-foot charge to be levied against  
12 each Public Agency for water pumped up to its Adjusted Production Right, including any unused  
13 amount of such Right that is pumped in a following year (Carry-Over Credit). Such assessments  
14 shall be used for Administrative Expenses, and for the purchase of Supplemental Water after  
15 Administrative Expenses have been paid. No Administrative Assessment shall be levied on a  
16 Party's pumping of its share of Imported, Supplemental, or Stored Water.

17 **1.3 Administrative Expenses** – Include, but are not limited to,  
18 Watermaster's expenses for office rental, personnel, supplies, office equipment, general  
19 overhead, preparing and collecting assessments, monitoring well pumping, measuring water  
20 levels, sampling and analyzing water quality, compiling and interpreting collected data,  
21 conducting special studies, litigation, and such other expenses as are reasonable and necessary  
22 for the Watermaster to carry out its duties under the Physical Solution and Water Management  
23 Plan.

24 **1.4 Advisor.** An independent engineering firm or qualified individual as  
25 provided in Section 9.6.3.

26 **1.5 Annual Basin Yield** – the quantity of Groundwater that Watermaster  
27 determines the Parties may Produce from the Management Area in a calendar year without a  
28 replenishment obligation under the Physical Solution.

1                   **1.6     Base Production Right** – a water right of a Public Agency or Class B  
2 Participant.

3                   **1.7     Carry-Over Credit** – a Public Agency’s or a Class B Participant’s credit  
4 against the Replenishment Assessment in a Fiscal Year, based on the Agency’s Adjusted or Base  
5 Production Right or share of Imported Water not produced in prior calendar years.

6                   **1.8     Class A Participant** – a Private Pumper who stipulates to this Judgment  
7 and participates in the Water Management Plan as defined in Sections 4.3 to 4.3.5.

8                   **1.9     Class B Participant** – a Private Pumper who stipulates to this Judgment  
9 and participates in the Water Management Plan as defined in Sections 4.4 to 4.4.6.

10                  **1.10    Fiscal Year** – the period from July 1 through June 30 of the following  
11 calendar year.

12                  **1.11    Fruitvale Documents** –

13                        **(a)     Fruitvale Judgment** – The Judgment and Decree entered in the  
14 Superior Court for the County of Riverside on June 4, 1954, in an action titled The City of San  
15 Jacinto, et al. v. Fruitvale Mutual Water Company, et al., Case No. 51-546;

16                        **(b)     Fruitvale Mutual Water Company Sale of Assets to Eastern** –  
17 That certain “Agreement for the Sale of Assets of the Fruitvale Mutual Water Company to  
18 Eastern Municipal Water District” dated September 10, 1971 (“Purchase Agreement”);

19                        **(c)     Fruitvale Mutual Water Company Agency Agreements** – The  
20 Agreement Between the City of San Jacinto and Eastern Municipal Water District dated  
21 November 2, 1971, the Agreement Between Lake Hemet Municipal Water District and Eastern  
22 Municipal Water District dated June 9, 1972, and the Agreement Between the City of Hemet and  
23 Eastern Municipal Water District dated June 13, 1972, all providing for recognition of ownership  
24 of stock in Fruitvale Mutual Water Company by the Cities and by Lake Hemet, and making  
25 provision for the continued sale of water produced through the Fruitvale facilities by Eastern to  
26 the Cities and to Lake Hemet.

27                  **1.12    Groundwater** – all water within and beneath the ground surface of the  
28 Management Area.



1                   **1.13 Groundwater Degradation** (also “groundwater quality degradation” and  
2 “water quality degradation,” “Degradation” and “Degraded Groundwater”) – Water  
3 contamination as defined in state and/or federal law, and other conditions of reduced water  
4 quality as determined by the Watermaster to be harmful or undesirable for the operation of the  
5 Management Area.

6                   **1.14 Imported Water** – An average of 7,500 acre feet annually of water sold  
7 by The Metropolitan Water District of Southern California to Eastern pursuant to Section 4.4 of  
8 the Soboba Band of Luiseño Indians “Settlement Agreement.”

9                   **1.15 In-Lieu Water** – Groundwater that is not pumped, but which would have  
10 otherwise been pumped by the holder of an Overlying or Appropriative Right within the  
11 Management Area, by virtue of the pumper’s agreement with an Agency or the Watermaster to  
12 receive and use Recycled Water or other nonpotable water in lieu of Groundwater.

13                   **1.16 Management Area** –the Canyon, the San Jacinto Upper Pressure, and the  
14 Hemet North and Hemet South Basins, as delineated on the map attached as Exhibit “A.”

15                   **1.17 Metropolitan** – The Metropolitan Water District of Southern California.

16                   **1.18 Natural Recharge** – Groundwater replenishment within the Management  
17 Area occurring from precipitation on the surface, percolation from surface flows of the San  
18 Jacinto River and its tributaries, spreading or injection of such surface flows, return flows from  
19 irrigation, and subsurface inflows.

20                   **1.19 New Pumper** – a Private Pumper who pumps for the first time after entry  
21 of Judgment herein.

22                   **1.20 Non-Participant** – a Private Pumper who elects not to participate in the  
23 Management Plan, or to be a Party to this Judgment.

24                   **1.21 Overdraft** – a condition whereby pumping in the Management Area  
25 exceeds the Safe Yield thereof.

26                   **1.22 Overlying Right** – the appurtenant right of an owner of land overlying the  
27 Management Area to pump water from such land for beneficial use thereon.  
28



1                   **1.23 Party or Parties** – Eastern, Lake Hemet, Hemet, San Jacinto and the other  
2 Persons listed in the attached Exhibit “B.”

3                   **1.24 Person** – any individual, partnership, association, corporation, trust,  
4 government agency or other organization.

5                   **1.25 Physical Solution** – the Court decreed method of managing the water  
6 supply of the Management Area to maximize the reasonable and beneficial use of the waters  
7 thereof pursuant to the California Constitution, article X, section 2, to eliminate Overdraft  
8 pursuant to the provisions of this Judgment, to protect the prior rights of the Soboba Tribe, and to  
9 provide for the substantial enjoyment of all water rights recognizing their priorities.

10                   **1.26 Private Pumper** – a Person who owns land with an Overlying Right or  
11 other right in the Management Area and pumps more than 25 acre-feet per year. Private Pumper  
12 includes New Pumps.

13                   **1.27 Public Agency or Agencies** – Eastern, Lake Hemet, Hemet and San  
14 Jacinto.

15                   **1.28 Recharge or Replenish** – to sink, spread or inject water directly or  
16 indirectly underground in the Management Area.

17                   **1.29 Recharge Right** – the rights of Eastern and Lake Hemet to pump and use  
18 water previously replenished to the Management Area as provided in Section 6.7.4.

19                   **1.30 Recycled Water** – treated wastewater which is processed and suitable for  
20 controlled use in the Management Area, including Recharge.

21                   **1.31 Replenishment Assessment** – a charge to be levied against each Public  
22 Agency for each acre foot, or portion thereof, of Groundwater pumped in excess of the sum of its  
23 respective Adjusted Production Right, its share of Imported Water, Stored Water, Supplemental  
24 Water, and applicable Carry-Over Credits and Recharge Rights; and against each Class B  
25 Participant for pumping in excess of its 1995-99 average production, i.e., its Base Production  
26 Right. The rate of such assessments shall be determined by the Watermaster and shall be used  
27 for Replenishment Expenses.  
28

1                   **1.32    Replenishment Expenses** – Watermaster expenses, including, but not  
2 limited to, the acquisition of Supplemental Water supplies, development of In-Lieu Water  
3 projects, acquisition or improvement of land, and for the construction, maintenance and  
4 operation of facilities necessary to replenish Groundwater in the Management Area, or otherwise  
5 to provide water to Parties within the Management Area.

6                   **1.33    Safe Yield** – the long term, average quantity of water supply in the  
7 Management Area that can be pumped without causing undesirable results, including the gradual  
8 reduction of natural Groundwater in storage over long-term hydrologic cycles. The initial Safe  
9 Yield of the Management Area is estimated to be approximately 45,000 acre feet per year.

10                   **1.34    Settlement Agreement** – that Agreement titled “The Soboba Band of  
11 Luiseño Indians Settlement Agreement” among the Soboba Tribe, the United States, as Trustee  
12 for the Tribe, Eastern Municipal Water District, Lake Hemet Municipal Water District, and The  
13 Metropolitan Water District of Southern California.

14                   **1.35    Soboba Tribe (sometimes the “Tribe”)** – the Soboba Band of Luiseño  
15 Indians.

16                   **1.36    Soboba Action** – the lawsuit entitled Soboba Band of Mission Indians,  
17 etc., v. Metropolitan, etc., et al, U.S. District Court, Central District of California, Case No.  
18 00-84208 GAF (MANx).

19                   **1.37    Storage Agreement** – an agreement between Watermaster and a Party to  
20 store Supplemental Water (other than a Party’s share of Imported Water) by sinking, spreading,  
21 injecting or in-lieu procedures in the Management Area, and to establish a manner of accounting  
22 for the credit therefore and subsequently to recover such water, without payment of  
23 Administrative or Replenishment Assessments.

24                   **1.38    Storage Right** – a Party's right to store and pump Supplemental Water  
25 (not required for a Party’s share of Imported Water) pursuant to a Storage Agreement.

26                   **1.39    Stored Water** – Supplemental Water (other than a Party’s share of  
27 Imported Water) stored by a Party pursuant to a Storage Agreement.  
28

1                   **1.40 Supplemental Water** – nontributary water imported into the Management  
2 Area, including imported water (i.e., other than or in addition to Imported Water as defined in  
3 Section 1.14), Recycled Water, In-Lieu Water, and other nonpotable water.

4                   **1.41 Surface Water** – all water tributary to the Management Area and flowing  
5 above the ground surface.

6                   **1.42 Transfer** – a temporary or permanent authorized conveyance, assignment,  
7 sale, contract or lease of part or all of a Public Agency’s Carry-Over Credit, Storage Right or  
8 Recharge Right to any other Party, or a temporary assignment, contract, lease or sale of a Public  
9 Agency’s share of Imported Water.

10                   **1.43 Tribal Water Rights** – the Soboba Tribe’s rights to water set forth in  
11 Section 4.1 of the Settlement Agreement and Section 5 of this Stipulated Judgment.

12                   **1.44 Tunnel** – the San Jacinto Tunnel in Riverside County, California,  
13 constructed by Metropolitan in the 1930s.

14                   **1.45 Watermaster** – the Board with the powers and duties defined in Section  
15 9.

16                   **1.46 Water Management Plan** (sometimes the “Plan”) – the Plan adopted by  
17 the Watermaster, as it may be modified from time to time, to implement the Physical Solution, to  
18 ensure an adequate and reliable source of future water supply for the Management Area, and to  
19 protect the prior rights of the Soboba Tribe.

20                   **2. EXHIBITS.**

21                   The following exhibits are attached to this Judgment and incorporated in it:

22                   “A.” Map of the Management Area and the Management Area Watershed.

23                   “B.” List of Parties to this Judgment.

24                   “C.” Description of each Public Agency’s and Class A and Class B Participant’s  
25 Base Production Right.



1                   **3.     PUBLIC AGENCIES' WATER RIGHTS.**

2                   **3.1     Base Production Right.** The Public Agencies are owners of rights to  
3 pump Groundwater from the Management Area as set forth in Exhibit "C." These rights are for  
4 a calendar year and were calculated as follows:

5                   **3.1.1   Eastern.** The Base Production Right of Eastern is based upon its  
6 respective average pumping for calendar years 1995-1999, less an adjustment of 1800 acre-feet  
7 representing a portion of a credit which it receives from Metropolitan for seepage into  
8 Metropolitan's San Jacinto Tunnel, for Eastern's use of Fruitvale water elsewhere, and for use of  
9 Fruitvale water by Lake Hemet, San Jacinto, and Hemet. The 1995-1999 period was chosen to  
10 reflect recent production prior to the commencement of negotiations leading to this Stipulated  
11 Judgment.

12                   **3.1.2   Lake Hemet.** The Base Production Right of Lake Hemet is based  
13 on its average production for calendar years 1995-1999.

14                   **3.1.3   Hemet.** The Base Production Right of Hemet is based on its  
15 average production for calendar years 1995-99, plus an adjustment of 900 acre feet per year  
16 representing a portion of the seepage credit referenced in Section 3.1.1.

17                   **3.1.4   San Jacinto.** The Base Production Right of San Jacinto is based  
18 upon its average Production for calendar years 1995-1999, plus 500 acre-feet per year, and plus  
19 an adjustment of 900 acre feet per year representing a portion of the seepage credit referenced in  
20 Section 3.1.1. The 500 acre-feet per year has been added because San Jacinto's recent pumping  
21 does not reflect its historic production, due to water purchases and other factors.

22                   **3.1.5   Adjustments.** The Base Production Rights of Hemet and San  
23 Jacinto each include 900 acre-feet per year that have been added to their respective amounts of  
24 pumping for calendar years 1995-1999. These amounts have been added to provide Hemet and  
25 San Jacinto a fair share of water from, and to resolve disputes regarding, Eastern's use of tunnel  
26 seepage, Eastern's use of Fruitvale waters, and Lake Hemet's surface stream diversions. These  
27 additional amounts of 900 acre-feet per year shall be treated as the first amounts pumped by  
28 Hemet and San Jacinto, shall not be subject to reduction by the Watermaster as provided in

1 Sections 3.2 to 3.2.2, and shall not be subject to any Administrative or Replenishment  
2 Assessments as provided in Sections 3.4 to 3.4.2, or to any other fee or charge imposed under the  
3 Management Plan.

4 **3.2 Adjusted Production Rights.** It is the goal of the Physical Solution to  
5 adjust the Base Production Rights of the Public Agencies over time on a pro-rata basis to a level  
6 consistent with the Watermaster's determination of Safe Yield. The reduction will be based on  
7 periodic demand, hydrology, Recharge, and the community's ability to pay for Supplemental  
8 Water, and protection of the Tribal Water Rights. In order to implement this reduction in a  
9 phased manner, each Public Agency's Base Production Right shall be subject to adjustment as  
10 follows:

11 3.2.1 Subject to Section 3.1.5, a 10% reduction from each Base  
12 Production Right in the first full year after entry of this Judgment.

13 3.2.2 Until Adjusted Production Rights are consistent with the Public  
14 Agencies' share of Safe Yield, Watermaster shall determine the required reductions in Adjusted  
15 Production Rights in each subsequent year to achieve Safe Yield within a reasonable period of  
16 time as determined by the Watermaster, considering the extent of the Overdraft, the economic  
17 impact on the Parties bound by this Judgment, and other relevant factors. The goal is to achieve  
18 Safe Yield over a six (6) year period assuming an annual Overdraft of 10,000 acre feet. In the  
19 event the extent of the Overdraft is greater or lesser than assumed, then the period of time  
20 reasonably required to reach Safe Yield may be extended or reduced accordingly. However, in  
21 no event shall any reduction be more than 10% of the Adjusted Production Rights of the prior  
22 year.

23 3.2.3 A Public Agency Party may pump in excess of its Adjusted  
24 Production Right, without any additional Administrative or Replenishment Assessment, by an  
25 amount equal to its share of the 7,500 acre feet per year of Imported Water that is not used by the  
26 Tribe provided such water has been previously delivered and is stored or will be delivered during  
27 the current water year. The amount of the Tribe's unused portion of the 7,500 acre feet shall be  
28 determined annually by the Watermaster. Shares of unused Imported Water shall be allotted to

1 the Public Agency Parties in proportion to Base Production Rights, and shall be acquired and  
2 paid for pursuant to contract with Eastern.

3 3.2.4 A Base Production Right of a Public Agency serving the land of a  
4 Class B Participant shall be increased in an amount equal to such Participant's Base Production  
5 Right, adjusted and reduced pursuant to Sections 3.2.1 and 3.2.2, when the Participant's land is  
6 converted from agricultural use to water service from the Public Agency, pursuant to Section  
7 4.4.3.

8 3.2.5 The Adjusted Production Rights of the Public Agencies may be  
9 increased by the Watermaster on a prorata basis to the extent that pumping by Class A  
10 participants, or pumping by Persons not Parties to this Judgment, may decrease, and the  
11 Watermaster finds that achieving the goal of maintaining the Management Area in a Safe Yield  
12 condition can still be met.

13 **3.3 Allocation of Unused Imported Water.** A Public Agency's share of  
14 Imported Water that is not used by the Soboba Tribe, as described in Section 3.2.3 shall be  
15 subject to the following additional rules:

16 3.3.1 To the extent that a Public Agency does not use all of its share of  
17 the Imported Water, the unused portion may be stored for its account for future use or transfer by  
18 the Public Agency.

19 3.3.2 A Public Agency may lease, sell or otherwise transfer any portion  
20 of the Public Agency's stored Imported Water or of the then current year's share of the Imported  
21 Water to another Public Agency or to the Watermaster.

22 **3.4 Public Agency Production Assessments.** Public Agency pumping shall  
23 be subject to the following assessments:

24 3.4.1 An Administrative Assessment as provided in Section 1.2. The  
25 Administrative Assessment will be \$50.00 per acre-foot of a Party's Adjusted Production Right  
26 pumped after entry of this Judgment. The Watermaster shall set the Administrative Assessment  
27 rate annually thereafter. The first 900 acre feet per year of Adjusted Production Right pumped  
28

1 by Hemet and San Jacinto and water pumped by a Public Agency pursuant to Section 3.4 above  
2 shall not be subject to such assessment.

3 3.4.2 A Replenishment Assessment will be levied on each Public  
4 Agency as provided in Section 1.31. However, a Public Agency may pump Groundwater in  
5 excess of the sum of its Adjusted Production Right, its share of Imported Water, Supplemental  
6 Water applicable Carry-Over Credits per Section 6.9.2, Recharge Rights, and production of  
7 Stored Water, in order to meet increasing demands, provided that such excess extractions shall  
8 be subject to Replenishment Assessments.

9 3.5 **Surface Rights.** Eastern holds License Number 016667 from the State  
10 Water Resources Control Board to divert, spread and recover surface flows of the San Jacinto  
11 River within the Management Area. Lake Hemet holds pre-1914 appropriative rights to divert  
12 and store surface flows in Lake Hemet, and to divert surface flows tributary to but outside of the  
13 Management Area from Strawberry Creek and from the North and South Forks of the San  
14 Jacinto River. All Parties acknowledge such Eastern and Lake Hemet rights, and the fact that  
15 they are not subject to any assessments under this Judgment; provided that any water pumped by  
16 Eastern under its License shall be included in its Adjusted Production Right.

17 3.6 **Fruitvale Judgment, Sale of Assets, and Agreements.** The Court  
18 hereby finds that Eastern purchased all of the water rights and assets of the Fruitvale Mutual  
19 Water Company (“Fruitvale”) pursuant to the Agreement described in Section 1.11(b) hereof,  
20 and is now the owner thereof. Eastern, as the successor in interest to Fruitvale, is also a  
21 defendant in the action described in Section 1.11(a) hereof. The Court finds that the only other  
22 remaining Party in such action is the plaintiff City of San Jacinto. The Court retained continuing  
23 jurisdiction in such action, and Eastern has made annual reports pursuant to the Fruitvale  
24 Judgment. Pursuant to stipulation between Eastern and San Jacinto, and in accord with the  
25 Physical Solution and terms of this Judgment, the Court hereby finds that the rights and  
26 obligations of the Fruitvale Judgment have been subsumed in, and superseded by, this Judgment  
27 and are no longer enforceable; that the limitations upon the place and amounts of water use in the  
28 Fruitvale Judgment, the Purchase Agreement (including the provisions regarding domestic water



1 rates within the Fruitvale Improvement District) and the Agency Agreements, all described in  
2 Sections 1.11(a), (b) and (c) are no longer applicable or enforceable; and that the continuing  
3 jurisdiction of the Court under the Fruitvale Judgment and the obligations of Eastern to report  
4 thereunder, are hereby terminated; provided, however, that any service area agreements or  
5 agreements related to mutual aid or system interties between any of the Public Agency Parties  
6 are not affected by this Judgment.

7 **3.7 Fruitvale Agency Rights.** The water rights of Hemet, San Jacinto and  
8 Lake Hemet under the several agreements with Eastern described in Section 1.11(c) hereof have  
9 been incorporated in their respective Base Production Rights under this Judgment.

10 **4. PRIVATE PUMPERS' WATER RIGHTS**

11 **4.1 Recognition of Rights.** The Private Pumpers are owners of Overlying or  
12 other water rights to pump from the Management Area. The Public Agencies recognize these  
13 rights, and do not intend to take or adversely impact these rights without an agreement with the  
14 owner of such rights. There is no intent to affect water use that is consistent with the historical  
15 use of the Private Pumpers.

16 **4.2 Non-Participation.** A Private Pumper can elect not to participate in the  
17 Water Management Plan and not to formally acknowledge its existence. Such Pumpers are  
18 referred to as Non-Participants. Non-Participants shall continue to exercise whatever water  
19 rights they may hold under California law unaffected by the Plan. However, the Parties do not  
20 waive their rights to challenge any new or expanded use of water or water rights. Non-  
21 Participants will not have the option of intervening as a Party under the Judgment at a later date.

22 **4.3 Class A Participation.** A Private Pumper can become a Party to the  
23 Judgment as a Class A Participant under the following terms:

24 4.3.1 A Class A Participant who or which approves this Physical  
25 Solution may vote for and/or be elected to serve as the Private Pumper representative on the  
26 Watermaster, but other than as set forth in Sections 4.3.4 and 4.3.5, shall not otherwise have any  
27 obligation for the implementation of the Physical Solution or the Water Management Plan.  
28



1                                   4.3.2 A Class A Participant may, without any assessment by the  
2 Watermaster, pump from the Participant's property within the Management Area the amount of  
3 water that can be put to reasonable and beneficial use in the Participant's historic place of use or  
4 as authorized under California law.

5                                   4.3.3 Unless the Watermaster determines otherwise, a Class A  
6 Participant shall have the right to convert to Class B Participation during a grace period that shall  
7 end 3 years after the entry of this Judgment and upon payment of the total assessments, without  
8 interest, that the Class A Participant would have paid had the Class A Participant elected to be a  
9 Class B Participant from the later of the initial production of Groundwater or the entry of the  
10 Judgment herein. Conversely, the converting Participant will be given Carry-Over Credits to  
11 which the Participant would have been entitled as a Class B Participant during said period  
12 pursuant to Section 6.9.2 below; said Carry-Over Credits may be used to offset any  
13 replenishment assessments, including any that would become due following the conversion.

14                                   4.3.4 A Class A Participant hereby authorizes the installation of water  
15 meters, and the collection and reading of Groundwater production, level and water quality data  
16 from the Class A Participant's well(s) by personnel authorized by the Watermaster. The  
17 metering, meter reading, and other related monitoring efforts shall be at no cost to the Class A  
18 Participant, and the Class A Participant shall receive copies of the reports and information  
19 obtained upon request.

20                                   4.3.5 A Class A Participant shall describe or otherwise identify the  
21 Participant's land and wells within the Management Area. The heirs, successors and assigns of  
22 such land and wells shall succeed to the benefits of the Participant's rights under the Judgment,  
23 and be bound by the obligations thereof, provided that such successor intervenes as a Party under  
24 the Judgment. Absent such intervention, the successor will be treated as a Non-Participant.

25                                   **4.4 Class B Participation.** A Private Pumper can become a Class B  
26 Participant on the following terms:

27                                   4.4.1 A Class B Participant's Base Production Right shall be equal to the  
28 Participant's average annual production during the calendar years 1995 through 1999, less any

1 amount of water that had been used on land that was developed for non-agricultural purposes  
2 after 1999, subject to adjustments by the Watermaster pursuant to Section 4.4.1.1. Any In-Lieu  
3 Water used during said period in place of Groundwater production shall be treated as part of the  
4 Groundwater production for calculating Base Production Rights. The Class B Participant shall  
5 pay Replenishment Assessments on amounts in excess of its Base Production Right, subject to  
6 any Carry-Over Credit adjustments pursuant to Section 6.9.2, but shall not be subject to  
7 Administrative Assessments, and until transfer to a Public Agency, such Base Production Right  
8 shall not be subject to reduction to Safe Yield. In the absence of production history for the entire  
9 period (1995-99), the Watermaster, using all available information including power consumption  
10 records and records of water use by similar farming operations in the area, will estimate the  
11 average annual production for the Participant.

12 4.4.1.1 In the event that the land of a Class B Participant or of a  
13 Class A Participant that requests conversion to Class B Participation did not go into full  
14 production during the period 1995-1999, or in the absence of a sufficient production history or  
15 record, the Watermaster will determine the Base Production Rights to be assigned to such  
16 Participant, using all information available to it.

17 4.4.1.2 Upon written request by a Class B Participant, the  
18 Watermaster shall have the authority to adjust the Class B Participant's Base Production Rights  
19 for such period, and on such terms and conditions, as the Watermaster deems appropriate under  
20 the circumstances. For example, but not by way of limitation, the Watermaster could increase  
21 the Participant's Base Production Rights on a temporary basis to permit increased Groundwater  
22 production during dry periods, or for frost protection, with or without a requirement that such  
23 increased production be offset or "repaid" by a decrease in Groundwater production during  
24 subsequent wet periods, or to account for added acreage or for a change in crops or use of the  
25 land or for a change in ownership. Where new trees were planted during the period 1995-1999,  
26 the Watermaster may calculate the Base Production Rights based on known or estimated water  
27 use at maturity of such trees.  
28

1                   4.4.2 The Class B Participant approves this Physical Solution and may  
2 vote for and/or be elected to serve as the Private Pumper's representative on the Watermaster.

3                   4.4.3 Upon conversion of a Class B Participant's land from agricultural  
4 to a use that requires water service from a Public Agency, the Public Agency shall credit, to the  
5 extent legally permissible, the Class B Participant's Base Production Right, adjusted pursuant to  
6 the percentage reductions in Sections 3.2.1 and 3.2.2, against any requirement then in effect for  
7 any water supply assessment requirements, against any fees associated with water supply that the  
8 Public Agency may then have in effect. The Public Agency serving the converted land shall  
9 receive a credit added to its Base Production Right as set forth in Section 3.2.4.

10                  4.4.4 Upon the sale of property to which or for which Base Production  
11 Rights have been assigned by reason of the judgment herein, the Class B Participant may transfer  
12 said rights to the purchaser on condition that the purchaser agrees in writing to be bound by the  
13 terms of the judgment as a Class B Participant.

14                  4.4.5 The Class B Participant hereby authorizes the installation of meters  
15 and the collection and reading of Groundwater production, water level and water quality data  
16 from the Class B Participant's well(s) by personnel authorized by the Watermaster. The  
17 metering, meter reading and other related monitoring efforts shall be at no cost to the Class B  
18 Participant, and the Class B Participant shall receive copies of the reports and information  
19 obtained upon request.

20                  4.4.6 A Class B Participant shall describe or otherwise identify the  
21 Participant's land and wells within the Management Area. The heirs, successors and assigns of  
22 such land and wells shall succeed to the benefits of the Participant's rights under the Judgment,  
23 and be bound by the obligations thereof, provided that such successor intervenes as a Party under  
24 the Judgment. Absent such intervention, the successor will be treated as a Non-Participant. A  
25 Class B Participant may transfer Base Production Rights to new or replacement land on terms  
26 and conditions established by the Watermaster.

27                  **4.5 In-Lieu Water Use.** In the event any Private Pumper receives  
28 Supplemental Water from a Public Agency to serve an historic use in place of Groundwater, or

1 otherwise engages in an in-lieu program after entry of the Judgment herein, the Overlying Right  
2 of the Private Pumper shall not be diminished by the receipt and use of such Supplemental Water  
3 or by engaging in an in-lieu program. In the event a Class B Participant received In-Lieu Water  
4 for use in place of Groundwater during the period 1995-99, for purposes of determining Base  
5 Production Rights, said use shall be considered as Groundwater use.

6 **4.6 Future Production Participation.** Any New Pumper after the entry of  
7 this Judgment may intervene in this action and Judgment only as a Class A Participant and may  
8 not thereafter convert to Class B status.

9 **4.7 Replacement Wells.** Re-drilling of existing wells and the drilling of new  
10 wells to replace existing wells will not be considered new production as provided in Section 4.6.

## 11 **5. TRIBAL WATER RIGHTS**

12 The Tribal Water Rights have been determined as part of a settlement among the  
13 Soboba Tribe, the United States, Eastern, Lake Hemet and Metropolitan. The settlement is  
14 reflected in a Settlement Agreement, Congressional legislation and appropriation of funds, and a  
15 Judgment in the Soboba Action. Such settlement includes the following provisions, which shall  
16 be effective only upon fulfillment of all of the conditions precedent set forth in Article 3 of the  
17 Settlement Agreement, a copy of which is attached hereto.

18 **5.1 Senior Right.** The Soboba Tribe shall have a prior and paramount right,  
19 superior to all others, to pump 9000 acre-feet per year (3000 acre feet from the Canyon Subbasin  
20 and the remainder from a portion of the San Jacinto Upper Pressure Subbasin referred to as the  
21 Intake Subbasin), for use on the Reservation, as defined in Article 2.20 of the Settlement  
22 Agreement, and on lands now owned or hereafter acquired by the Soboba Tribe contiguous to the  
23 Reservation or within the Canyon and Intake Subbasins; provided, however, that such use shall  
24 be limited to amounts set forth in a development schedule from 2,900 acre feet per year to 4,100  
25 acre-feet per year for the first 50 years after the Effective Date as set forth in Exhibit "I" to the  
26 Settlement Agreement. The Tribe's right to pump applies to all Groundwater, whether  
27 replenished by Natural Recharge or by Supplemental Water. In addition, the Tribe shall have the  
28 right to purchase additional water from the Watermaster during the fifty years that its use is



1 limited according to Exhibit "T" to the Settlement Agreement at the rate then being charged to the  
2 Public Agencies under the Water Management Plan. In the event the Soboba Tribe is unable,  
3 except for mechanical failure of its wells, pumps or water facilities, to produce from its existing  
4 wells or equivalent replacements up to 3,000 AFA production from the Canyon Subbasin and the  
5 remainder of its Tribal Water Rights from the Intake Subbasin, Eastern and Lake Hemet shall  
6 deliver any shortage to the Soboba Tribe as provided in Section 4.1C of the Settlement  
7 Agreement. Pumping for such purpose shall not be subject to Administrative or Replenishment  
8 Assessments, and shall not be counted as part of Adjusted Production Rights.

9 **5.2 Metropolitan Water.** The Soboba settlement provides, among other  
10 matters, that Metropolitan will use its best efforts to deliver sufficient Imported Water to yield  
11 7,500 acre-feet per year, based upon 15 year averages, for Recharge in the Management Area at  
12 its untreated replenishment water rate, or any successor rate of equivalent price as provided in  
13 Section 4.4A of the Settlement Agreement.

14 **5.3 Settlement Payment.** Subject to the Effective Date of the Settlement  
15 Agreement and funding by the United States, Eastern pursuant to the terms set forth in the Water  
16 Management Plan, will pay the Soboba Tribe \$17 million dollars pursuant to Article 4.7A of the  
17 Settlement Agreement in consideration, in part, of the Tribe's agreement to limit its water use  
18 according to Exhibit "T" to the Settlement Agreement for the first 50 years after the Effective  
19 Date. Subject to contracts with Eastern, the Public Agencies shall have the right to pump and  
20 use all Imported Water not used by the Tribe, and the unused portion of the Tribal Water Rights  
21 shall be available for use by the Parties, pursuant to their rights herein.

22 **5.4 Capital Facilities.** Eastern on behalf of the Water Management Plan  
23 participants will receive \$10 million from the United States, to be applied to the costs of  
24 constructing and operating the Phase I capital facilities necessary to import and Recharge  
25 Supplemental Water as described in the Plan.

26 **5.5 Public Agencies' Use of Facilities.** Additional grant funds from the State  
27 of California or the United States may also be available for such capital facilities. The rights of  
28

1 the Public Agencies to the use of such facilities will be affirmed by contract as set forth in  
2 Sections 9.6.4(1) and 9.6.4(3).

3           **5.6    Acknowledgement of Soboba Tribe Settlement.** The Parties to this  
4 Judgment hereby recognize the Tribal Water Rights, as set forth above, and the applicable  
5 provisions of the Soboba Tribe Settlement Agreement, and acknowledge that protection of Tribal  
6 Water Rights is one of the goals of the Water Management Plan.

7           **6.       PHYSICAL SOLUTION.**

8           **6.1    Purpose and Objective.** Pursuant to California water law and the  
9 California Constitution, article X, section 2, the Court adopts this Physical Solution to maximize  
10 reasonable beneficial use of Surface Water, Groundwater and Supplemental Water for water  
11 users in or dependent upon the Management Area, to eliminate Overdraft, to protect the prior  
12 rights of the Soboba Tribe, and to provide the Parties with the substantial enjoyment of their  
13 respective rights, including, the priorities thereof.

14           **6.2    Need for Flexibility.** In order to adapt to potential changes in hydrology,  
15 land use, and social and economic conditions, the Physical Solution must provide some degree of  
16 flexibility and adaptability. Accordingly, the Court retains broad jurisdiction to supplement the  
17 discretion granted to the Watermaster herein.

18           **6.3    Rights to Groundwater.** Groundwater in the Management Area may  
19 occur from: Natural Recharge; spreading operations of natural flows; Recharge with  
20 Supplemental Water acquired with assessment funds; return flows, fallowing or in-lieu recharge  
21 programs financed with assessment funds. All such Groundwater shall be available to support  
22 the pumping of the Parties as allowed herein, and shall not be the property of any individual  
23 Party. Subject to the provisions of Section 6.7.2, this Section does not preclude any Party,  
24 pursuant to a Storage Agreement, from storing Supplemental Water at its own cost, retaining  
25 title thereto, and pumping such water without assessment.

26           **6.4    Resolution of Priorities.** By reason of the long and continuous Overdraft  
27 of the Management Area, the contribution of all Parties to the Overdraft, the economies that have  
28 developed on the basis of the Overdraft, the severe economic disruption that could occur under

1 strict priorities and the doctrines of prescription and laches, the complexity of determining  
2 appropriative priorities, and the need to make the maximum beneficial use of the water resources  
3 of the State, the Parties are estopped and barred from asserting specific priorities or preferences  
4 to the pumping of Groundwater in the Management Area, except as provided in this Judgment,  
5 and the Court finds that the provisions of this Judgment provide for the substantial enjoyment of  
6 the respective rights of the Parties.

7           **6.5     Water Management Plan.** The Watermaster will approve and implement  
8 a Water Management Plan to enforce and implement the Physical Solution, and may modify  
9 such Plan as conditions require, subject to the provisions of the Settlement Agreement. The Plan  
10 will also facilitate and accommodate the settlement of the water rights of the Soboba Tribe, and  
11 shall be subject to the approval of the Soboba Tribe and the United States as trustee for the Tribe.  
12 The Parties agree that the Plan shall incorporate and serve to implement the following goals:

13                   6.5.1 Groundwater levels within the Management Area have generally  
14 been declining for a number of years, and the Management Area is presently in a condition of  
15 Overdraft. The Watermaster shall calculate the Safe Yield of the Management Area on an  
16 annual basis, at least until the Overdraft is substantially eliminated. The Plan will, within a  
17 reasonable period, eliminate Groundwater Overdraft and provide for excess production by  
18 implementing a combination of available water resources management elements. These  
19 elements include: reduction in natural Groundwater production; enhanced Recharge with native  
20 and/or Supplemental Water; increased use of Recycled Water; in-lieu replenishment; acquisition  
21 and development of Supplemental Water; and water conservation programs.

22                   6.5.2 The Management Area is expected to experience residential,  
23 commercial, and industrial growth and development over the next decade. The estimated  
24 amount of Supplemental Water that will be necessary to provide for and adequately serve this  
25 new growth and development is 15,000 acre feet per year. The Water Management Plan shall  
26 accommodate the orderly expansion of existing water production and service systems, and  
27 provide a clear planning process for meeting these projected growth trends.





1 Area water resources, and to compile and analyze data on Groundwater production, water levels,  
2 water quality and Groundwater in storage.

3                   **6.6    Replenishment Program.** The Groundwater replenishment program shall  
4 be administered by the Watermaster. The program shall include: the acquisition of Supplemental  
5 Water; the collection and expenditure of Replenishment Assessments; the Recharge of the  
6 Management Area; and the construction and operation of all necessary facilities, including but  
7 not limited to, development of surface and subsurface percolation and injection facilities. In  
8 addition, a source of Recharge Water for agencies contributing to the Settlement Payment  
9 described in Section 5.3 will be Imported Water provided by Metropolitan under the Settlement  
10 Agreement, and not used by the Soboba Tribe.

11                   6.6.1 Priority for replenishment will be based on an equitable  
12 apportionment of available replenishment water among the subbasins after full consideration of:

13                               6.6.1.1 The Public Agency's participation in the payment in the  
14 Settlement Payment described in Section 5.3.

15                               6.6.1.2 Hydrologic conditions in the Management Area.

16                               6.6.1.3 The Management Area's Water demands.

17                               6.6.1.4 The availability of storage capacity to accommodate the  
18 Natural Recharge of surface flows.

19                               6.6.1.5 The availability of appropriate conveyance facilities.

20                               6.6.1.6 The availability of Supplemental Water,

21                               6.6.1.7 Protection of Tribal Water Rights.

22                   6.6.2 The Watermaster is encouraged to take advantage of surplus  
23 Imported Water from Metropolitan that occasionally may be available at low cost, and to use  
24 available assessment funds to bank such Recharge Water against future production in excess of  
25 Adjusted Production Rights.

26                   6.6.3 The Public Agencies shall independently or jointly operate their  
27 present facilities to maximize the existing spreading and Recharge operations of natural flow in  
28

1 the Management Area. Such Recharge Water shall be available to support the pumping of all  
2 users, and shall not be the property of the spreading Public Agency.

3 6.6.4 All water used to replenish any subbasin in the Management Area  
4 shall meet the Regional Water Quality Control Board, Santa Ana Region requirements, and the  
5 provisions of Article 4.2 of the Settlement Agreement, and may be used in any subbasin where  
6 such requirements are met.

7 **6.7 Storage Rights.** Unused storage capacity may exist in the Management  
8 Area, and this capacity will be managed by the Watermaster conjunctively with natural and  
9 available Supplemental Water supplies.

10 6.7.1 Subject to availability of assessment funds and unused storage  
11 capacity as determined by Watermaster, the Management Area may be Recharged when water is  
12 available, to be drawn upon by the Public Agencies in later years when such Supplemental Water  
13 may not be available.

14 6.7.2 Unused storage capacity, as determined by Watermaster, and  
15 pursuant to a Storage Agreement, may be used for “put and take” operations with Supplemental  
16 Water that is paid for by any Public Agency provided that:

17 6.7.2.1 Such operations do not interfere with the rights of any  
18 other pumper, or with the use of the storage capacity for Recharge and storage under the Water  
19 Management Plan.

20 6.7.2.2 The Watermaster shall have the first right to purchase any  
21 water available for Recharge for use under the Plan.

22 6.7.2.3 Later recovery of Stored Water shall exclude losses, and shall not be subject to  
23 either Administrative or Replenishment Assessments.

24 6.7.2.4 Such recovered water may be used anywhere within the  
25 service area of the Party.

26 6.7.2.5 Such Stored Water may be transferred while still in  
27 storage.  
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1                                   6.7.3 Any conjunctive use programs within the Management Area for  
2 the benefit of territory outside of the Management Area shall be subject to the Watermaster's  
3 approval and the governance provisions herein. Any storage, conjunctive use programs by third  
4 Parties, or in-lieu recharge programs financed with assessment funds, shall be subject to the  
5 Watermaster's approval and the governance provisions herein; provided that Metropolitan has  
6 the right under the Soboba Settlement Agreement to use up to 40,000 acre-feet of storage  
7 capacity in the San Jacinto Upper Pressure Subbasin for the pre-delivery of water required under  
8 Section 5.2.

9                                   6.7.4 Eastern and Lake Hemet have previously provided water for  
10 replenishment of the Management Area. As of May 1, 2005 these amounts, less losses, were  
11 12,694 acre-feet for Eastern and 950 acre-feet for Lake Hemet. Such Parties shall have Recharge  
12 Rights to recover these amounts, less any future losses, without either Administrative or  
13 Replenishment Assessments, and may use such Rights to offset excess pumping in lieu of  
14 Replenishment Assessments. The water available under such Recharge Rights shall be pumped  
15 within 15 years of the entry of this Judgment, but not more than 2000 acre-feet in a single year.  
16 The Public Agencies shall notify the Watermaster when such Recharged Water is being pumped,  
17 and in what amounts, and the Watermaster shall keep an accounting of the amounts remaining.  
18 The use of such credits shall be interpreted and administered so as not to increase the  
19 replenishment obligations or assessments of those Parties without such past credits, or after such  
20 credits have been fully used.

21                                   6.7.5 The accounting for recovery of Stored Water or Recharge Water  
22 from the Management Area shall not include any water that escapes therefrom and migrates  
23 downstream beyond the Management Area. Losses will be calculated based upon best  
24 engineering principles.

25                                   **6.8 Recycled Water.** The use of Recycled Water produced by Eastern can be  
26 of substantial benefit in providing additional water in the Management Area. The Watermaster  
27 shall have a right of first refusal to purchase all Recycled Water produced from treatment  
28

1 facilities serving the Management Area that is not subject to then existing contracts. Such  
2 Recycled Water may be used for Recharge or direct use within the Management Area.

3 6.8.1 Each Public Agency may implement its own Recycled Water  
4 program, for direct use, subject to the availability of Recycled Water. The Public Agency shall  
5 be responsible for financing, operating and maintaining the facilities necessary for that program.  
6 The Watermaster will support loan or grant applications, and the Public Agencies will work to  
7 integrate Recycled Water into the Water Management Plan, to the extent economically feasible  
8 while meeting regulatory standards.

9 6.8.2 Currently only Eastern has Recycled Water available for Recharge.  
10 To the extent such Recycled Water is not acquired by the Watermaster for use under the Plan,  
11 any such water recharged in the Management Area shall remain the property of Eastern and may  
12 be pumped (less losses) without Replenishment Assessments.

13 **6.9 Assessment Program.** The Assessment Program contemplated by the  
14 Water Management Plan and consisting of Administrative Assessments and Replenishment  
15 Assessments as described in Sections 1.2, 1.30, and 3.4, respectively, shall be administered by  
16 Eastern pursuant to a contract with the Watermaster pursuant to the provisions of Section  
17 9.6.4(5).

18 6.9.1 All Assessments shall be used for Replenishment Expenses and  
19 Administrative Expenses.

20 6.9.2 Subject to the limitations in this Judgment, each Public Agency  
21 that produces less than its Adjusted Production Right and share of Imported Water, and any  
22 Class B Participant producing less than its Base Production Right, shall have the following  
23 Carry-Over Credit:

24 6.9.2.1 Carry-Over Credit shall be the difference in acre-feet  
25 between a Public Agency's Adjusted Production Right and share of Imported Water and  
26 Supplemental Water, and the Public Agency's actual production in a calendar year, or the Class  
27 B Participant's Base Production Right and the Class B Participant's actual production in a  
28 calendar year.



1 6.9.2.2 The Carry-Over Credit may be applied to reduce the  
2 amount of acre feet upon which a Public Agency or Class B Participant must pay a  
3 Replenishment Assessment either for the previous year or in any subsequent year. Carry-Over  
4 Credits are transferable by a Public Agency to the Watermaster or, subject to a right of first  
5 refusal by the Watermaster, to another Public Agency. Carry-Over Credits may be retained for  
6 more than one calendar year. The Public Agencies shall notify the Watermaster if a Carry-Over  
7 Credit is being retained. The Public Agencies shall notify the Watermaster if a Carry-Over  
8 Credit is being transferred and shall provide information requested by the Watermaster regarding  
9 the transfer.

10 6.9.2.3 The Watermaster shall keep an accounting of all  
11 Carry-Over Credits.

12 6.9.3 All Watermaster assessment invoices shall be payable to  
13 Watermaster within 60 days of notice. Any delinquent assessments shall bear interest at a rate to  
14 be set by the Watermaster. Watermaster is entitled to recover its reasonable expenses in  
15 collecting any assessment, including attorney's fees and costs.

16 6.9.4 The Watermaster is authorized to adjust assessments, where  
17 deemed appropriate, to provide incentives for production of Degraded Groundwater as described  
18 in Section 6.5.3.

19 **6.10 Export.** The Public Agencies may export water outside the Management  
20 Area, on a temporary basis, upon approval by the Watermaster. However, any water exported  
21 shall be replenished with an appropriate amount of similar or better quality water as determined  
22 by Watermaster. Water exports by the Public Agencies shall not interfere with the Water  
23 Management Plan or any other Public Agency's operations. The Water Management Plan will  
24 set forth the specific criteria for the export of water, including, but not limited to, conjunctive use  
25 programs.

26 **6.11 Capital Facilities.** Each Public Agency shall continue to own its existing  
27 capital facilities for water supply and management, subject to the provisions of Section 9.6.6.  
28 However, the Phase I capital facilities necessary to implement the Water Management Plan shall

1 be owned and operated by Eastern, pursuant to the Plan and in a fiduciary capacity for the benefit  
2 of all Parties under this Judgment, pursuant to Sections 5.4; 9.6.4(1); 9.6.4(3).

3 6.11.1 Financing of Water Management Plan facilities may be funded by  
4 assessments, regional capital fees, loans and grants, contributions for Storage Rights by  
5 Metropolitan or other third-parties, and municipal bonds. Responsibility for the costs of future  
6 capital facilities necessary to implement the Plan, beyond the Phase I facilities, shall be  
7 determined by the Watermaster and apportioned based on relative benefit to be derived by each  
8 Public Agency.

9 6.11.2 Any of the participating Public Agencies may propose projects to  
10 be included in the Water Management Plan to increase the Management Area water supply.  
11 Such proposals, after evaluation by the Watermaster, shall be included or rejected. If the  
12 Watermaster chooses to reject the proposal, the proposing Public Agency may implement the  
13 rejected project at its own cost so long as it does not significantly impact the implementation of  
14 the Management Plan and/or interfere with the ongoing production by the Public Agencies.

15 **7. INJUNCTION.**

16 Each Party and his, her or its officers, agents, employees, successors and assigns,  
17 is enjoined and restrained from:

18 7.1 Producing water from the Management Area without payment of required  
19 Administrative Assessments.

20 7.2 Producing water from the Management Area in excess of the Party's  
21 Adjusted Production Right and share of Imported Water, or the Base Production Right in the  
22 case of a Class B Participant, without payment of required Replenishment Assessments.

23 7.3 Transferring Production Rights except as authorized in this Judgment.

24 7.4 Recharging water in the Management Area except as authorized in this  
25 Judgment.

26 7.5 Storing or exporting water except as authorized in this Judgment.  
27  
28

1           **8.       CONTINUING JURISDICTION.**

2           **8.1       Full Jurisdiction.** Full jurisdiction, power and authority is reserved to the  
3 Court as to all matters contained in this Judgment, including expedited intervention by  
4 successors in interest to Private Pumpers, except:

5                       8.1.1 To redetermine Base Production Rights of the Public Agencies or  
6 Class B Participants.

7                       8.1.2 As otherwise limited by law.

8           **8.2       Motion to Interpret.** By motion to the Court, upon 30 days written  
9 notice and after hearing, any Party or Watermaster may request the Court to make such further or  
10 supplemental orders to interpret, enforce, carry-out or amend this Judgment. Any such motion  
11 shall be reviewed de novo by the Court. Any such motion shall be served on all Parties and  
12 Watermaster at the addresses on the Watermaster's notice list.

13           **9.       WATERMASTER.**

14           **9.1       Composition.** The Watermaster shall consist of a board composed of one  
15 elected official and one alternate selected by each of the Public Agencies and one Private  
16 Pumper representative and one alternate selected by the Class A and Class B Private Pumpers.

17           **9.2       Terms.** Each member of the Watermaster shall serve until replaced by the  
18 Public Agency or Private Pumpers that made the original appointment, provided, however, that  
19 the election or removal of a Private Pumper representative shall be decided by a majority vote of  
20 the Class A and Class B Participants attending a meeting called for that purpose by written notice  
21 sent to each Class A and Class B Participant or their successors, by U. S. mail or electronic mail  
22 at least ten (10) days before such meeting. Said notice shall include the date, time and location  
23 of the meeting.

24           **9.3       Removal and Replacement.** Any Watermaster member may be removed  
25 and replaced by the same procedure used in his or her appointment.

26           **9.4       Voting.** Each member of the Watermaster shall have one vote. Four  
27 affirmative votes shall be required in order to constitute Watermaster action on each of the  
28 following matters. (1) any change sought in the form of governance; (2) any change in voting

1 requirements; (3) retaining the services of legal counsel and Advisor; (4) establishing, levying,  
2 increasing or decreasing all assessment amounts; (5) adopting or amending an annual budget; (6)  
3 determining the extent of Overdraft and quantifying Safe Yield; (7) determining Adjusted  
4 Production Rights; (8) decisions regarding the financing of Supplemental Water or facilities,  
5 other than any financing provisions included in this Stipulated Judgment as provided in Sections  
6 5.3, 5.4, 5.5 hereof; (9) decisions regarding ownership of facilities, other than ownership of the  
7 Phase I facilities described in the Water Management Plan, which shall be owned by Eastern  
8 Municipal Water District, subject to a right of use by those Parties participating in the financing  
9 thereof; (10) policies for the management of the Management Area; (11) and any decision that  
10 involves a substantial commitment by the Watermaster, including any contracts for conserved  
11 water. All other actions by the Watermaster shall require three affirmative votes.

12           **9.5     Court Review.** Any action by the Watermaster, or any failure to act by  
13 virtue of insufficient votes, may be reviewed by the Court on motion by any Party, with notice to  
14 all other Parties. The Court's review shall be de novo, and the Court's decision shall constitute  
15 action by the Watermaster.

16           **9.6     Powers and Duties.** In order to implement the provisions of this  
17 Judgment, the Watermaster shall have the following duties and powers:

18           **9.6.1   Water Management Plan.** Watermaster shall develop and  
19 implement a Water Management Plan, with such additions and modifications as may from time  
20 to time be appropriate, and shall administer the provisions of this Judgment. The Water  
21 Management Plan shall be subject to approval by the Court, by the Soboba Tribe, and by the  
22 United States.

23           **9.6.2   Independent Counsel.** The Watermaster shall retain independent  
24 legal counsel to provide such legal services as the Watermaster may direct.

25           **9.6.3   Advisor.** The Watermaster shall retain either an independent  
26 engineering firm or qualified individual experienced in hydrology to evaluate and analyze the  
27 data collected by Eastern, and any conclusions based thereon, and to make recommendations to  
28 the Watermaster, referred to herein as "Advisor." The Advisor shall also provide general



1 coordination among Eastern, the Technical Advisory Committee and the Watermaster with  
2 respect to their respective functions, and perform such executive functions as the Watermaster  
3 may direct. The Watermaster reserves the right to refer any matter it may choose to any Person  
4 it may select for assistance in carrying out its duties under this Judgment.

5 **9.6.4 Operations and Other Functions.**

6 **9.6.4.1 Operations – Phase I Facilities.** The Phase I Facilities  
7 (including capital facilities and spreading basins, as more particularly defined in the Water  
8 Management Plan) are either existing facilities of Eastern that will be expanded or improved as  
9 part of the Water Management Plan, or are new facilities that will be integrated into Eastern’s  
10 existing facilities and will be owned by Eastern. Pursuant to the terms and conditions of  
11 contracts to be entered into between Eastern and the Watermaster, and Eastern and the other  
12 Public Agencies, Eastern shall construct, install, and operate the Phase I Facilities consistent with  
13 the Water Management Plan.

14 **9.6.4.2 Operations – Other Facilities.** The Water Management  
15 Plan anticipates the need for the construction and installation of other facilities in order to  
16 accomplish the goals of the Judgment. Such facilities may be constructed, installed and operated  
17 under contract with the Watermaster, by a member of the Watermaster or, in circumstances  
18 approved by the Watermaster, by other responsible entities.

19 **9.6.4.3 Purchase of Water for Groundwater Recharge.** The  
20 Soboba settlement requires Metropolitan to use its best efforts to deliver an average of 7500  
21 acre-feet per year of Imported Water for Recharge of the Management Area. This supply is  
22 dedicated first to satisfy the rights of the Soboba Tribe as provided in the Settlement Agreement.  
23 Such portion of the supply that is not used by the Soboba Tribe will be available to those Parties  
24 who have participated in the cost thereof. Subject to the approval of the Watermaster, Eastern  
25 shall enter into a contract with Metropolitan for the purchase and delivery of such Imported  
26 Water supply. Eastern shall also purchase as a member agency of Metropolitan, or otherwise  
27 acquire, such additional supplies of water as may be directed by the Watermaster to implement  
28 the Water Management Plan, subject to availability and transmission capacity. All such water

1 delivered by Metropolitan, or otherwise acquired by Eastern, and all Eastern facilities used to  
2 deliver, recharge and recapture such water, shall be subject to rights of use by the Parties entitled  
3 thereto. Such rights of use shall be confirmed in detail in written contracts with Eastern.

4 Recycled water is also available for direct and indirect Groundwater Recharge from Eastern's  
5 wastewater treatment facilities serving the Management Area. The Watermaster shall have a  
6 right of first refusal to purchase all Recycled Water produced from such plants that is not subject  
7 to then existing contracts. The Watermaster is authorized to use its funds, or funds provided by  
8 the Parties, to purchase Imported Water, Supplemental Water, or other water.

9 **9.6.4.4 Data Collection.** The Watermaster shall provide for the  
10 collection and maintenance of all production, water level, water quality, and other technical data  
11 necessary under or required by the Water Management Plan ("Data"). Pursuant to the terms and  
12 conditions of a contract to be entered into between Eastern and the Watermaster, Eastern shall  
13 collect and maintain all such Data and transmit such Data to the Watermaster, its Advisor, and  
14 the Technical Advisory Committee as directed by the Watermaster. The foregoing clause does  
15 not restrict the ability of the Watermaster to enter into other agreements with other members of  
16 the Watermaster and/or private firms and individuals for the collection of Data.

17 **9.6.4.5 Accounting.**

18 **9.6.4.5.1 Financial Accounting.** The Watermaster shall  
19 provide for the levy, billing, and collection of all assessments provided for under the Judgment,  
20 for the payment of costs and expenses of the Watermaster, and for the performance of such  
21 accounting and related functions as may be required in connection with those functions  
22 ("Accounting Functions"). All funds collected shall be held in a segregated account. All  
23 expenses and disbursements shall be separately accounted for. Pursuant to the terms and  
24 conditions of a contract to be entered into between Eastern and the Watermaster, Eastern shall  
25 initially perform the Accounting Functions for Watermaster. The foregoing clause does not  
26 restrict the ability of the Watermaster to enter into other agreements with other members of the  
27 Watermaster and/or private firms and individuals to provide some or all of the Accounting  
28 Functions.

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**9.6.4.5.2 Water Use, Storage and Transfers.** The

Watermaster shall account for all production by Class A and Class B Participants and Public Agencies using information reported or obtained for that purpose. The Watermaster shall also account for Carry-Over Credits, including the transfer thereof where authorized, and for the use and/or storage and/or transfers of Imported Water by Public Agencies.

**9.6.5 Technical Advisory Committee.** There has been a Technical

Advisory Committee that has functioned throughout the development of the Water Management Principles and Plan, and this Stipulated Judgment. That Committee has been composed of such managerial and technical representatives as the individual Parties decide to appoint. Each Party has paid the costs of its own representatives, and shall continue to do so in the future. The Technical Advisory Committee shall continue to function, and to provide such technical assistance as the Watermaster may request. The Technical Advisory Committee shall make recommendations to the Watermaster's Advisor and to the Watermaster on all matters requiring four votes for Watermaster action, and shall receive from Eastern all data associated with such matters for its review and evaluation. The Technical Advisory Committee and its members shall also function as a way to keep the City Councils, Boards of Directors and participating Private Pumpers fully informed about the implementation of this Judgment.

**9.6.6 Reservation of Rights.** The Watermaster reserves the right to

assume, on its own, any functions set forth in Section 9.6.4, except as provided in Section 9.6.4(1), and to undertake all other acts required to implement the Plan and this Judgment, so long as it is legally capable of performing such functions. The Watermaster, if it should choose, may also act through or in conjunction with the other Public Agencies, or through a Joint Powers Agency composed of all the Public Agencies hereunder. Except as specifically provided in Section 9.6.4(1) with respect to Eastern's facilities used in Phase I, the Watermaster shall have no right to use or acquire the water facilities of any of the Parties, without their consent, provided that it is the intent of the Parties that their individual facilities will be available where appropriate to implement the Water Management Plan, upon terms equitable to all Parties, and consistent with their respective obligations to their own customers.

1                   **9.6.7 Rules and Regulations.** The Watermaster may make such rules  
2 and regulations as may be necessary for its own operations as well as for the operation of the  
3 Plan and this Judgment, subject to Court approval. Meetings of the Watermaster shall be subject  
4 to the Brown Act .

5                   **9.6.8 Reports to Court.** The Watermaster shall file annually with the  
6 Court, and serve on all Parties, a report regarding its activities during the preceding year,  
7 including an audited statement of all accounts and financial activities.

8                   **9.6.9 Notice to Parties.** Watermaster shall maintain a current list of the  
9 Parties and their addresses for notice purposes. Rules for service shall be governed by the  
10 California Code of Civil Procedure and the California Rules of Court. Each Party shall notify  
11 Watermaster in writing of the name and address for its receipt of notice and service under this  
12 Judgment. A Party may change this information by written notice to Watermaster. Notice shall  
13 be deemed sufficient if directed to the most recent address provided by the Watermaster.

14                   **9.7 Watermaster Records.** Watermaster's records shall be kept at the office  
15 of Eastern unless changed by the Watermaster and approved by the Court. These records shall  
16 be treated as public records under the Public Records Act. California Government Code sections  
17 6250-6277 (West 1995 and Supp. 2002).

18                   **10. MISCELLANEOUS.**

19                   **10.1 Intervention After Judgment.** A New Pumper can intervene in this  
20 action as a Class A Participant only, pursuant to Section 4.6. Any other Person who is an heir,  
21 successor or assign of an existing Party, may become a Party to this action and Judgment, subject  
22 to the conditions contained herein, by filing a petition in intervention. The petition may be filed  
23 and approved ex parte with notice to the Watermaster. Such intervener shall thereafter be a Party  
24 bound by this Judgment, and entitled to the rights and privileges accorded under this Judgment to  
25 the Party such Person succeeds in this action.

26                   **10.2 Loss of Rights.** No right adjudicated in this Judgment shall be lost by  
27 non-use, abandonment, forfeiture or otherwise, except upon a written election by the owner of  
28 the right filed with Watermaster, or by order of the Court upon noticed motion and after hearing.



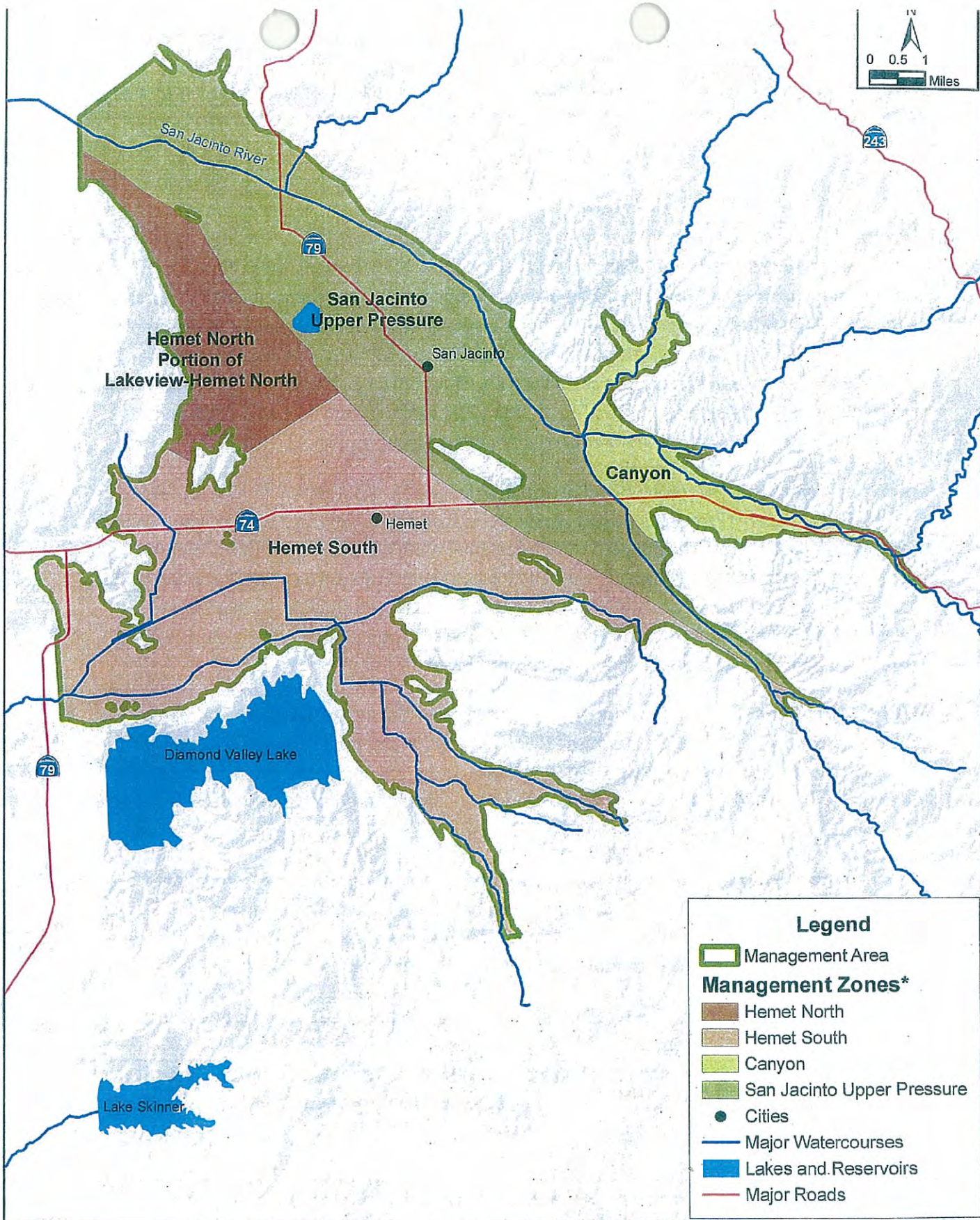
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**10.3. Attorney's Fees and Costs.** No Party shall recover any attorney's fees or costs in this proceeding from any Party.

DATED: 4/18, 201<sup>13</sup>/<sub>2</sub>

M.P. PAULETTE D. BARKLEY  
Commissioner, Superior Court of  
~~California, Riverside County~~  
JUDGE OF THE SUPERIOR COURT

# EXHIBIT A



### Management Area and Management Zones

Hemet / San Jacinto Water Management Plan

\*Source: EMWD

July 2006

Figure 1.1



# H

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## Appendix H: Soboba Settlement Agreement



**SOBOBA BAND OF LUISEÑO INDIANS**  
**SETTLEMENT AGREEMENT**

THIS SETTLEMENT AGREEMENT is entered into by the Soboba Band of Luiseño Indians on behalf of itself and its members (collectively, the “Soboba Tribe”); the United States of America solely in its capacity as trustee for the Soboba Tribe (the “United States”); the Eastern Municipal Water District (“EMWD”); the Lake Hemet Municipal Water District (“LHMWD”); and The Metropolitan Water District of Southern California (“MWD”).

**ARTICLE 1- RECITALS**

1.1 The Soboba Tribe has made claims against EMWD and LHMWD (collectively, the “Local Districts”) for alleged infringement of its water rights in the San Jacinto River (“River”) and the Canyon Sub-basin and the Intake portion of the Upper Pressure Sub-basin associated therewith (collectively “Basin”) in Riverside County, California, and for damages related to historical interference with the Soboba Tribe’s rights and the unauthorized use of its water. Specifically, the Soboba Tribe alleges that the Local Districts, through their longstanding diversion of waters from the River and pumping of Groundwater from the Basin, have interfered with the Soboba Tribe’s water resources and its rights to the beneficial use and enjoyment of the Reservation.

1.2 The Soboba Tribe also has filed a lawsuit against MWD styled *Soboba Band of Luiseño Indians v. Metropolitan Water District of Southern California*, United States District Court Case No. 00-04208 GAF (MANx) (the “Action”). The Action alleges that MWD, by the construction and operation of the San Jacinto Tunnel (the “Tunnel”), has interfered with the Soboba Tribe’s water resources and its rights to the beneficial use and enjoyment of the Reservation.

1.3 The Parties have agreed to settle the Soboba Tribe’s claims on the terms set forth in this Settlement Agreement.

1.4 MWD also contends that it has legal indemnification claims and other rights against EMWD for the Action arising out of MWD Board Resolution 3940 (EMWD's Terms of Annexation into MWD). In 1951, EMWD was created and annexed into MWD for the purposes of resolving claims that MWD's construction and operation of the Tunnel interfered with local water rights in the Basin and to obtain a supplemental supply of water for the area. The Terms of Annexation required EMWD to resolve potentially conflicting rights to the Tunnel seepage water and that MWD annually credit EMWD for the entire amount of Tunnel seepage, which MWD has done every year since 1951. In exchange for the benefits of being annexed into the MWD service area and the return of the Tunnel seepage water to EMWD, EMWD was required to defend and indemnify Metropolitan from certain claims seeking recovery for loss or injury as a consequence of the Tunnel seepage, specifically including claims brought by the Tribe. In response to the Tribe's Action, MWD tendered the defense and indemnity of the Tribe's claims to EMWD, which EMWD declined on the grounds that the Action allegedly exceeded the scope of its obligations under the Terms of Annexation. MWD subsequently filed a third party action against EMWD seeking to enforce the defense and indemnity provisions contained in the Terms of Annexation. EMWD and MWD dispute each other's contentions.

1.5 EMWD and MWD have agreed as part of this settlement to resolve their dispute over the scope of EMWD's defense and indemnity obligations to MWD reflected in the EMWD's Terms of Annexation.

NOW, THEREFORE, in consideration of the promises and agreements hereinafter set forth, the Parties agree as follows:

## **ARTICLE 2 - DEFINITIONS**

This Settlement Agreement employs abbreviated terms that have the meanings below. To the extent that the definitions below conflict with those terms defined in other sections of the Settlement Agreement, the definitions in Article 2 shall prevail.

2.1 "Act" unless otherwise indicated, shall mean the Soboba Settlement Act approving this Settlement Agreement, attached as Exhibit A.

2.2 “Action” means the Soboba Tribe’s lawsuit against MWD styled Soboba Band of Luiseño Indians v. Metropolitan Water District of Southern California, United States District Court Case No. 00-04208 GAF (MANx) and includes MWD’s third party claim against EMWD.

2.3 “AFA” means acre-foot of water per annum.

2.4 “Basin” means collectively the Canyon Sub-basin and the Intake portion of the Upper Pressure Sub-basin as depicted on Exhibit B (map) and described in Exhibit C.

2.5 “Best Efforts” means that the Districts will take all commercially reasonable actions to fulfill the referenced contractual obligation.

2.6 “Canyon Sub-basin” means the groundwater basin as depicted on Exhibit B (map) and described in Exhibit C.

2.7 “Court” shall mean the Federal District Court for the Central District of California, Central Division, which has exercised jurisdiction over the Action.

2.8 “Decree Court” means the court with jurisdiction over the judgment and decree entered in accordance with this Settlement Agreement.

2.9 “Districts” means EMWD, LHMWD, and MWD.

2.10 “Effective Date” means the date on which the Secretary causes to be published in the Federal Register a statement of findings that the conditions in Section 3.1 have been fulfilled.

2.11 “EMWD” means the Eastern Municipal Water District.

2.12 “Groundwater” for the purposes of this Settlement Agreement means all water beneath the surface of the earth.

2.13 “Imported Water” means water sold by MWD to EMWD pursuant to Section 4.4 and is not intended to have the same meaning as the term “Imported Water” as used in MWD’s Administrative Code.

2.14 “Intake Sub-basin” means the portion of the Upper Pressure groundwater Sub-basin as depicted on Exhibit B (map) and described in Exhibit C.

2.15 “LHMWD” means the Lake Hemet Municipal Water District.

2.16 "Local Districts" means EMWD and LHMWD.

2.17 "MWD" means The Metropolitan Water District of Southern California.

2.18 "Party" is the singular form of "Parties," which means the entities represented by the signatories to this Settlement Agreement.

2.19 "Recharge Facilities" means those facilities to be constructed by the Local Districts pursuant to Section 4.4.G of this Settlement Agreement for the purpose of recharging the Imported Water into the Basin.

2.20 "Reservation" means the Soboba Indian Reservation as depicted on Exhibit D (map), comprising approximately 5,935 acres, as established by Executive Order on June 19, 1883; thereafter expanded by Executive Orders on January 29, 1887, and December 29, 1891, the purchase of 709.65 acres known as "Tract 8" in 1911, the issuance of a trust patent for 68.9 acres in 1913, and the transfer of 880 acres pursuant to the Southern California Indian Land Transfer Act, Pub. L. No. 100-581, 102 Stat. 2946 (1988); and, thereafter modified by Executive Orders of March 22, 1886, and January 29, 1887, and the issuance of a fee patent for 32.84 acres in 1900. It does not include the 950 acres northwest of and contiguous to the Reservation known as the "Jones Ranch," purchased by the Soboba Tribe in fee on July 21, 2001, and placed into trust on January 13, 2003, nor the 535 acres southeast of and contiguous to the Reservation known as the "Horseshoe Grande," purchased by the Soboba Tribe in fee in seven separate transactions in June and December 2001, December 2004; June 2006 and January 2007, nor the 478 acres north of and contiguous to the Reservation known as "The Oaks," purchased by the Soboba Tribe in fee on April 4, 2004.

2.21 "River" means the surface flow of the San Jacinto River and its tributaries from its origins in the San Jacinto Mountains into and across the Basin as shown on Exhibit B (map).

2.22 "Secretary" means the Secretary of the Interior or her designee.

2.23 "Settlement Agreement" means this document including all exhibits, which are incorporated by reference, as amended to be consistent with the Act.

2.24 "Soboba Tribe" means the Soboba Band of Luiseño Indians, a body politic and federally recognized Indian tribe, and its individual members.

2.25 "Surface Water" means all surface water flows of the River.

2.26 "Terms of Annexation" means Metropolitan Resolution No. 3940 which sets forth the terms of EMWD's annexation to MWD.

2.27 "Tribal Water Right" means the Soboba Tribe's rights to water set forth in Section 4.1.

2.28 "Tunnel" means that portion of the Colorado River Aqueduct known as the San Jacinto Tunnel.

2.29 "United States," unless otherwise indicated, means the United States of America solely in its capacity as trustee on behalf of the Soboba Tribe or its members.

2.30 "Untreated Replenishment Water" means untreated water sold pursuant to the Replenishment Service program as defined by MWD's Administrative Code at sections 4104, 4114 and 4514.

2.31 "Upper Pressure Sub-basin" means the groundwater basin as depicted on Exhibit B (map).

2.32 "WMP" means the Water Management Plan that will be developed by EMWD, LHMWD, the City of Hemet, the City of San Jacinto and other Basin users, pursuant to Section 4.8.A of this Settlement Agreement, to manage the Canyon Sub-basin, the Upper Pressure Sub-basin downstream to Bridge Street, and the Hemet Basins. The principles of the Water Management Plan are attached as Exhibit E. The area covered by the Water Management Plan is depicted on Exhibit F (map) and described in Exhibit G.

### **ARTICLE 3 – CONDITIONS PRECEDENT AND ENFORCEMENT**

3.1 This Settlement Agreement shall become enforceable, and the releases and waivers of Article 5 effective, as of the date the Secretary causes to be published in the Federal Register a statement of findings that the following conditions have been fulfilled:

A. the Act has been enacted;

B. to the extent that the Settlement Agreement conflicts with the Act, the Settlement Agreement has been revised to conform with the Act;

C. the Settlement Agreement, as so revised, and the Waivers and Releases have been executed by the Parties and the Secretary;

D. warranty deeds for the property to be conveyed in fee to the Soboba Tribe pursuant to Section 4.6 have been placed in escrow with instructions that they shall be delivered to the Soboba Tribe by close of business on the first business day following the date that all of the conditions in this paragraph have been fulfilled;

E. the Soboba Tribe and the United States have approved the WMP; and

F. the Judgment and Decree attached to the Settlement Agreement as Exhibit H or a judgment and decree substantially the same as Exhibit H has been approved by the United States District Court, Eastern Division of the Central District of California, and that judgment and decree has become final and nonappealable.

3.2 Other than to take all necessary steps to cause the events described in this Article to occur, no Party shall be required to perform any of the obligations, or be entitled to any of the benefits, under this Settlement Agreement before all conditions precedent have been fulfilled. After the fulfillment of all conditions precedent, the Parties shall be bound by all provisions of this Settlement Agreement.

3.3 If all of the conditions listed in Section 3.1 have not been fulfilled by March 1, 2012, this Settlement Agreement shall be null and void, and any consideration, together with any income earned thereon, shall be returned to the depositing entity.

#### **ARTICLE 4 - TRIBAL WATER RIGHTS**

4.1 Water Rights. The Parties ratify, confirm, declare to be valid and agree not to object to or dispute or challenge in any judicial or administrative proceedings the rights of the Soboba Tribe and the United States solely in its capacity as trustee for the Soboba Tribe, to the water rights set forth in this Section. In so doing, the Parties acknowledge that these rights are the result of bargained for and exchanged concessions, as a result of which the Local Districts

have agreed to supply water to the Soboba Tribe if it is unable, except for mechanical failure of its wells, pumps or water facilities, to produce the water to which it is entitled under this Article. Therefore, the Soboba Tribe shall have the following water rights which shall be held in trust by the United States for the benefit of the Soboba Tribe:

A. The prior and paramount right, superior to all others, to pump 9,000 AFA from the Basin for any use on the Reservation and lands now owned or hereafter acquired by the Soboba Tribe contiguous to the Reservation or within the Basin.

B. The Soboba Tribe's right to pump a total of 9,000 AFA from the Basin is without regard to whether the water was naturally or artificially recharged.

C. In the event the Soboba Tribe is unable, except for mechanical failure of its wells, pumps or water facilities, to produce from its existing wells or equivalent replacements up to 3,000 AFA production from the Canyon Sub-basin and the remainder of its Tribal Water Right from the Intake Sub-basin, subject to Section 4.3.A, the Local Districts shall deliver any shortage to the Soboba Tribe. Any shortage shall be delivered at such locations as the Soboba Tribe and the Local Districts may agree, or if there is no agreement, at the wellheads where the shortage occurred. Such water may be supplied from Local District wells in either the Canyon or Intake Sub-basins, or from other sources. For any water delivered pursuant to this paragraph, the Soboba Tribe shall pay an acre-foot charge equal to its then current cost of production, and any avoided cost of treatment, from the wells where the shortage occurred, assuming pumping lifts equal to the Soboba Tribe's averages in the respective Sub-basins over the preceding ten years.

4.2 Water Quality. Recharged water placed in the Canyon Sub-basin by Local Districts and/or the WMP and any replacement water delivered to the Soboba Tribe pursuant to Section 4.3.C shall conform to all applicable State water quality regulations and, without prior written approval from the Soboba Tribe, shall neither exceed (1) any Federal or State of California primary or secondary drinking water standards (except with respect to recharged water, turbidity, color, or coliform bacteria) nor (2) 0.3 milligrams per liter (mg/l) boron or 0.05 mg/l lithium. Recharged water placed in the Intake Sub-basin by EMWD, LHMWD, and/or the

WMP shall conform to all applicable State water quality regulations. Nothing in this paragraph shall affect the water quality obligations assumed by Metropolitan for Imported Water set forth in Section 4.4.

4.3 Soboba Tribe's Water Use. Beginning on the Effective Date, the Soboba Tribe's right to pump groundwater in the exercise of its Tribal Water Right shall be subject to the following provisions:

A. The Soboba Tribe agrees to limit its exercise of the Tribal Water Right to 4,100 AFA for a period of fifty (50) years commencing with the Effective Date, according to the schedule set forth in Exhibit I to this Settlement Agreement. Should the Soboba Tribe during that period identify a need for water in addition to the Schedule set forth in Exhibit I, the Soboba Tribe shall have the right to purchase water from the WMP at the rate then being charged to the WMP's municipal producers.

B. Any use of the Tribal Water Right by an individual member of the Soboba Tribe shall be satisfied out of the water resources provided to the Soboba Tribe in this Settlement Agreement.

C. In addition to the limitation in Section 4.3.A, the Soboba Tribe may enter into contracts and options to lease or contracts and options to exchange water made available to it under this Settlement Agreement, or enter into contracts and options to postpone existing water uses or postpone undertaking new or expanded water uses. Any such water thereby made available to others shall only be used by participants in, or other users within the area of, the WMP. No contract shall be for a term exceeding one hundred (100) years, nor shall any contract provide for permanent alienation of any portion of the Tribal Water Right.

4.4 Purchase of Imported Water [see definition of Imported Water in Section 2.13 of this Settlement Agreement]. In order to provide water to the Soboba Tribe and to reduce the overdraft of the Basin, EMWD and MWD agree to enter into a contract pursuant to which MWD will sell and EMWD on behalf of the WMP will purchase the Imported Water under the following terms:



A. Price. The Imported Water will be sold by MWD to EMWD at the then prevailing service rate charged by MWD for Untreated Replenishment Water, which rate is reflected in MWD's Administrative Code at section 4401(a)(2). As of the date this Settlement Agreement is signed by MWD, the service rate for such water is \$238 per acre foot. Changes in the rates charged for Imported Water shall be effective the same date that the new rates for Untreated Replenishment Water become applicable to MWD's member agencies. Should MWD ever discontinue the delivery of Untreated Replenishment Water, the service rate for water supplied pursuant to this contract shall initially be determined by taking the last published service rate for Untreated Replenishment Water and charged to EMWD under this contract. Thereafter, the rate for Imported Water would continue to be adjusted on the same percentage basis as MWD's service rate for the non-interruptible untreated water deliveries to its member agencies, which adjustments shall become effective on the same date that the new service rates become applicable to MWD's member agencies.

B. Use. For purposes of the Imported Water only, MWD releases EMWD from all covenants that now, or may in the future, require that water purchased at the service rate for Untreated Replenishment Water be left in the ground or otherwise not used for any period of time.

C. Duration. The contract shall commence upon the Effective Date and will expire on December 31, 2035. EMWD and MWD agree to negotiate in good faith a possible extension of this water sale contract for an additional period which, when added to the original term expiring on December 31, 2035, would provide for a total term of 50 years. In determining whether or not to extend the term of this contract for this additional period, MWD will consider the current status of its replenishment water program, the status of MWD's State Water Project contract, the implementation of this Settlement Agreement, and any other information that MWD deems relevant to the possible extension of the water sale contract. Nothing in this paragraph shall be construed to require MWD to extend the water sale contact.

D. Water Quality. Water sold by MWD pursuant to this contract shall be of a quality

that is consistent with MWD's operational and water quality goals. MWD agrees to make Best Efforts to meet water quality objectives set by the Santa Ana Regional Water Quality Control Board for recharged water being put into the Basin. MWD takes no risks associated with any discrepancy between the water quality obligations assumed by MWD pursuant to this paragraph and water quality standards applicable to recharged water set by the Santa Ana Regional Water Quality Control Board or other regulatory body.

E. Deliveries. Deliveries under this contract shall not begin until the Effective Date. Once deliveries are commenced, MWD shall use Best Efforts to deliver 7,500 AFA for the duration of the contract based upon 15-year averages. Annual deliveries shall be calculated on a January 1 to December 31 calendar year and shall be pro rated for any portion of a year during which the contract is in force. MWD reserves the right to deliver water at any time of the year. MWD shall give EMWD advance notice of Imported Water deliveries as provided for in MWD's then current Administrative Code and implementing guidelines for replenishment water deliveries, which presently is reflected in section 4514(c) of MWD's Administrative Code.

F. Point of Delivery. Deliveries shall be made by MWD to EMWD at the connection known as EM-14 or, upon mutual agreement of MWD and EMWD, at one or more additional existing or future connections. The Parties acknowledge that the suspension or termination of deliveries to EM-14 may, at any time, as determined by MWD's Chief Executive Officer, be required to meet MWD's operational needs. If deliveries to this location are suspended or terminated, then EMWD and MWD agree to negotiate in good faith to identify an alternative delivery point or points and, if MWD and EMWD are unable to reach agreement, the dispute shall be resolved by the Decree Court.

G. Recharge Facilities. The Local Districts, through the WMP, shall construct, operate, and maintain facilities for artificial Groundwater recharge and banking of the Imported Water. Said facilities shall be sufficient to accommodate a flow rate of 42 cubic feet per second and to store up to 40,000 acre feet of Imported Water in the Basin. MWD shall have a paramount right to use capacity in the Recharge Facilities sufficient to accommodate a flow rate of 42 cubic

feet per second and a paramount right to store up to 40,000 acre feet of Imported Water to meet its obligations under this Settlement Agreement, provided that MWD's sole remedy if the required storage capacity is not made available is to reduce its obligation by the amount of water that it was prepared but unable to deliver due to the lack of storage capacity. MWD's obligations under this Section 4.4 shall not arise until the Recharge Facilities are capable of meeting the capacity and storage requirements set forth in this paragraph.

H. Postponed Deliveries. EMWD shall have the right to postpone deliveries during periods when the Recharge Facilities are not capable of meeting the capacity and storage requirements set forth in Section 4.4.G, provided that each of the following four conditions are met: (i) the inability to meet capacity and storage requirements is the result of events beyond the control of the Local Districts and/or the WMP; (ii) the inability to meet capacity and storage requirements is not the result of negligence on the part of the Local Districts and/or the WMP; (iii) the inability to meet capacity and storage requirements is not the result of water quality limitations that are more restrictive than those established pursuant to Section 4.4.D, and (iv) that the Local Districts use Best Efforts to make necessary repairs and/or take other actions necessary to make the Recharge Facilities fully operational.

(1) If the conditions for postponed deliveries are met as required herein, MWD shall make up such deferred deliveries at a later time, to the extent that MWD has Untreated Replenishment Water available.

(2) If the conditions for postponed deliveries are not met as required herein, then MWD's obligation to deliver water shall be reduced by the amount of water that MWD was prepared to deliver, subject to the 42 cubic feet per second maximum flow rate, and the existence of unused storage capacity up to the 40,000 acre-foot maximum.

I. Pre-Deliveries. MWD shall have complete discretion concerning use of the 40,000 acre feet of storage capacity for the pre-delivery of Imported Water, including the right not to use such capacity. As such, MWD makes no commitments to pre-deliver any amount of Imported Water.

4.5 Funding for Infrastructure. In accordance with the Act, the United States shall establish in the Treasury of the United States a fund in the amount of \$10,000,000, managed by the Secretary of the Interior, which may be drawn upon by EMWD to pay or reimburse costs associated with constructing, operating, and maintaining that portion of the Recharge Facilities necessary to accommodate deliveries of the Imported Water.

4.6 Land Transfer.

A. EMWD Property. In settlement of the Action, EMWD shall place into escrow a warranty deed conveying to the Soboba Tribe in fee all of the property presently owned by EMWD at Domenigoni Parkway and Highway 79, consisting of approximately 106 acres which is described and illustrated in Exhibit J to this Settlement Agreement. The escrow instructions shall provide that the warranty deed shall be delivered to the Soboba Tribe by close of business on the first business day following the Effective Date.

B. MWD Property. In settlement of the Action, MWD shall place into escrow a warranty deed conveying to the Soboba Tribe in fee property presently owned by MWD at Domenigoni Parkway and Patterson Avenue, consisting of approximately 21.7 acres which is described and illustrated in Exhibit K to this Settlement Agreement. The escrow instructions shall provide that the warranty deed shall be delivered to the Soboba Tribe by close of business on the first business day following the Effective Date.

C. Use of Property. Management and development by the Soboba Tribe of the lands transferred by this paragraph shall comply with all applicable Federal law. Any regulation by the Soboba Tribe of the environment on, under or above such lands that impacts MWD's operations, including but not limited to its operations related to Diamond Valley Reservoir, shall be consistent with, and no more stringent than, comparable regulation by the United States and the State of California.

4.7 Development Funds.

A. Local Districts. No later than 120 days after the Effective Date and before any funds are released to the Local Districts under Section 4.5, the Local Districts shall pay to the

Soboba Tribe the sum of \$7,000,000 plus interest at the average daily prime rate (as reported by the Wall Street Journal) plus two and one-quarter percent (2.25%) per annum from the Effective Date until paid. No later than 120 days after any funds are released to the Local Districts under Section 4.5, the Local Districts shall pay to the Soboba Tribe a sum equal in amount to the funds so released plus interest at the average daily prime rate (as reported by the Wall Street Journal) plus two and one-quarter percent (2.25%) per annum from the date of the release of such funds until paid. All sums paid to the Tribe by the Local Districts pursuant to this Section 4.7.A are determined to be non-trust funds and shall be managed by the Soboba Tribe in its sole discretion. The United States shall have no responsibility with respect to the funds provided to the Soboba Tribe pursuant to this paragraph.

B. United States. In accordance with the Act, the United States shall establish in the Treasury of the United States a trust fund in the amount of \$11,000,000, managed by the Secretary of the Interior in accordance with the American Indian Trust Fund Management Reform Act of 1994 (25 U.S.C. 4001 et seq.) and this Settlement Agreement. There shall be no expenditures from the trust fund until the conditions in Section 3.1 are fulfilled.

(1) Investment of the Fund. The Secretary shall invest amounts in this fund in accordance with the Act of April 1, 1880 (21 Stat. 70, ch. 41, 25 U.S.C. 161), the first section of the Act of June 24, 1938 (52 Stat. 1037, ch. 648, 25 U.S.C. 162a), and this paragraph.

(2) Fund Uses. This fund may be drawn upon by the Soboba Tribe with the approval of the Secretary to pay or reimburse costs associated with constructing, operating, and maintaining water and sewage infrastructure or other water-related development projects.

#### 4.8 Other Terms.

A. The Local Districts, with the cooperation of other Groundwater producers in the Basin, shall develop and implement a WMP for the Basin that will address the current Basin overdraft, and recognize and take into account the Tribal Water Right. The WMP shall not be final or deemed effective for the purposes of this Settlement until it is approved by the Soboba Tribe and the United States. No implementation or subsequent modification of the WMP shall

threaten or adversely affect the rights of the Soboba Tribe hereunder, and the Soboba Tribe and the United States reserve the right under the continuing jurisdiction of the Decree Court to litigate any such issue.

B. EMWD will credit to the Soboba Tribe the sum of \$1,000,000 to be deducted from the cost of water and sewage financial participation fees (connection fees) and similar fees charged by EMWD for any property owned by the Soboba Tribe within EMWD's then existing service area for which service is sought pursuant to an agreement for service between the Soboba Tribe and EMWD. The Soboba Tribe and EMWD agree to negotiate in good faith concerning any future agreement for service which shall be funded in whole or in part by the credit established pursuant to this paragraph.

C. LHMWD will make available for habitat preservation and/or environmental mitigation purposes property it owns in the San Jacinto River bed, consisting of approximately 12 acres which is described and illustrated in Exhibit L to this Settlement Agreement. This property shall be used for habitat preservation and/or environmental mitigation to assist in meeting the requirements of applicable Federal and State environmental laws relating to the Recharge Facilities.

D. The Soboba Tribe agrees to provide the Local Districts with all information reasonably available to the Soboba Tribe that the Local Districts and the Soboba Tribe agree is required to implement this Settlement Agreement and the WMP.

E. MWD shall not be joined in any legal proceeding to enforce the Tribal Water Right described in Sections 4.1 through 4.3 or which concerns the duties and obligations reflected at Section 4.8, paragraphs A through E, unless said proceeding relates to MWD's failure to perform its obligations to deliver water set forth in Section 4.4.

## **ARTICLE 5 - RELEASES AND WAIVERS**

### **5.1 Soboba Tribe**

A. The Soboba Tribe, on behalf of itself and its members, and the United States solely in its capacity as trustee for the Tribe releases EMWD, LHMWD, and MWD for:

(1) Past, present and future claims to Surface and Groundwater rights for the Reservation, arising from time immemorial through the Effective Date and anytime thereafter, except claims to enforce this Settlement Agreement or claims based on water rights acquired after the Effective Date;

(2) Past, present and future claims for injury of any kind arising from interference with Surface water and Groundwater resources and water rights of the Reservation, including, but not limited to, all claims for injury to the Soboba Tribe's use and enjoyment of the Reservation, economic development, religion, language, social structure and culture, and injury to the natural resources of the Reservation, from time immemorial through the Effective Date;

(3) Past, present and future claims for injury of any kind arising from, or in any way related to, continuing interference with Surface water and Groundwater resources and water rights of the Reservation, including the full scope of claims defined in Section 5.1.A(2), to the extent that such continuing interference began prior to the Effective Date, from time immemorial through the Effective Date and anytime thereafter;

(4) Past, present and future claims for injury of any kind arising from, or in any way related to, seepage of water into the Tunnel, including the full scope of claims defined in Section 5.1.A(2), from time immemorial through the Effective Date and anytime thereafter; and

(5) Past, present and future claims for injury of any kind arising from, or in any way related to, the WMP as approved in accordance with this Settlement Agreement, from time immemorial through the Effective Date and anytime thereafter.

B. The Soboba Tribe, on behalf of itself and its members, releases the United States for:

(1) Claims described in Section 5.1.A(1)-(5);

(2) Past, present and future claims for failure to acquire or develop water rights and water resources of the Reservation arising from time immemorial through the Effective Date and anytime thereafter;

(3) Past, present and future claims for failure to protect water rights and water

resources of the Reservation arising from time immemorial through the Effective Date, and any past, present and future claims for any continuing failure to protect water rights and water resources of the Reservation, arising from time immemorial through the Effective Date and, to the extent that such continuing failure to protect began before the Effective Date, anytime thereafter;

(4) Past, present and future claims arising from the failure of any non-federal Party to fulfill the terms of this Settlement Agreement at anytime.

(5) Past, present, and future claims arising out of the negotiation of this Settlement Agreement or the negotiation and enactment of the Act, or any specific terms or provisions thereof, including but not limited to the Soboba Tribe's consent to limit the number of participant parties to this Settlement Agreement.

C. The releases contained in Section 5.1.B shall take effect on the date on which the all of the amounts under Sections 4.5 and 4.7.B are appropriated.

(1) All periods of limitation and time-based equitable defenses applicable to the claims set forth in Section 5.1.B are tolled for the period between the date of enactment of the Act until the date on which all of the amounts under Sections 4.5 and 4.7.B are appropriated.

(2) This Section 5.1.C neither revives any claim nor tolls any period of limitation or time-based equitable defense that may have expired before the date of enactment of the Act.

(3) The making of the amounts of appropriations under Sections 4.5 and 4.7.B shall constitute a complete defense to any claim which involves the claims set forth in Section 5.1.B pending in any court of the United States on the date on which the appropriations are made.

D. The Soboba Tribe, on behalf of itself and its members, expressly preserves as against all Parties all rights and remedies relating to:

(1) The enforcement of this Settlement Agreement;

(2) The infringement of any water rights arising under Federal or State law which may be appurtenant to property, other than the Reservation, that is now owned or hereafter acquired by the Soboba Tribe, excepting claims identified in Section 5.1.A(4), which relate to



Tunnel seepage, and any challenge to approved portions of the WMP.

E. The Soboba Tribe agrees to defend, indemnify, and hold harmless EMWD, LHMWD, MWD, and the United States for any claim seeking damages or other form of relief based upon the rights released by the Soboba Tribe in Section 5.1.A and B, and all of their respective subparts.

F. Notwithstanding the waivers and releases in Section 5.1.A, the United States retains all claims relating to violations of the Clean Water Act, the Safe Drinking Water Act, the Comprehensive Environmental Response, Compensation, and Liability Act, Resource Conservation and Recovery Act, and the regulations implementing these Acts, including, but not limited to claims related to water quality.

## 5.2 EMWD

A. EMWD shall release LHMWD, MWD, the Soboba Tribe, and the United States from:

(1) All past and present claims arising from or in any way related to the claims released by the Soboba Tribe and the United States solely in its capacity as trustee for the Soboba Tribe in Section 5.1, A and B, and all of their respective subparts; and

(2) All past and present claims arising from, or in any way related to, interference with EMWD's Surface and Groundwater rights under Federal or State law from time immemorial through the Effective Date, including, but not limited to, all rights originally belonging to EMWD's predecessors and/or otherwise acquired by EMWD prior to the Effective Date .

B. Notwithstanding the dispute between EMWD and MWD over the scope of EMWD's defense and indemnity obligations reflected in Section 8 of Resolution 3940 (the Terms of Annexation) or the language of Section 8, EMWD shall defend and indemnify MWD against all demands, claims, suits, or other administrative or legal proceedings arising from, or in anyway connected to, the infiltration of water into the Tunnel. This obligation shall apply irrespective of when the claim arose or the alleged infringement, harm, or injury occurred.

- C. EMWD expressly preserves all rights and remedies relating to:
- (1) As against all Parties, the enforcement of this Settlement Agreement;
  - (2) As against all Parties, the infringement of any water rights arising under State law acquired in the future by EMWD; and
  - (3) As against MWD, the Terms of Annexation, except as expressly agreed to in Section 5.2.B.

5.3 LHMWD

A. LHMWD shall release EMWD, MWD, the Soboba Tribe, and the United States from:

- (1) All past and present claims arising from or in any way related to the claims released by the Soboba Tribe and the United States solely in its capacity as trustee for the Soboba Tribe in Section 5.1.A and B, and all of their respective subparts; and
- (2) All past and present claims arising from, or in any way related to, interference with LHMWD's Surface and Groundwater rights under Federal or State law from time immemorial through Effective Date.

B. LHMWD expressly preserves all rights and remedies relating to:

- (1) As against all Parties, the enforcement of this Settlement Agreement; and
- (2) As against all Parties, the infringement of any water rights arising under State law acquired in the future by LHMWD.

5.4 MWD

A. MWD shall release EMWD, LHMWD, the Soboba Tribe, and the United States from:

- (1) All past and present claims arising from or in any way related to the claims released by the Soboba Tribe and the United States solely in its capacity as trustee for the Soboba Tribe in Section 5.1.A and B, and all of their respective subparts; and
- (2) All past and present claims arising from, or in any way related to, interference with MWD's Surface and Groundwater rights under Federal or State law from time immemorial

through the Effective Date .

B. MWD expressly preserves all rights and remedies relating to:

(1) As against all Parties, the enforcement of this Settlement Agreement;

(2) As against all Parties, the infringement of any water rights arising under State law acquired in the future by MWD; and

(3) As against EMWD, the Terms of Annexation, except as expressly agreed to in Section 5.2.B.

5.5 All Parties Release of Unknown Claims.

A. Each Party acknowledges and agrees that certain of the releases reflected in Sections 5.1 through 5.5 apply to all claims whether known or unknown to the releasing Party.

B. Each Party certifies that it has read the following provisions of California Civil Code Section 1542:

“A general release does not extend to claims which the creditor does not know or suspect to exist in his favor at the time of executing the release, which if known by him must have materially affected his settlement with the debtor.”

C. Each Party waives the application of California Civil Code Section 1542. In doing so, each Party acknowledges that it is consciously releasing claims that may exist as of the date of this release but which it does not know exist, and which, if known, would materially affect its decision to execute this Settlement Agreement, regardless of whether the Parties' lack of knowledge is the result of ignorance, oversight, error, negligence, or any other cause.

5.6 Consent to Jurisdiction. The United States consents to jurisdiction in the Action for the purpose of obtaining approval for a judgment and decree substantially the same as the judgment and decree attached to this Settlement Agreement as Exhibit H.

A. Nothing in this Agreement restricts, enlarges, or otherwise determines the subject matter jurisdiction of any Federal, State, or Tribal court.

B. Nothing in this Agreement confers jurisdiction on any State court to enforce Federal environmental laws regarding the duties of the United States or conduct judicial review

of Federal agency action.

## **ARTICLE 6- ADMINISTRATION AND OTHER CONSIDERATIONS**

6.1 Disclaimer. Nothing in this Settlement Agreement shall be construed as establishing any standard to be used for the quantification of Federal reserved rights, aboriginal claims, or any other Indian claims to water or lands in any judicial or administrative forum or proceeding. Nothing in this Settlement Agreement shall be construed to quantify or otherwise affect the water rights, claims or entitlements to water of any California tribe, band or community other than the Soboba Tribe.

6.2 Evidentiary Effect of Negotiations. This Settlement Agreement has been arrived at in the process of good faith negotiation for the purpose of resolving legal disputes, including pending litigation, and all Parties agree that no conduct, statements, offers, or compromises made in the course thereof shall be construed as admissions against interest or be used in any legal forum or proceeding other than one for approval, confirmation, interpretation, or enforcement of this Settlement Agreement.

6.3 Authorship. The Parties agree that this Settlement Agreement reflects the joint drafting efforts of all Parties. In the event that any dispute, disagreement, or controversy arises regarding this Settlement Agreement, the Parties shall be considered joint authors and no provision shall be interpreted against any Party because of authorship.

6.4 Authorization to Execute. Each Party represents and warrants that she or he is authorized to execute this Settlement Agreement on behalf of the respective Parties to this Settlement Agreement and does so freely and voluntarily.

6.5 Effect of Execution by the Districts. Execution of this Settlement Agreement by the Districts signifies that provisions of this Settlement Agreement affecting the Districts have been approved by their respective Boards of Directors, and these agencies assume the obligations of and are entitled to the benefits of this Settlement Agreement.

6.6 No Inducements. Each Party acknowledges and represents that in executing this Settlement Agreement it has not relied upon any inducements, promises, or representations made by the other Parties which are not reflected in this Settlement Agreement.

6.7 Advice of Counsel. Each Party warrants and represents that, in executing this Settlement Agreement, it has relied upon legal advice from counsel of its choice; that the terms of this Settlement Agreement have been read and its consequences have been completely explained to it by counsel; and that it fully understands the terms of this Settlement Agreement.

6.8 Contingent on Appropriation of Funds. The expenditure or advance of any money or the performance of any obligation by the United States under this Settlement Agreement is contingent upon appropriation of funds therefor. If funds are not appropriated, the United States shall accrue no liability.

6.9 Officials Not to Benefit. No member of or delegate to Congress or Resident Commissioner shall be admitted to any share or part of this Settlement Agreement or to any benefit that may arise from this Settlement Agreement. This restriction shall not be construed to extend to this Settlement Agreement if made with a corporation or company for its general benefit.

6.10 Counterparts. This Settlement Agreement may be signed in counterparts by one or more of the Parties, and those counterparts, when taken together, shall have the same force and effect as if a single, original document had been signed by all the Parties.

6.11 Jurisdiction. The Decree Court retains jurisdiction over the Judgment and Decree and the Settlement Agreement.

6.12 Governing Law. This Settlement Agreement shall be construed in accordance with Federal laws and where appropriate the laws of the State of California.

6.13 Successors and Assigns. This Settlement Agreement and the attached waivers and agreements shall, unless otherwise indicated, be binding on and inure to the benefit of the Parties, and their respective successors and assigns.

6.14 Integration. This Settlement Agreement incorporates all the exhibits and sets forth the entire agreement of the Parties with respect to the subject matter hereof, with the exception that EMWD and MWD have resolved certain rights and obligations by way of a Partial Settlement Agreement dated November 14, 2001 which shall remain binding on those two Parties only. This Settlement Agreement may be amended only by written agreement executed by the Parties.

#### ARTICLE 7- NOTICE AND SIGNATURES

7.1 Notices. Any notice or other communication given under this Settlement Agreement must be in writing and delivered by overnight courier service or certified mail, return receipt requested, postage prepaid and properly addressed to the Parties at the addresses listed below (or to any other or further addresses the Parties may subsequently designate by notice in this manner). All these notices and communication shall be effective when delivery to the required recipient is completed in accordance with this paragraph:

To the Soboba Tribe:

Chairperson  
Soboba Band of Luiseño Indians  
P.O. Box 487  
San Jacinto, CA 92581

To the United States of America:

Asst. Secretary for Indian Affairs  
U.S. Department of the Interior  
1849 C St. NW 4104 MIB  
Washington, DC 20240-0001

Chief, U.S. Dept. of Justice  
Indian Resources Section  
P.O. Box 44378  
L'Enfant Plaza Station  
Washington, DC 20026-4378

cc: Regional Director  
Bureau of Indian Affairs  
Pacific Region  
2800 Cottage Way  
Sacramento, CA 95825

To EMWD:

General Manager  
Eastern Municipal Water District  
P.O. Box 8300  
Perris, CA 92572-8300

To LHMWD:

General Manager  
Lake Hemet Municipal Water District  
P.O. Box 5039  
Hemet, CA 92544

To MWD:

Chief Executive Officer  
Metropolitan Water District of Southern California  
P.O. Box 54153  
Los Angeles, California 90054-0153

General Counsel  
Metropolitan Water District of Southern California  
P.O. Box 54153  
Los Angeles, California 90054-0153

IN WITNESS WHEREOF, the Parties have executed this Settlement Agreement on the day and year written below.

SOBOBA BAND OF LUISEÑO INDIANS

Date: March 12, 2008

By: Rosemary Morillo  
Rosemary Morillo, Vice Chairwoman

THE UNITED STATES OF AMERICA

Date: \_\_\_\_\_

By: \_\_\_\_\_

THE EASTERN MUNICIPAL WATER DISTRICT

Date: \_\_\_\_\_

By: \_\_\_\_\_  
David J. Slawson, President

THE LAKE HEMET MUNICIPAL WATER DISTRICT

Date: \_\_\_\_\_

By: \_\_\_\_\_  
Frank Douglas Marshall III, President

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Date: \_\_\_\_\_

By: \_\_\_\_\_  
Jeffrey Kightlinger, General Manager



IN WITNESS WHEREOF, the Parties have executed this Settlement Agreement on the day and year written below.

SOBOBA BAND OF LUISEÑO INDIANS

Date: \_\_\_\_\_

By: \_\_\_\_\_  
Rosemary Morillo, Vice Chairwoman

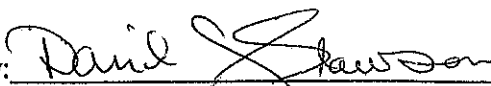
THE UNITED STATES OF AMERICA

Date: \_\_\_\_\_

By: \_\_\_\_\_

THE EASTERN MUNICIPAL WATER DISTRICT

Date: \_\_\_\_\_

By:  \_\_\_\_\_  
David J. Slawson, President

THE LAKE HEMET MUNICIPAL WATER DISTRICT

Date: \_\_\_\_\_

By: \_\_\_\_\_  
Frank Douglas Marshall III, President

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Date: \_\_\_\_\_

By: \_\_\_\_\_  
Jeffrey Kightlinger, General Manager

IN WITNESS WHEREOF, the Parties have executed this Settlement Agreement on the day and year written below.

SOBOBA BAND OF LUISEÑO INDIANS

Date: \_\_\_\_\_

By: \_\_\_\_\_  
Rosemary Morillo, Vice Chairwoman

THE UNITED STATES OF AMERICA

Date: \_\_\_\_\_

By: \_\_\_\_\_

THE EASTERN MUNICIPAL WATER DISTRICT

Date: \_\_\_\_\_

By: \_\_\_\_\_  
David J. Slawson, President

THE LAKE HEMET MUNICIPAL WATER DISTRICT

Date: \_\_\_\_\_

By:  \_\_\_\_\_  
Frank Douglas Marshall III, President

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Date: \_\_\_\_\_

By: \_\_\_\_\_  
Jeffrey Kightlinger, General Manager

IN WITNESS WHEREOF, the Parties have executed this Settlement Agreement on the day and year written below.

SOBOBA BAND OF LUISEÑO INDIANS

Date: \_\_\_\_\_

By: \_\_\_\_\_  
Rosemary Morillo, Vice Chairwoman

THE UNITED STATES OF AMERICA

Date: \_\_\_\_\_

By: \_\_\_\_\_

THE EASTERN MUNICIPAL WATER DISTRICT

Date: \_\_\_\_\_

By: \_\_\_\_\_  
David J. Slawson, President

THE LAKE HEMET MUNICIPAL WATER DISTRICT

Date: \_\_\_\_\_

By: \_\_\_\_\_  
Frank Douglas Marshall III, President

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Date 3/11/08

By: \_\_\_\_\_  
Jeffrey Kightlinger, General Manager



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## Appendix I: Water Shortage Contingency Plan

# Water Shortage Contingency Plan



**Eastern Municipal Water District**

**June 2021**

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## Introduction

This document represents the Water Shortage Contingency Plan (WSCP) adopted by Eastern Municipal Water District (EMWD). The document follows the structure recommended in guidance documents prepared by the California Department of Water Resources (DWR). The numbering of Sections 1 through 12 corresponds with the numbered sections in the UWMP Guidebook.

Recognizing the need to preserve and protect public health and safety, EMWD's WSCP applies regulations and restrictions on the delivery and consumption of potable outdoor and indoor water use during water shortages. EMWD's WSCP, originally adopted by ordinance, is now Article 10 to Title 5 of EMWD's Administrative Code. A draft revision of Article 10 to reflect the changes incorporated in this document is attached to this WSCP.

The WSCP is based on the following priorities:

- Public safety, health and welfare
- Sustaining economic vitality
- Quality of life

Restrictions are structured to protect the safety, health and welfare of the public and minimize the impact a water shortage may have on the local economy and quality of life. This is done mainly through the use of EMWD's allocation-based tiered rate structure, focusing on those customers with wasteful behaviors first and then targeting other customers as a shortage becomes more severe.

This plan addresses actions that EMWD would take as a wholesale supplier and as a retail supplier. EMWD is a member agency of the Metropolitan Water District of Southern California (Metropolitan) and receives imported water supplies from Metropolitan. Wholesale customers are allocated water using the formula and methodology in Metropolitan's Water Supply Allocation Plan (WSAP).

For retail customers, over ninety percent of EMWD's customers are either single-family residential, multi-family residential or landscape customers. These customers are subject to allocation-based tiered rates. There are four tiers in EMWD's rate structure; the first two tiers apply to indoor and outdoor use respectively, the third tier is applied to water use up to 50 percent above the Tier 1 and 2 budgets, and Tier 4 is applied to any water use in excess of Tier 3. In times of water shortage, the thresholds for Tiers 2 and 3 are reduced as shortage levels increase. Under the most extreme shortage conditions, no outdoor water use is allowed, and indoor water use may be restricted up to 50 percent.

Commercial, Industrial, and Institutional (CII) and agricultural customers must also reduce demand during periods of shortage. These customers face event-driven penalties and could face fines if found violating water use restrictions.

EMWD has prepared this plan and is adopting it alongside its 2020 Urban Water Management Plan (UWMP). The WSCP is a separate document from the UWMP. EMWD will continue to monitor the effectiveness of this WSCP, and if the need arises to modify this plan, EMWD will follow the update procedures described in Section 12.

## 1.0 Water Supply Reliability Analysis

This section provides a summary of the supply reliability analysis presented in the UWMP and highlights key issues that could create a shortage condition.

EMWD's supplies are highly reliable and have proven to be resilient even under drought conditions. Therefore, under a typical dry year scenario, EMWD would expect little to no impact to the availability of its local supplies. However, EMWD may increase deliveries from Metropolitan to account for any increases in demand resulting from the hydrologic conditions. After several dry years, Metropolitan could face reduced supply capabilities during the next five years. If a shortage occurs, Metropolitan may implement its water supply allocation plan for member agencies in order to preserve storage reserves. The WSAP charges significantly higher rates for water deliveries over the allocated amount for each member agency but does not physically limit the volume of deliveries that a member agency may take.



The full reliability analysis is presented in Chapter 7 of EMWD's UWMP. Although that analysis demonstrates that the region's urban water supply is reliable, there are potential issues that could create a shortage condition. These include:

- An extended drought more severe than historic events, possibly impacted by climate change
- A natural disaster or a malevolent act that disrupts delivery of imported water from the Colorado River or the SWP
- An extended and wide-spread power outage
- Reductions in imported water supply due to environmental restrictions related to endangered species or habitat protection
- Identification of a currently unregulated contaminant that affects the region's groundwater supply
- Regulatory mandates to reduce water use

Water shortage contingency planning provides a way to plan for these risks and anticipate actions that should be implemented to manage the impacts. This plan describes how EMWD intends to respond to such shortage events.

## **2.0 Annual Water Supply and Demand Assessment Procedures**

EMWD will be required to prepare an Annual Water Supply and Demand Assessment, referred to by DWR as the Annual Assessment, and submit it to DWR each year, beginning July 1, 2022. The Annual Assessment is intended to meet requirements of Water Code Section 10632.1 and present an assessment of the likelihood of a water shortage occurring during the next 12 months. This section of the WSCP outlines the procedures that EMWD will use to prepare the Annual Assessment. The procedures defined in this section will allow EMWD to follow a consistent annual procedure for making the determination of whether to activate the WSCP.

The procedures for declaring a shortage are identified in Section 5.1004 of EMWD's administrative code, which states that,

EMWD's General Manager shall request the Board of Directors to authorize and implement the provisions of the Plan. The request shall be made at a regular or special meeting of the Board of Directors, to implement provisions of the Plan. The Board of Directors has the authority to initiate or terminate the water shortage contingency measures described in this Plan.

### **2.1 Decision Making Process**

EMWD will use the following procedures in preparing the Annual Assessment.

1. In February and March of each year, EMWD staff will review available data related to anticipated supplies and demands. EMWD staff will coordinate with Metropolitan and with EMWD's wholesale customers on the regional outlook for water supply reliability.
2. In May of each year, EMWD staff will present a recommendation to the EMWD Board of Directors for approval. The board will approve the determination of supply reliability and will take actions to implement shortage response actions, if needed. The assessment and recommendations for implementation of shortage response actions will be posted publicly in EMWD's board agenda for the meeting.
3. In June of each year, EMWD will prepare the Annual Assessment with required information and submit it to DWR.

The timeline may be modified to reflect updated information available from Metropolitan. Metropolitan will be preparing its own Annual Assessment each year. The draft WSCP published by Metropolitan describes a process of preparing the Annual Assessment for approval by the Metropolitan Board of Directors in June of each year. EMWD staff would seek to make EMWD's Annual Assessment reflective of the information provided by Metropolitan.

## 2.2 Data and Methodologies

This section describes the data and methodologies that will be used by EMWD to evaluate water system reliability for the coming year, while considering that the year to follow could be dry.

### 2.2.1 Evaluation Criteria

EMWD will rely on locally applicable criteria for each Annual Assessment. These criteria will include the annual reports prepared to describe conditions in the groundwater basin and annual updates provided by Metropolitan on its supply reliability.

### 2.2.2 Water Supply

EMWD's anticipated supplies will be quantified for the near-term future, and descriptive text will be used to note any anticipated reductions in supply.

### 2.2.3 Unconstrained Customer Demand

EMWD will prepare an estimate of unconstrained demand (as the term is used in Water Code Section 10632(a)(2)(B)(i)). The estimated demand will be calculated using the demand projection approach described in the UWMP, in combination with updated data for connections, climate, changes in land use, and recent water usage history.

### 2.2.4 Planned Water Use for Current Year Considering Dry Subsequent Year

EMWD will describe the anticipated use of water supplies for the coming year, with the anticipation that the following year will be dry. The supplies will be characterized in a manner consistent with the UWMP, in combination with updated data for climate and recent observations.

### 2.2.5 Infrastructure Considerations

EMWD will describe any potential infrastructure constraints on the ability to deliver adequate supplies to meet expected customer demands in the coming year. EMWD will show that its system of wells, desalters, filtration plants, pipelines, pump stations, and storage tanks have adequate capacity to deliver the anticipated demands. EMWD will describe any anticipated capital projects that are intended to address constraints in production, treatment, or distribution.

### 2.2.6 Other Factors

EMWD will describe any specific locally applicable factors that could influence or disrupt supplies. EMWD will also describe unique local considerations that are considered as part of the annual assessment.

## 3.0 Six Standard Water Shortage Levels

Since the preparation of the 2015 UWMP, the California Water Code (CWC) has been amended to define six standard shortage levels. The six standard water shortage levels correspond to progressively increasing estimated shortage conditions (up to 10-, 20-, 30-, 40-, 50- percent, and greater than 50-percent shortage compared to the normal reliability condition). If an agency elects to retain an existing set of shortage levels from its previous WSCP, then the document must provide a crosswalk to relate the existing stages to the six standard stages. This crosswalk is shown in Table 3.

EMWD's plan addresses these stages in actions it will take as a wholesale supplier and as a retail supplier.

### 3.1 Wholesale Shortage Levels

During mandatory water shortage stages, wholesale customers will be required to reduce their retail water demands such that they are equivalent to EMWD's retail water demand reductions. If Metropolitan

imposes limited supply allocations on EMWD and other member agencies, supply to EMWD's wholesale customers will be allocated using the formula and methodology based on Metropolitan's WSAP. EMWD will establish base period demands and then adjust them for growth and changes in local supply.

At each stage, wholesale customers will not experience shortages on the wholesale level that are greater than one-and-a-half times the percentage shortage of regional water supplies. The wholesale customers will also not face a retail shortage less than the regional shortage. Credits will be given for conservation and investment in local supplies. Penalty rates apply for use over allocations.

As a wholesale supplier, EMWD will maintain consistency with Metropolitan's plan where possible. The stages in Metropolitan's 2020 WSCP are shown in Table 1.

The stages for EMWD's wholesale plan are shown in Table 2.

**Table 1. Metropolitan Shortage Stages and Response Actions**

Shortage Stage	Shortage Percentage	Shortage Response	Effectiveness
1	Up to 10%	Take from Storage Execute Flexible Supplies Implement Demand Reduction Implement Water Supply Allocation Plan	<ul style="list-style-type: none"> <li>• 0 to 100% met by Storage</li> <li>• 0 to 100% met by Flexible Supplies</li> <li>• 0 to 20% of total retail water use met by voluntary Demand Reduction</li> <li>• 0 to 50% of total base demand met by WSAP supply allocation</li> </ul>
2	10% to 20%	Take from Storage Execute Flexible Supplies Implement Demand Reduction Implement Water Supply Allocation Plan	<ul style="list-style-type: none"> <li>• 0 to 100% met by Storage</li> <li>• 0 to 100% met by Flexible Supplies</li> <li>• 0 to 20% of total retail water use met by voluntary Demand Reduction</li> <li>• 0 to 50% of total base demand met by WSAP supply allocation</li> </ul>
3	20% to 30%	Take from Storage Execute Flexible Supplies Implement Demand Reduction Implement Water Supply Allocation Plan	<ul style="list-style-type: none"> <li>• 0 to 100% met by Storage</li> <li>• 0 to 100% met by Flexible Supplies</li> <li>• 0 to 20% of total retail water use met by voluntary Demand Reduction</li> <li>• 0 to 50% of total base demand met by WSAP supply allocation</li> </ul>
4	30% to 40%	Take from Storage Execute Flexible Supplies Implement Demand Reduction Implement Water Supply Allocation Plan	<ul style="list-style-type: none"> <li>• 0 to 100% met by Storage</li> <li>• 0 to 100% met by Flexible Supplies</li> <li>• 0 to 20% of total retail water use met by voluntary Demand Reduction</li> <li>• 0 to 50% of total base demand met by WSAP supply allocation</li> </ul>
5	40% to 50%	Take from Storage Execute Flexible Supplies Implement Demand Reduction Implement Water Supply Allocation Plan	<ul style="list-style-type: none"> <li>• 0 to 100% met by Storage</li> <li>• 0 to 100% met by Flexible Supplies</li> <li>• 0 to 20% of total retail water use met by voluntary Demand Reduction</li> <li>• 0 to 50% of total base demand met by WSAP supply allocation</li> </ul>
6	More than 50%	Take from Storage Execute Flexible Supplies Implement Demand Reduction Implement Water Supply Allocation Plan	<ul style="list-style-type: none"> <li>• 0 to 100% met by Storage</li> <li>• 0 to 100% met by Flexible Supplies</li> <li>• 0 to 20% of total retail water use met by voluntary Demand Reduction</li> <li>• 0 to 50% of total base demand met by WSAP supply allocation</li> </ul>

**Table 2. Wholesale Water Shortage Contingency Plan Levels (DWR Table 8-1)**

Shortage Level	Percent Shortage Range	Water Shortage Condition
1	Up to 10%	Supply watch. Customers will be asked to reduce up to 10% of demand voluntarily.
2	Up to 25%	Supply alert. Customers will be asked to reduce 25% of demand voluntarily.
3	Up to 25%	Mandatory Waste Reduction. At this stage efforts will be focused on a mandatory reduction of excessive water use.
4	Up to 50%	Mandatory Outdoor Reduction. At this stage efforts will be focused on mandatory reduction of outdoor water use.
5	>50%	Severe shortage or catastrophic incident  Mandatory Indoor Reduction. At this stage efforts will be focused on mandatory reduction of indoor water use. This stage would only be implemented in response to a catastrophic loss of supplies requiring a 50 percent or more reduction in demand.
NOTES: EMWD has built flexibility into its WSCP. Stages are not directly tied to water supply conditions. The WSCP can be implemented as needed to meet a reduction in demand or to respond to other conditions.		

EMWD’s previous WSCP was updated in 2019 and included five stages. EMWD has elected to retain its five shortage stages and provide a crosswalk to relate the existing stages to the six standard shortage levels. Because the existing Levels 3, 4, and 5 include sub-stages, EMWD will be able to better align its shortage levels and response actions with the six standard levels. This crosswalk is shown in Table 3.

**Table 3. Crosswalk from EMWD Stages to Six Standard Levels**

EMWD Shortage Stage	Supply Condition/Shortage	Percent Shortage Range		DWR Standard Level	Shortage Level
1	Supply Watch	Up to 10%		1	<= 10%
2	Supply Alert	Up to 25%		2	10 – 20%
3	Mandatory Waste Reduction	Up to 25%		3	20 – 30%
4	Mandatory Outdoor Reduction	Up to 50%		4	30 – 40%
				5	40 – 50%
5	Severe Shortage or Catastrophic Incident	> 50%		6	> 50%

### 3.2 Retail Shortage Levels

The WSCP limits water demand during times of shortage in five stages. These stages can be triggered when there is water deficiency caused by limitations on supply or by limitations on EMWD’s delivery system. The plan shall be implemented in case of a long or short-term water deficiency, or in case of an emergency water shortage.

EMWD will implement an appropriate stage based on current water conditions such as:

- EMWD water supply conditions and storage levels
- Statewide water supply conditions
- Local water supply and demand conditions
- Metropolitan WSAP implementation or other actions requiring a reduction in water demand
- Actions of surrounding agencies

Higher stages will be implemented as shortages continue and/or if customer response does not bring about desired water savings.

When implementation of the WSCP is triggered by anticipated limitations in supply or delivery, EMWD’s General Manager shall request the Board of Directors to authorize and implement the provisions of the WSCP. The request shall be made at a regular or special meeting of the Board of Directors, to implement provisions of the WSCP.

The Board of Directors has the authority to initiate or terminate the water shortage contingency measures described in the WSCP. When a water shortage emergency occurs, the WSCP authorizes the General Manager to declare the extent of a potable water shortage emergency and to implement the appropriate water shortage contingency measures.

EMWD’s retail shortage levels are identified in Table 4. The first two stages of the WSCP are voluntary, while the successive stages are mandatory and include sub-stages to reflect changes to the tiered rate structure.

**Table 4. Retail Water Shortage Contingency Plan Levels (DWR Table 8-1)**

Shortage Level	Percent Shortage Range	Water Shortage Condition
1	Up to 10%	Supply watch. Customers will be asked to reduce up to 10% of demand voluntarily.
2	Up to 25%	Supply alert. Customers will be asked to reduce 25% of demand voluntarily.
3	Up to 25%	Mandatory Waste Reduction. At this stage efforts will be focused on a mandatory reduction of excessive water use.
4	Up to 50%	Mandatory Outdoor Reduction. At this stage efforts will be focused on mandatory reduction of outdoor water use.
5	>50%	Severe shortage or catastrophic incident  Mandatory Indoor Reduction. At this stage efforts will be focused on mandatory reduction of indoor water use. This stage would only be implemented in response to a catastrophic loss of supplies requiring a 50 percent or more reduction in demand.
NOTES: EMWD has built flexibility into its WSCP. Stages are not directly tied to water supply conditions. The WSCP can be implemented as needed to meet a reduction in demand or to respond to other conditions. Levels 3 through 5 include three sub-stages each.		

Each level in Table 4 represents an anticipated reduction in the supplies that would normally be available to the agency. These supply reductions could be the result of a variety of potential causes including natural forces, system component failure or interruption, regulatory actions, contamination, or any combination thereof.

The stages involve voluntary and mandatory conservation measures and restrictions, depending on the causes, severity, and anticipated duration of the water supply shortage. The locally appropriate shortage response actions that would be taken at each level to address the resulting gap between supplies and demands are described in the following section.

EMWD’s process for initiating or terminating stages is outlined in Section 5.1007 of EMWD’s Administrative Code, which notes that,

The General Manager will recommend the appropriate stage of response to a water shortage based on the best information available at the time. Conditions that will be considered include:

- EMWD water supply conditions and storage levels
- Statewide water supply conditions
- Local water supply and demand conditions
- Metropolitan Water Supply Allocation Plan implementation or other actions requiring a reduction in water demand
- Actions by surrounding agencies

As water supply conditions either deteriorate or improve, the General Manager will return to the Board to revise the appropriate stage of response. It shall not be necessary to implement any stage prior to another; the stages may be implemented in any reasonable order.

In the event the State or local agencies, through executive action, emergency legislation or other actions, impose conditions, requirements, or procedures that are not included in the EMWD water shortage Contingency Plan, the General Manager is authorized to implement such measures as are reasonably required to bring EMWD’s actions in each stage into functional conformity with such conditions, requirements, or procedures.

The actions in each stage are identified in Section 5.1009 of EMWD's administrative code and are summarized in Table 5. Table 5 is not a required element of the WSCP but is presented as a consolidated summary of the actions identified in the EMWD administrative code.



**Table 5. Summary of Stages and Actions**

Stage	1. Supply Watch	2. Supply Alert	3. Mandatory Waste Reduction	4. Mandatory Outdoor Reduction	5. Mandatory Indoor Reduction
<b>Description</b>	At this stage, efforts will be focused on encouraging voluntary reduction of up to 10 percent. Customers can reduce demand by following the water use efficiency requirements of Section 5, Article 6 - Water Conservation of the Administrative Code. Other actions may be encouraged as appropriate.	At this stage efforts will be focused on a voluntary reduction of up to 25 percent. Customers can reduce demand by following the water use efficiency requirements of Section 5, Article 6 - Water Conservation of the Administrative Code.	At this stage, efforts will be focused on a mandatory reduction of excessive water use. Customers can reduce demand by following the conserving actions detailed in Stages 1 and 2.	At this stage efforts will be focused on a mandatory reduction of outdoor water use.  Customers can reduce demand by following the conserving actions required in Stages 1 through 3 and limiting watering or irrigating of lawn, landscape or other vegetated areas with sprinklers to the following schedule:  a) June through August – A maximum of two days a week; and b) September through May – A maximum of one day a week.	At this stage efforts will be focused on a mandatory reduction of indoor water use. This stage would only be implemented in response to a catastrophic loss of supplies requiring a 50 percent or more reduction in demand.
<b>Actions</b>		Voluntary customer actions could include the following:  a) Reduce watering or irrigating of lawn, landscape or other vegetated areas with sprinklers by one day a week; b) All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system repaired within 48 hours; c) Refrain from filling or re-filling of ornamental lakes or ponds; and d) Refrain from using potable water to wash or clean a vehicle, including but not limited to, any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not.	For tiered customers:  a) Stage 3a: No variances or adjustments will be allowed for filling swimming pools, establishing landscape or leaks that are not repaired within 48 hours; b) Stage 3b: Excessive tier budgets (Tier 3 Budgets for residential customers, Tier 2 Budgets for non-residential) will be decreased by up to 50 percent; and c) Stage 3c: Excessive tier budgets (Tier 3 Budgets for residential customers, Tier 2 Budgets for non-residential) will be decreased by up to 100 percent.  Observation of any water waste in opposition to restrictions listed in Section 5, Article 6 - Water Conservation of the Administrative Code or under this or any previous stage of the Plan are subject to the following penalties:  a) For multi-family, commercial, institutional, industrial, agricultural, and landscape accounts: (1) For the first violation, the District shall issue a written notice of fact of such violation to the Customer; (2) For a second violation a surcharge in the amount of \$100.00 shall be added to the Customer's water bill; (3) For a third violation a surcharge in the amount of \$200.00 shall be added to the Customer's water bill; and (4) For a fourth and any subsequent violation a surcharge of \$300.00 shall be added to the Customer's water bill. b) For single-family residential accounts: (1) For the first violation, the District shall issue a written notice of fact of such violation to the Customer; (2) For a second violation a surcharge in the amount of \$25.00 shall be added to the Customer's water bill; (3) For a third violation a surcharge in the amount of \$50.00 shall be added to the Customer's water bill; and (4) For a fourth and any subsequent violation a surcharge of \$100.00 shall be added to the Customer's water bill.	For tiered customers:  a) Stage 4a: Outdoor water budgets will be decreased by 10 percent; b) Stage 4b: Outdoor water budgets will be decreased by up to 50 percent; and c) Stage 4c: Outdoor water budgets will be decreased by up to 100 percent and the irrigation of non-functional turf by multi-family residential, commercial, industrial, and institutional customers is prohibited.  Observation of any water waste in opposition to restrictions listed in Section 5, Article 6 - Water Conservation of the Administrative Code or under this or any previous stage of the Plan, or the irrigation of non-functional turf by multi-family residential, commercial, industrial, and institutional customers when the District is in Stage 4c or higher are subject to the following penalties:  a) For multi-family, commercial, institutional, industrial, agricultural, and landscape accounts: (1) For the first violation, the District shall issue a written notice of fact of such violation to the Customer; (2) For a second violation a surcharge in the amount of \$200.00 shall be added to the Customer's water bill; (3) For a third violation a surcharge in the amount of \$400.00 shall be added to the Customer's water bill; and (4) For a fourth and any subsequent violation a surcharge of \$600.00 shall be added to the Customer's water bill. b) For single-family residential accounts: (1) For the first violation, the District shall issue a written notice of fact of such violation to the Customer; (2) For a second violation a surcharge in the amount of \$50.00 shall be added to the Customer's water bill; (3) For a third violation a surcharge in the amount of \$100.00 shall be added to the Customer's water bill; and (4) For a fourth and any subsequent violation a surcharge of \$200.00 shall be added to the Customer's water bill.	For tiered customers:  a) Stage 5a: Indoor water budgets will be decreased by 10 percent; b) Stage 5b: Indoor water budgets will be decreased by up to 30 percent; and c) Stage 5c: Indoor water budgets will be decreased by up to 50 percent.  Commercial, Industrial, Institutional, Agricultural customers and any other customer without a water budget will be given a water budget based on historical water use. Allocations will be decreased in stages and the current Tier 4 rate will be applied to any use above the decreased allocation.  a) Stage 5a: Budgets will be decreased by 10 percent; b) Stage 5b: Budgets will be decreased by up to 30 percent; and c) Stage 5c: Budgets will be decreased by up to 50 percent.  Restrictions and penalties implemented in earlier stages shall also remain in effect.
<b>Enforcement</b>	Demand reduction will be encouraged through the ongoing enforcement listed in Section 5, Article 6 - Water Conservation of the Administrative Code including EMWD's water budget based tiered rate and penalties for run off.	Demand reduction will be encouraged through the ongoing enforcement listed in Section 5, Article 6 - Water Conservation of the Administrative Code including EMWD's water budget based tiered rate and penalties for run off.	Demand reduction will be enforced through changes to EMWD's water budget-based tiered rate structure and observation-based penalties:	Demand reduction will be enforced through changes to EMWD's water budget based tiered rate structure and observation-based penalties:	Demand reduction will be enforced through changes to EMWD's water budget based tiered rate structure and penalties for run off as detailed in Section 5, Article 6 - Water Conservation of the Administrative Code.

## 4.0 Shortage Response Actions

This section describes the shortage response actions that would be taken by EMWD at each shortage level. These actions have been grouped into categories including:

- Supply Augmentation Actions
- Demand Reduction Actions and Mandatory Use Restrictions
- Operational Changes

### 4.1 Supply Augmentation

For long-range planning, EMWD continues to evaluate opportunities for transfers, exchanges, and other purchases of imported water to increase supply reliability. These programs are described in the supply sections of the UWMP.

Metropolitan’s WSCP identifies actions it has taken to be in a position to augment supplies during dry periods. These actions are summarized in Metropolitan’s WSCP.

EMWD has not identified specific supply augmentation actions that would be taken to address a short-term water shortage. The standard categories of supply augmentation actions are shown in Table 6.

**Table 6. Supply Augmentation Actions (DWR Table 8-3)**

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is this going to reduce the shortage gap?	Additional Explanation or Reference
	Transfers		
	Exchanges		
	Other purchases		
	New recycled water		
	Rain seeding		
	Stored emergency supply		
	Other actions (describe)		
NOTES:			

### 4.2 Demand Reduction Actions and Mandatory Use Restrictions

The demand reduction actions that will be implemented at each shortage level are shown in Table 7. The format of Table 7 is based on the standard submittal table defined by DWR. The column titled, “Penalty, Charge, or Enforcement” is a Yes/No field to characterize whether there is a penalty, charge, or enforcement action associated with implementing the demand reduction action. This field is a required field in the standard submittal table defined by DWR.

EMWD utilizes consumption reduction methods to reduce demands for potable water within its service area. EMWD’s methods include supplementing its water conservation program during WSCP implementation and implementing its allocation-based tiered rate billing structure by progressively reducing allocations for tiers as higher stages of the WSCP are implemented. Consumption reduction methods that can be used in EMWD’s service area are summarized in Table 7.

**Table 7. Demand Reduction Actions (DWR Table 8-2)**

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1-5	Expand Public Information Campaign	N/A	EMWD will continue to implement its conservation program and may supplement programs during WSCP implementation.	No
1	Other - Prohibit use of potable water for washing hard surfaces	N/A	Except for health or sanitary reasons	Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	N/A	Repair leaks within 48 hours of occurrence	Yes
1	Landscape - Limit landscape irrigation to specific times	N/A	Only between 9:00 p.m. and 6:00 a.m. except when: -manually watering -establishing new landscape -temperatures are predicted to fall below freezing -it's for very short periods of time to adjust or repair an irrigation system	Yes
1	Landscape - Prohibit certain types of landscape irrigation	N/A	Unattended irrigation systems using potable water are prohibited unless they are limited to no more than fifteen (15) minutes watering per day, per station. This limitation can be extended for: -Very low flow drip irrigation systems when no emitter produces more than two (2) gallons of water per hour -Weather based controllers or stream rotor sprinklers that meet a 70% efficiency	Yes
1	Landscape - Restrict or prohibit runoff from landscape irrigation	N/A	Avoid over watering or watering of hardscape and the resulting runoff	Yes
1	Other water feature or swimming pool restriction	N/A	Decorative fountains must be equipped with a recycling system	Yes
1	Other	N/A	Allowing water to run while washing vehicles is prohibited	Yes
1	Other	N/A	Install new landscaping with low-water demand trees and plants. New turf shall only be installed for functional purposes	Yes
1	Landscape - Other landscape restriction or prohibition	N/A	Watering during rain, or within 48 hours after measurable rain, is prohibited	Yes
2	Landscape - Other landscape restriction or prohibition	Medium	Reduce watering or irrigating of lawn, landscape or other vegetated areas with sprinklers by one day a week	Yes
2	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Medium	All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system repaired within 72 hours	Yes
2	Other water feature or swimming pool restriction	Low	Refrain from filling or re-filling of ornamental lakes or ponds	Yes

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
2	Other	Medium	Refrain from using potable water to wash or clean a vehicle, including but not limited to, any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not	Yes
3	Implement or Modify Drought Rate Structure or Surcharge	High	Stage 3 progressively reduces the tier 3 allocation. Any water used over the allocations for tiers 1-3 is charged at the tier 4 rate <sup>2</sup> .	Yes
3a	Other	Medium	No variances or adjustments will be allowed for filling swimming pools, establishing new landscapes or leaks that are not repaired within 48 hours	Yes
3b	Implement or Modify Drought Rate Structure or Surcharge	High	Tier 3 (Excessive Use) water budget decreased by 50%	Yes
3c	Implement or Modify Drought Rate Structure or Surcharge	High	Tier 3 (Excessive Use) water budget decreased by 100%	Yes
4	Implement or Modify Drought Rate Structure or Surcharge	High	Stage four eliminates the tier 3 allocation and progressively reduces the tier 2 allocation. Any water used over the allocations for tiers 1-2 is charged at the tier 4 rate <sup>2</sup> .	Yes
4	Landscape - Other landscape restriction or prohibition	Medium	Watering or irrigating of lawn, landscape, or other vegetated areas with sprinklers should be limited to the following schedule: -June – August: A maximum of two days a week -September – May: A maximum of one day a week	Yes
4a	Implement or Modify Drought Rate Structure or Surcharge	High	Tier 2 (Outdoor Use) water budget decreased by 10%	Yes
4b	Implement or Modify Drought Rate Structure or Surcharge	High	Tier 2 (Outdoor Use) water budget decreased by up to 50%	Yes
4c	Implement or Modify Drought Rate Structure or Surcharge	High	Tier 2 (Outdoor Use) water budget decreased by up to 100%	Yes
5	Implement or Modify Drought Rate Structure or Surcharge r	High	Stage 5 eliminates the tier 3 and 4 allocations and progressively reduces the tier 1 allocation. Any water used over the allocations for tiers 1 is charged at the tier 4 rate <sup>2</sup> .	Yes
5a	Implement or Modify Drought Rate Structure or Surcharge	High	Tier 1 (Indoor Use) water budget decreased by 10%	Yes
5b	Implement or Modify Drought Rate Structure or Surcharge	High	Tier 1 (Indoor Use) water budget decreased by 30%	Yes

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
5c	Implement or Modify Drought Rate Structure or Surcharge	High	Tier 1 (Indoor Use) water budget decreased by 50%	Yes
5	Implement or Modify Drought Rate Structure or Surcharge	High	CII, Agricultural, and any other customer without a water budget will be given a water budget based on historical water use, and allocations will be reduced according to the percentages listed for stages 5a-5c (up to 50 percent)	Yes
<p>Notes: EMWD has four tiers in its allocation-based tiered rate structure for residential customers. Some non-residential customers are also on an allocation-based rate structure, but these customers have only three tiers. Tier 4 usage for residential customers and Tier 3 usage for non-residential customers are classified as wasteful usage, which is defined as water use exceeding 150% of a customer’s water budget. The current wasteful rate varies across the service area but ranges from \$11.62 to \$12.75 per hundred cubic feet as of 1/1/2021</p>				

### 4.3 Operational Changes

EMWD has identified operational changes that could be made to help address a short-term gap between demands and available supplies. These include:

- Improved monitoring and analysis of customer water usage
- Reductions in flushing of hydrants and dead-end lines
- Expediting planned system improvement projects that include reduction in water loss (e.g., replacement of water mains that are experiencing higher rates of leaks and breaks)

### 4.4 Additional Mandatory Restrictions

EMWD has identified a series of restrictions that will be implemented at different shortage levels. These prohibitions are included in the demand reduction actions in Table 7.

The WSCP prohibitions and reduction methods are organized by customer groups with different limitations on each group. Stages 1 and 2 start with voluntary measures. As the water deficiency increases, measures become mandatory and are intended to lead to the needed reduction in water demand.

The WSCP targets a reduction in demand in specific tiers for single-family residential, multi-family residential and landscape customers. Table 8 summarizes the required reduction in each tier by stage.

**Table 8. Tiered-Rate Water Reduction Requirements**

Stage	Tier 1 Indoor Use	Tier 2 Outdoor Use	Tier 3 Excessive Use	Tier 4 Wasteful Use
1	Voluntary Reduction up to 10%			
2	Voluntary Reduction up to 25%			
3a	No variances or adjustments will be allowed for filling swimming pools, establishing new landscapes or leaks that are not repaired within 48 hours.			
3b			50% reduction	
3c			100% reduction	
4a		10% reduction	100% reduction	
4b		up to 50% reduction	100% reduction	
4c		up to 100% reduction	100% reduction	
5a	10% reduction	100% reduction	100% reduction	
5b	30% reduction	100% reduction	100% reduction	
5c	50% reduction	100% reduction	100% reduction	

In Stage 5, CII customers, agricultural customers and any other customer without a water budget will be assigned a water budget based on historical water use. Allocations will be decreased according to the percentages listed for Stages 5a-5c, and the current Tier 4 rate will be applied to any use above the decreased allocation value.

In order to reduce EMWD's retail demand in the case of deficiency in water supply, EMWD developed water use efficiency requirements that are to be followed at all times. Additional prohibitions on end uses are implemented at higher stages of water shortage in addition to the on-going water use efficiency requirements. As part of EMWD's WSCP, voluntary and mandatory water use reductions are expected through the on-going enforcement of the water use efficiency requirements, EMWD's water allocation-based tiered rates, and penalties for run off. The previous sections summarize the water use efficiency requirements and additional prohibitions for each stage of EMWD's WSCP. Under the most extreme deficiencies, these prohibitions would reduce demand by more than 50 percent.

#### 4.5 Emergency Response Plan

The Water Code requires that an agency's WSCP address catastrophic water shortages and plans to address them. This information can be addressed in the agency's Emergency Response Plan (ERP). Each agency's ERP can contain sensitive information related to potential vulnerabilities or impacts of natural disasters or malevolent acts. Therefore, these documents are not typically made publicly available.

EMWD is a member of the California Water/Wastewater Agency Response Network (CalWARN), which supports and promotes emergency preparedness. More information about CalWARN is available at their web site at [www.calwarn.org](http://www.calwarn.org).

EMWD's process for declaring an emergency water shortage is outlined in Section 5.1004(b) of the EMWD Administrative Code, which notes that

By adopting this Plan, the Board of Directors authorizes the General Manager to declare the extent of a potable water shortage emergency and to implement the appropriate water shortage contingency measures. The General Manager shall report such water shortage conditions and the level of response to the Board of Directors in a timely manner.

The declaration of the Board of Directors shall be made by public announcement and shall be published in a newspaper of general circulation. The declaration shall become effective immediately upon such publication.

To protect EMWD customers in the case of an emergency, EMWD has developed the Water Shortage Emergency Operations Plan (WSEOP). This plan determines the operation response to many types of emergencies. It specifies chain of command and provides the authority to respond. Elements of that response can include interdepartmental staff notification and mobilization; activation of alternative water supply sources (i.e., interagency connections), use of temporary pumping facilities; use of power generators; public notification; and activation of conservation measures. An emergency is defined as any time period when Metropolitan or EMWD facilities are incapable of supplying potable water. An emergency could be caused by a natural disaster such as an earthquake or through facility failures. The WSEOP describes the coordination required between operational staff, management, community involvement staff and other EMWD employees. In addition, communication and cooperation will be required with the community and other agencies such as the Division of Drinking Water and Metropolitan. In the event that one or more water supply sources are unavailable, remaining sources of supply will be maximized to meet demand. If needed, the WSCP could be implemented to conserve water and reduce demand. If an electrical or gas power outages occur, some of EMWD's booster facilities have backup generators. Facilities without redundant power sources may be served on a priority basis by portable generators.

EMWD's service area (retail and wholesale) is dependent on Metropolitan for approximately half of its supply. Metropolitan has prepared for emergencies using a combination of storage, facility design and redundant power sources. Emergency storage requirements are based on the potential for a major earthquake that renders major water transportation facilities out of service for six months. Assuming 100 percent of its supplies are unavailable for six months, Metropolitan has enough water storage to sustain 75 percent of normal year firm deliveries. In the event of a major power outage, water supply can be delivered by gravitational feed from recreational reservoirs, including Diamond Valley Lake Reservoir. For treatment plants, Metropolitan has backup power generators in place in case of electrical outages. Additional information about addressing catastrophic supply interruption can be found in Metropolitan's 2020 UWMP.

#### 4.6 Seismic Risk Assessment and Mitigation Plan

Water Code Section 10632.5 requires agencies to assess seismic risk to water supplies as part of their WSCP. The code also requires a mitigation plan for managing seismic risks.

In lieu of conducting their own seismic risk assessment, which can be a lengthy process, suppliers can comply with the Water Code requirement by submitting the relevant local hazard mitigation plan or multi-hazard mitigation plan.

EMWD participated in the development of the Riverside County Local Hazard Mitigation Plan, which was updated in 2018. The Riverside County LHMP is available on the Riverside County web site at <https://rivcoemd.org/LHMP>.

The Riverside County LHMP includes an assessment of the region's vulnerability to a broad range of hazards, including earthquakes. It also describes mitigation strategies and actions to reduce the impacts of a seismic event. The other participating agencies continue to include seismic risk assessment in their planning process for system improvements.

EMWD has also prepared a 2017 Hazard Mitigation Plan to describe a risk assessment and mitigation plan for seismic events in its service area.

#### 4.7 Shortage Response Action Effectiveness

EMWD has estimated the effectiveness of shortage response actions in terms of relative impact on reducing the gap between expected supplies and demands. These estimates were developed using industry resources and observations from recent operating history at the agency. These estimates have been included in Table 7.



## 5.0 Communication Protocols

Timely and effective communication is a key element of WSCP implementation. EMWD will need to inform customers, the general public, and other government entities of WSCP actions taken during a water shortage (either one derived from the Annual Assessment, an emergency, or catastrophic event).

EMWD works closely with Metropolitan and neighboring water agencies in implementing communication strategies during water shortages.

The communication protocols to be used by EMWD at each shortage level are summarized in Table 9.

**Table 9. Communication Protocols**

Water Shortage Level	Typical Response Actions	Communications Protocols and Processes
1	Limit landscape irrigation to specific times	Postings on web site
2	Reduce watering or irrigating of lawn, landscape, or other vegetated areas with sprinklers by one day a week	Outreach through social media
3	Implement or Modify Drought Rate Structure or Surcharge	Bill inserts, bill messages, letters to customers, cable TV slides, emails to customers.
4	Watering or irrigating of lawn, landscape, or other vegetated areas with sprinklers should be limited to the following schedule: -June – August: A maximum of two days a week -September – May: A maximum of one day a week	Door hangers, regional campaign utilizing billboard advertisements, ad placements
5	Implement or Modify Drought Rate Structure or Surcharge	Direct contacts with customers
Notes: Communications protocols and processes are cumulative in nature.		

Section 5.1002 of the EMWD Administrative Code notes that,

EMWD will periodically provide the public with information about the Plan, including conditions under which each stage of the Plan is to be initiated or terminated and the conservation response measures to be implemented in each stage. This information will be provided by means of public events, website, press releases, bill inserts, etc.

Section 5.1008 of the EMWD Administrative Code notes that,

When EMWD determines that a potable water shortage condition exists, any or all of the following notification procedures may be implemented:

- (a) Notify the general public stakeholders, elected officials and other key decision-makers regarding the situation, actions to be taken, goals customers are intended to achieve, and how these actions will be implemented.
- (b) The public at large will be informed of the situation and actions EMWD will be taking. Communications will occur through any of the following: billing inserts, special mailings, telephone contact, e-mail, social media, roadway signage, water conservation booths, and other booths in the community, speaker's bureau, community association meetings, newsletters, and education programs, etc. Literature appropriate to the drought circumstance will be provided



regarding the potable water shortage condition, conservation methods, and water-savings devices.

(c) Use of all forms of media will be employed. This would include public service announcements on radio and cable television, social media as well as earned media and advertisements in local newspapers.

(d) EMWD's web site, [www.emwd.org](http://www.emwd.org), will be the central location for messaging and customer communications.

## 6.0 Compliance and Enforcement

This section describes how EMWD will ensure compliance with and enforce provisions of the WSCP.

### 6.1 Wholesale

Section 5.1011 of the EMWD Administrative Code notes that,

During mandatory water shortage stages, wholesale customers will be required to reduce their retail water demand equivalent to EMWD's retail water demand reduction. If Metropolitan has limited supply allocations to EMWD and other member agencies; supply to wholesale customers may be allocated using a formula and methodology based on the Metropolitan Water Supply Allocation Plan.

Potential penalties for not reducing demand could be up to 4 times the Metropolitan Tier 2 rate.

### 6.2 Retail

For Stages 1 and 2 of the WSCP, demand reduction is voluntary; but it will be encouraged through the on-going enforcement of EMWD's water budget based tiered rates and penalties for runoff. Stage 3 of the WSCP is focused on a mandatory reduction of excessive water use through following the conserving actions detailed in Stages 1 and 2. Beginning with Stage 3, event-driven penalties can be imposed for violating any of the restrictions in the WSCP.

Demand reductions will be enforced through changes to EMWD's water budget based tiered rate structure and observation-based penalties. Violations of the water runoff requirement are cumulative over a 12-month period. Table 10 lists penalties for event driven restrictions.

### 6.3 Penalties

The penalties for non-compliance imposed by EMWD are summarized in Table 10.

**Table 10. Event-Driven Penalties and Charges**

Stage	Customer Category	First Violation	Second Violation	Third Violation	Fourth and Subsequent Violations
3	Single-Family	Written Notice	\$25 Fine	\$50 Fine	\$100 Fine
	Multi-Family, CII, Agricultural, and Landscape	Written Notice	\$100 Fine	\$200 Fine	\$300 Fine
4-5	Single-Family	Written Notice	\$50 Fine	\$100 Fine	\$200 Fine
	Multi-Family, CII, Agricultural, and Landscape	Written Notice	\$200 Fine	\$400 Fine	\$600 Fine

Any funds collected from penalties will be dedicated to funding EMWD's conservation programs.

## 6.4 Appeals and Exemption Process

This section describes the appeals and exemption processes. Where feasible, specific exemptions can be identified and defined. Where not feasible, the process to appeal or obtain an exemption should be detailed.

Section 5.1010 of the EMWD Administrative Code notes that,

All variance requests and appeals will be processed according to Section 5, Article 6 – Water Conservation of the Administrative Code.

## 7.0 Legal Authorities

This section describes the legal authorities that the agency relies upon to implement the shortage response actions and the associated enforcement actions.

EMWD's Administrative Code provides it with the legal authority to implement the WSCP. The Water Shortage Contingency Plan is portrayed in Chapter 5, Article 10 of the Administrative Code. A draft of Article 10 is attached to this document.

In accordance with Water Code Chapter 3 (commencing with Section 350) of Division 1 general provisions regarding water shortage emergencies, EMWD shall declare a water shortage emergency in the event of a catastrophic interruption in supply.

EMWD shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency under California Government Code, California Emergency Services Act (Article 2, Section 8558). Including a list of and contacts for all cities or counties for which the Supplier provides service in the WSCP, along with developed coordination protocols, can facilitate compliance with this section of the Water Code in the event of a local emergency as defined in subpart (c) of Government Code Section 8558.

The cities and counties in the EMWD service area are shown in Table 11.

**Table 11. City and County Coordination on Proclamation of Emergencies**

City or County	Contact
Riverside County	Emergency Management Department
City of Hemet	Emergency Services Coordinator
City of Perris	Emergency Services Coordinator
City of San Jacinto	Emergency Services Coordinator
City of Beaumont	Emergency Services Coordinator
City of Canyon Lake	Emergency Services Coordinator
City of Menifee	Emergency Services Coordinator
City of Moreno Valley	Emergency Services Coordinator
City of Murrieta	Emergency Services Coordinator
City of Perris	Emergency Services Coordinator
City of Riverside	Emergency Services Coordinator
City of San Jacinto	Emergency Services Coordinator
City of Temecula	Emergency Services Coordinator

## 8.0 Financial Consequences of WSCP

This section describes the anticipated financial consequences to EMWD of implementing the WSCP. The description includes potential reductions in revenue due to lower water sales and increased expenses associated with implementing the shortage response actions.

Potential financial impacts could include

- Reduced revenue from reduced water use
- Increased staff costs for tracking, reporting, patrolling, and enforcing restrictions
- Economic impacts associated with water-dependent businesses in the service area

Potential mitigation measures include

- Adjusting customer water budgets to increase the volume of water billed at the higher rate
- using financial reserves
- reducing operation and maintenance expenses
- deferring capital improvement projects
- reducing future projected operation and maintenance expenses
- increasing fixed readiness-to-serve charge
- increasing commodity charge and water adjustment rates to cover revenue shortfalls
- other financial management mechanisms

As a result of a water shortage or emergency situation, there may be a reduction of revenue from water sales. To protect EMWD from financial hardship in such a situation, a financial reserve account (Rate Stabilization Reserve) has been established to meet the fixed costs associated with water delivery that may not be met in the case of reduced water sales.

Potential impacts to EMWD are summarized in Table 12, and potential mitigation measures are summarized in Table 13.

**Table 12. Actions and Conditions that Impact Revenue and Expenditures**

Type	Category	Description
Reduction in Revenue	Reduced Water Sales	Water sales are approximately 40% of EMWD's annual revenue. A reduction in the demand of water by 50% would also mean a reduction in revenue from water sales of 50% leaving a shortfall of approximately 20% of EMWD annual revenue. This reduction would be offset in part by a reduction in the cost of water purchased from Metropolitan.
Increase in Expenditures	Increased Staff Cost	Staff costs for implementing the WSCP could vary depending on the stage triggered by a deficiency in water supply. Stages 1 and 2 would probably be implemented with only current staff members. Stages 3 or 4 of the plan may require additional staff to implement. The amount and level of staff will vary greatly depending on the public's response to the plan.
Increase in Expenditures	O&M Cost	Operations and maintenance cost may be minimally impacted by the implementation of the WSCP, but these costs are projected to have minimal impact on EMWD's total revenue.
Increase in Expenditures	Cost of Supply and Treatment	Cost of supply would decrease due to a decrease in demand and would offset some of the costs associated with reduced water sales.
Increase in Expenditures	Public Outreach Costs	Costs associated with informing the public about implementing the WSCP will vary based on the public's response and the stage of the plan implemented.

**Table 13 Measures to Mitigate Fiscal Consequences**

Name of Measure	Summary of Effect
Rate Adjustment	Part of the WSCP is the ability to impose a penalty rate. This could offset some of the lost revenue due to a decrease in water sales.
Reserve Policy	EMWD, as a matter of policy, keeps a reserve of funds equivalent to 90 days of operational expenses. This reserve fund could be used to mitigate revenue shortfalls.
Rate Stabilization Fund	EMWD has a rate stabilization fund available to offset increased costs and decreased sales.

## 9.0 Monitoring and Reporting

This section describes how the agency will monitor and report on implementation of the WSCP. EMWD will gather data on key water use metrics and use the data to evaluate the effectiveness of response actions in achieving their intended water use reduction purposes. EMWD will also gather data on customer compliance to evaluate the effectiveness of enforcement actions. EMWD will gather and report data at frequencies adequate to meet reporting requirements established by the State Water Resources Control Board and other government agencies.

EMWD will monitor water use by customers using its billing systems and operational control systems to monitor production and consumption. EMWD measures and determines the actual water savings made

by implementing each stage of the WSCP by relying on water meters that record the production and consumption of water. Each level of the WSCP has an associated target reduction for metered water use.

## **10.0 WSCP Refinement Procedures**

EMWD will monitor the implementation of this plan to evaluate its effectiveness as an adaptive management tool. The monitoring and reporting program described in Section 9 will provide information on the effectiveness of the shortage response actions during any shortage levels that may be invoked. If EMWD determines that the shortage response actions are not effective in producing the desired results, it will initiate a process to refine the WSCP. EMWD will consider the addition of new shortage response actions, or changing the levels when shortage response actions are implemented. Suggestions for refinements will be collected from agency staff, customers, industry experts, and the general public. EMWD will work with Metropolitan and EMWD's wholesale customers to share data and suggestions for refinement to identify opportunities to increase the effectiveness of the WSCP while maintaining alignment with other agencies in the region when possible.

EMWD will review the WSCP's description of procedures for the Annual Assessment each year while preparing the Annual Assessment and make adjustments as needed.

## **11.0 Special Water Feature Distinction**

EMWD has distinguished swimming pools and spas as recreational water features, while non-pool and non-spa water features are considered decorative water features. This distinction is used in the shortage response actions because decorative water features have the potential to use recycled water, while pools and spas (recreational water features) must use potable water for health and safety considerations.

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

EMWD adopted this WSCP with the 2020 UWMP. The UWMP and WSCP were made available for public review during May of 2021. A public hearing was held on June 30, 2021 to allow public input on the draft UWMP and the WSCP.

EMWD's board of directors considered adoption of the UWMP and the WSCP at a meeting on June 30, 2021. The resolution of adoption is included as an attachment.

This WSCP will be submitted to DWR through the WUEData portal on or before the deadline of July 1, 2021.

This WSCP will be available to the public on the agency's web site. Notice will be provided to cities and counties in the service area that the WSCP is available on the agency's web site.

If EMWD identifies the need to amend this WSCP, it will follow the same procedures for notification to cities, counties and the public as used for the UWMP and for initial adoption of the WSCP. The draft amended WSCP will be made available for public review, and the agency's governing board will hold a public hearing to receive comments on the draft amended WSCP. Once the agency's governing board adopts the amended WSCP, the amended plan will be submitted to DWR and the California State Library, and it will be made available to the public and the cities and counties in the service area through placement on the agency's web site.

## **13.0 Attachment: EMWD Code Title 5, Article 10**

### **ARTICLE 10 – WATER SHORTAGE CONTINGENCY PLAN<sup>1</sup>**

#### **5.1001 DECLARATION OF PURPOSE AND PRINCIPLES**

In accordance with Water Code 10632 requirements, Eastern Municipal Water District (EMWD) is responsible for conserving the available water supply, protecting the integrity of water supply facilities (infrastructure), and implementing a contingency plan in times of drought, supply reductions, failure of water distribution systems or emergencies. Particular emphasis is placed on use of domestic (potable) water, sanitation, fire protection, and preserving public health, welfare, and safety, in addition to minimizing the adverse impacts of water supply shortage or other water supply emergency conditions that do not include recycled water. Therefore, EMWD hereby adopts regulations and restrictions on the delivery and consumption of water use during water shortages.

#### Financial Impacts

In the event that EMWD was to implement the Water Shortage Contingency Plan(the Plan), it is recognized that the reductions in sales would impact the revenues that would normally be generated. To the extent that this reduction negatively impacts the coverage of its fixed related costs (those that are not tied to volume), EMWD will utilize its Rate Stabilization Reserve to mitigate any shortfall.

#### Priorities

The Plan is based on the following priorities:

- Public safety, healthy, and welfare
- Sustaining economic vitality
- Quality of life

#### **5.1002 PUBLIC EDUCATION**

EMWD will periodically provide the public with information about the Plan, including conditions under which each stage of the Plan is to be initiated or terminated and the conservation response measures to be implemented in each stage. This information will be provided by means of public events, website, press releases, bill inserts, etc.

#### **5.1003 COORDINATION WITH REGIONAL WATER PLANNING GROUPS**

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<sup>11</sup> Article 10 added to Title 5 by Resolution No. 2014-033 on March 26, 2014.

Coordination and implementation of this Plan are in concert with regional waterplanning groups including MWD and EMWD sub-agencies – Lake Hemet Municipal Water District, Nuevo Water Company, Rancho California Water District, and the cities of Perris, Hemet, and San Jacinto.

#### **5.1004 SHORTAGE DECLARATION PROCESS**

##### **(a) Long and Short Term Water Deficiencies**

Driven by the requirements outlined in Water Code 10632, and the demand for potable water expected to be in excess of the water supply, EMWD's General Manager shall request the Board of Directors to authorize and implement the provisions of the Plan. The request shall be made at a regular or special meeting of the Board of Directors, to implement provisions of the Plan. The Board of Directors has the authority to initiate or terminate the water shortage contingency measures described in this Plan.

##### **(b) Emergency Water Shortage Response**

By adopting this Plan, the Board of Directors authorizes the General Manager to declare the extent of a potable water shortage emergency and to implement the appropriate water shortage contingency measures. The General Manager shall report such water shortage conditions and the level of response to the Board of Directors in a timely manner.

The declaration of the Board of Directors shall be made by public announcement and shall be published in a newspaper of general circulation. The declaration shall become effective immediately upon such publication.

#### **5.1005 APPLICATION**

The water shortage contingency measures of the Plan shall apply to all persons, customers, and properties utilizing potable water provided by EMWD. The terms "person" and "customer" as used in the Plan include individuals, corporations, partnerships, agencies, associations, and all other legal entities.

#### **5.1006 DEFINITIONS**

For the purposes of this Plan, the following definitions shall apply:

Commercial, Industrial, and Institutional (CII): Includes, but is not limited to, any type of non-profit establishments, governmental entities, schools, retail establishments, hotels, motels, restaurants, car washes, and office buildings.

Conservation: Those practices, techniques, and technologies that reduce the consumptions of

water, reduce the loss or waste of water, improve the efficiency in the use of water or increase the recycling and reuse of water so that supply is conserved and made available for future or alternative uses.

Customer: Any person, company, agency, or organization using water supplied by EMWD.

EMWD: Eastern Municipal Water District.

Domestic water: Used for personal needs or for household or sanitary purposes such as drinking, bathing, cooking, sanitation, or for cleaning a residence, business, industry, or institution. Also used for landscape irrigation.

Household: Residential premises served by the customer's meter.

Landscape irrigation use: The irrigation and maintenance of landscaped areas, whether publicly or privately owned, including residential and commercial lawns, gardens, golf courses, parks, rights-of-way and medians.

Long Term Shortage: A prolonged shortage of water supplies expected to last at least a year.

Potable water: Filtered/treated water suitable for drinking; also used for household needs and landscape irrigation.

Short Term Shortage: A shortage of water supplies expected to last less than a year.

Water Shortage Contingency Plan: The Plan as defined by this document.

Water shortage: A condition in which the existing or projected potable water supply available to EMWD is not adequate to meet the water requirements of its customers. This condition may be the result of factors including, but not limited to, voluntary or mandatory curtailment of EMWD's allocation from the MWD, drought, emergency conditions or failures of water distribution systems.

Water shortage period: The period beginning on the effective date of the Board of Director's approval of implementing EMWD's Water Shortage Contingency Plan, and ending on the date of the Board of Director's finding that a potable water shortage no longer exists.

#### **5.1007 PROCESS FOR INITIATION/TERMINATION OF WATER SHORTAGE CONTINGENCY STAGES AND MODIFICATION OF ACTIONS TAKEN IN EACH STAGE<sup>2</sup>**

The General Manager will recommend the appropriate stage of response to a water shortage based on the best information available at the time. Conditions that will be

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<sup>2</sup> Section 5.1007 amended by Resolution No. 2014-098 on July 2, 2014.



considered include:

- EMWD water supply conditions and storage levels
- Statewide water supply conditions
- Local water supply and demand conditions
- MWD Water Supply Allocation Plan implementation or other actions requiring a reduction in water demand
- Actions by surrounding agencies

As water supply conditions either deteriorate or improve, the General Manager will return to the Board to revise the appropriate stage of response. It shall not be necessary to implement any stage prior to another; the stages may be implemented in any reasonable order.

In the event the State or local agencies, through executive action, emergency legislation or other actions, impose conditions, requirements, or procedures that are not included in the District water shortage Contingency Plan, the General Manager is authorized to implement such measures as are reasonably required to bring the District's actions in each stage into functional conformity with such conditions, requirements, or procedures.

#### **5.1008 PUBLIC NOTIFICATION PROCEDURES**

When EMWD determines that a potable water shortage condition exists, any or all of the following notification procedures may be implemented:

- (a) Notify the general public stakeholders, elected officials and other key decision-makers regarding the situation, actions to be taken, goals customers are intended to achieve, and how these actions will be implemented.
- (b) The public at large will be informed of the situation and actions EMWD will be taking. Communications will occur through any of the following: billing inserts, special mailings, telephone contact, e-mail, social media, roadway signage, water conservation booths, and other booths in the community, speaker's bureau, community association meetings, newsletters, and education programs, etc. Literature appropriate to the drought circumstance will be provided regarding the potable water shortage condition, conservation methods, and water-savings devices.
- (c) Use of all forms of media will be employed. This would include public service announcements on radio and cable television, social media as well as earned media and advertisements in local newspapers.

- (d) EMWD's web site, [www.emwd.org](http://www.emwd.org), will be the central location for messaging and customer communications.

### **5.1009 WATER SHORTAGE CONTINGENCY PLAN STAGES AND ENFORCEMENT<sup>3</sup>**

EMWD will implement an appropriate stage based on current water conditions. Higher stages will be implemented as shortages continue and/or if customer response does not bring about desired water savings. Restrictions, penalties, and enforcement will build on each other as higher stages are implemented.

#### Stage 1: Supply Watch

At this stage, efforts will be focused on encouraging voluntary reduction of up to 10 percent. Customers can reduce demand by following the water use efficiency requirements of Section 5, Article 6 - Water Conservation of the Administrative Code. Other actions may be encouraged as appropriate.

Demand reduction will be encouraged through the on-going enforcement listed in Section 5, Article 6 - Water Conservation of the Administrative Code including EMWD's water budget based tiered rate and penalties for run off.

#### Stage 2: Supply Alert

At this stage efforts will be focused on a voluntary reduction of up to 25 percent. Customers can reduce demand by following the water use efficiency requirements of Section 5, Article 6 - Water Conservation of the Administrative Code. Voluntary customer actions could include the following:

- (a) Reduce watering or irrigating of lawn, landscape or other vegetated areas with sprinklers by one day a week;
- (b) All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system repaired within 48 hours;
- (c) Refrain from filling or re-filling of ornamental lakes or ponds; and
- (d) Refrain from using potable water to wash or clean a vehicle, including but not limited to, any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not.

Demand reduction will be encouraged through the ongoing enforcement listed in Section 5,

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<sup>3</sup> Section 5.1009 amended by Resolution No. 2015-011 on March 18, 2015; amended by Resolution No. 2015-103 on August 19, 2015; amended by Resolution No. 2016-016 on January 20, 2016; amended by Resolution No 2017-152 on December 20, 2017.

Article 6 - Water Conservation of the Administrative Code including EMWD's water budget based tiered rate and penalties for run off.

### Stage 3: Mandatory Waste Reduction

At this stage, efforts will be focused on a mandatory reduction of excessive water use.

Customers can reduce demand by following the conserving actions detailed in Stages 1 and 2. Demand reduction will be enforced through changes to EMWD's water budget-based tiered rate structure and observation-based penalties:

For tiered customers:

- (a) Stage 3a: No variances or adjustments will be allowed for filling swimming pools, establishing landscape or leaks that are not repaired within 48 hours;
- (b) Stage 3b: Excessive tier budgets (Tier 3 Budgets for residential customers, Tier 2 Budgets for non-residential) will be decreased by up to 50 percent; and
- (c) Stage 3c: Excessive tier budgets (Tier 3 Budgets for residential customers, Tier 2 Budgets for non-residential) will be decreased by up to 100 percent.

Observation of any water waste in opposition to restrictions listed in Section 5, Article 6 - Water Conservation of the Administrative Code or under this or any previous stage of the Plan are subject to the following penalties:

- (a) For multi-family, commercial, institutional, industrial, agricultural, and landscape accounts:
  - (1) For the first violation, the District shall issue a written notice of fact of such violation to the Customer;
  - (2) For a second violation a surcharge in the amount of \$100.00 shall be added to the Customer's water bill;
  - (3) For a third violation a surcharge in the amount of \$200.00 shall be added to the Customer's water bill; and
  - (4) For a fourth and any subsequent violation a surcharge of \$300.00 shall be added to the Customer's water bill.
- (b) For single-family residential accounts:
  - (1) For the first violation, the District shall issue a written notice of fact of such violation to the Customer;

- (2) For a second violation a surcharge in the amount of \$25.00 shall be added to the Customer's water bill;
- (3) For a third violation a surcharge in the amount of \$50.00 shall be added to the Customer's water bill; and
- (4) For a fourth and any subsequent violation a surcharge of \$100.00 shall be added to the Customer's water bill.

#### Stage 4: Mandatory Outdoor Reduction

At this stage efforts will be focused on a mandatory reduction of outdoor water use.

Customers can reduce demand by following the conserving actions required in Stages 1 through 3 and limiting watering or irrigating of lawn, landscape or other vegetated areas with sprinklers to the following schedule:

- (a) June through August – A maximum of two days a week; and
- (b) September through May – A maximum of one day a week.

Demand reduction will be enforced through changes to EMWD's water budget based tiered rate structure and observation based penalties:

For tiered customers:

- (a) Stage 4a: Outdoor water budgets will be decreased by 10 percent;
- (b) Stage 4b: Outdoor water budgets will be decreased by up to 50 percent; and
- (c) Stage 4c: Outdoor water budgets will be decreased by up to 100 percent and the irrigation of non-functional turf by multi-family residential, commercial, industrial, and institutional customers is prohibited.

Observation of any water waste in opposition to restrictions listed in Section 5, Article 6 - Water Conservation of the Administrative Code or under this or any previous stage of the Plan, or the irrigation of non-functional turf by multi-family residential, commercial, industrial, and institutional customers when the District is in Stage 4c or higher are subject to the following penalties:

- (a) For multi-family, commercial, institutional, industrial, agricultural, and landscape accounts:
  - (1) For the first violation, the District shall issue a written notice of fact of such violation to the Customer;
  - (2) For a second violation a surcharge in the amount of \$200.00 shall be added to the Customer's water bill;
  - (3) For a third violation a surcharge in the amount of \$400.00 shall

- be added to the Customer's water bill; and
- (4) For a fourth and any subsequent violation a surcharge of \$600.00 shall be added to the Customer's water bill.
- (b) For single-family residential accounts:
- (1) For the first violation, the District shall issue a written notice of fact of such violation to the Customer;
- (2) For a second violation a surcharge in the amount of \$50.00 shall be added to the Customer's water bill;
- (3) For a third violation a surcharge in the amount of \$100.00 shall be added to the Customer's water bill; and
- (4) For a fourth and any subsequent violation a surcharge of \$200.00 shall be added to the Customer's water bill.

#### Stage 5: Mandatory Indoor Reduction

At this stage efforts will be focused on a mandatory reduction of indoor water use. This stage would only be implemented in response to a catastrophic loss of supplies requiring a 50 percent or more reduction in demand.

Demand reduction will be enforced through changes to EMWD's water budget based tiered rate structure and penalties for run off as detailed in Section 5, Article 6 - Water Conservation of the Administrative Code:

For tiered customers:

- (a) Stage 5a: Indoor water budgets will be decreased by 10 percent;
- (b) Stage 5b: Indoor water budgets will be decreased by up to 30 percent; and
- (c) Stage 5c: Indoor water budgets will be decreased by up to 50 percent.

Commercial, Industrial, Institutional, Agricultural customers and any other customer without a water budget will be given a water budget based on historical water use. Allocations will be decreased in stages and the current Tier 4 rate will be applied to any use above the decreased allocation.

- (a) Stage 5a: Budgets will be decreased by 10 percent;
- (b) Stage 5b: Budgets will be decreased by up to 30 percent; and
- (c) Stage 5c: Budgets will be decreased by up to 50 percent.

Restrictions and penalties implemented in earlier stages shall also remain in effect.

#### **5.1010 APPEALS PROCESS**

All variance requests and appeals will be processed according to Section 5, Article 6 –

Water Conservation of the Administrative Code.

**5.1011 WHOLESALE SUPPLY ALLOCATION AND PENALTIES**

During mandatory water shortage stages, wholesale customers will be required to reduce their retail water demand equivalent to EMWD's retail water demand reduction. If MWD has limited supply allocations to EMWD and other member agencies; supply to wholesale customers may be allocated using a formula and methodology based on the MWD Water Supply Allocation Plan.

Potential penalties for not reducing demand could be up to 4 times the MWD Tier2 rate.

**14.0 Attachment. Resolution of Adoption for WSCP**

**RESOLUTION NO. 2021-088**

**A RESOLUTION OF THE BOARD OF DIRECTORS OF EASTERN  
MUNICIPAL WATER DISTRICT ADOPTING THE WATER  
SHORTAGE CONTINGENCY PLAN**

**WHEREAS**, the Eastern Municipal Water District (“District”) is an urban water supplier with over 155,000 connections and the Urban Water Management Planning Act requires urban water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually to prepare and adopt, in accordance with prescribed requirements, a water shortage contingency plan; and

**WHEREAS**, the Urban Water Management Planning Act specifies the requirements and procedures for adopting such water shortage contingency plans; and

**WHEREAS**, the Board of Directors has duly reviewed, discussed, and considered the updates to the District’s Water Shortage Contingency Plan and has determined the Water Shortage Contingency Plan to be consistent with the Urban Management Planning Act and to be an accurate representation of the planned actions during shortage conditions for the District.

*(This space intentionally left blank)*



**NOW, THEREFORE, THE BOARD OF DIRECTORS OF EASTERN MUNICIPAL WATER DISTRICT DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:**

1. The District hereby adopts this Water Shortage Contingency Plan for submittal to the State of California.
2. This Resolution shall be effective upon its adoption.

DATED: June 30, 2021



Phillip E. Paule, President

I hereby certify that the foregoing is a full, true and correct copy of the Resolution adopted by the Board of Directors of the Eastern Municipal Water District at its meeting held on June 30, 2021.

ATTEST:



Sheila Zelaya, Board Secretary

(SEAL)



# J

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## Appendix J: Notices of Preparation and Public Hearing



January 19, 2021

Ian Achimore  
Santa Ana Watershed Project Authority  
11615 Sterling Ave  
Riverside, CA 92503  
[IAchimore@sawpa.org](mailto:IAchimore@sawpa.org)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. Achimore:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

Prior to adoption of the 2020 UWMP, EMWD will be holding a public hearing to review the updated plan and to accept comments. EMWD will provide further notice once this hearing has been scheduled. A draft of the plan will be made available for review once it has been completed, and a final UWMP will be available to the public after it has been adopted.

Should you have any questions regarding the UWMP update process, please contact me by phone at (951) 928-3777 ext. 4512, or via email at [nngg@emwd.org](mailto:nngg@emwd.org).

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

GN:ag

Board of Directors  
Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300  
T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)



January 19, 2021

Stephen Ajobiewe  
City of Perris  
101 N. D Street  
Perris, CA 92570  
[sajobiewe@cityofperris.org](mailto:sajobiewe@cityofperris.org)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. Ajobiewe:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

Prior to adoption of the 2020 UWMP, EMWD will be holding a public hearing to review the updated plan and to accept comments. EMWD will provide further notice once this hearing has been scheduled. A draft of the plan will be made available for review once it has been completed, and a final UWMP will be available to the public after it has been adopted.

Should you have any questions regarding the UWMP update process, please contact me by phone at (951) 928-3777 ext. 4512, or via email at [nng@emwd.org](mailto:nng@emwd.org).

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

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January 19, 2021

Jack Bebee  
Fallbrook Public Utility District  
990 E Mission Rd  
Fallbrook, CA 92028  
[jackb@fpud.com](mailto:jackb@fpud.com)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. Bebee:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

Prior to adoption of the 2020 UWMP, EMWD will be holding a public hearing to review the updated plan and to accept comments. EMWD will provide further notice once this hearing has been scheduled. A draft of the plan will be made available for review once it has been completed, and a final UWMP will be available to the public after it has been adopted.

Should you have any questions regarding the UWMP update process, please contact me by phone at (951) 928-3777 ext. 4512, or via email at [nngg@emwd.org](mailto:nngg@emwd.org).

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

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January 19, 2021

Edgar Fandialan / Tiffany Tran  
Metropolitan Water District  
P.O. Box 54153  
Los Angeles, CA 90054-0153  
[efandialan@mwdh2o.com](mailto:efandialan@mwdh2o.com) / [t\\_tran@mwdh2o.com](mailto:t_tran@mwdh2o.com)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. Fandialan / Ms. Tran:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

Prior to adoption of the 2020 UWMP, EMWD will be holding a public hearing to review the updated plan and to accept comments. EMWD will provide further notice once this hearing has been scheduled. A draft of the plan will be made available for review once it has been completed, and a final UWMP will be available to the public after it has been adopted.

Should you have any questions regarding the UWMP update process, please contact me by phone at (951) 928-3777 ext. 4512, or via email at [nngg@emwd.org](mailto:nngg@emwd.org).

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

GN:ag

Board of Directors  
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January 19, 2021

Stuart Fisk  
City of Temecula  
41000 Main St  
Temecula, CA 92589  
[stuart.fisk@temeculaca.gov](mailto:stuart.fisk@temeculaca.gov)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. Fisk:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

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Should you have any questions regarding the UWMP update process, please contact me by phone at (951) 928-3777 ext. 4512, or via email at [nngg@emwd.org](mailto:nngg@emwd.org).

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

GN:ag

Board of Directors  
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January 19, 2021

Ryan Fowler  
City of Menifee  
29844 Haun Rd  
Menifee, CA 92586  
[rfowler@cityofmenifee.us](mailto:rfowler@cityofmenifee.us)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. Fowler:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

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Should you have any questions regarding the UWMP update process, please contact me by phone at (951) 928-3777 ext. 4512, or via email at [nngg@emwd.org](mailto:nngg@emwd.org).

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January 19, 2021

Travis Holyoak  
City of Hemet  
3777 Industrial Ave  
Hemet, CA 92545  
[tholyoak@cityofhemet.org](mailto:tholyoak@cityofhemet.org)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. Holyoak:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

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Should you have any questions regarding the UWMP update process, please contact me by phone at (951) 928-3777 ext. 4512, or via email at [nngg@emwd.org](mailto:nngg@emwd.org).

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

GN:ag

Board of Directors  
Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300  
T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)



January 19, 2021

Parag Kalaria  
Elsinore Valley Municipal Water District  
31315 Chaney St  
Lake Elsinore, CA 92530  
[pkalaria@emwd.net](mailto:pkalaria@emwd.net)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. Kalaria:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

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Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

GN:ag

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January 19, 2021

Carole Kendrick  
City of Beaumont  
550 E 6<sup>th</sup> St  
Beaumont, CA 92223  
[ckendrick@beaumontca.gov](mailto:ckendrick@beaumontca.gov)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Ms. Kendrick:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

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Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

GN:ag

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January 19, 2021

Tom Kennedy  
Rainbow Municipal Water District  
3707 Old Hwy 395  
Fallbrook, CA 92028  
[tkennedy@rainbowmwd.com](mailto:tkennedy@rainbowmwd.com)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. Kennedy:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

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Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

GN:ag

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January 19, 2021

Jeff Kirshberg  
Rancho California Water District  
42135 Winchester Rd  
Temecula, CA 92590  
[kirshbergj@ranchowater.com](mailto:kirshbergj@ranchowater.com)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. Kirshberg:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

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Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

GN:ag

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January 19, 2021

Kenneth McLaughlin  
Soboba Band of Luiseno Indians  
P.O. Box 487  
San Jacinto, CA 92581  
[KMcLaughlin@soboba-nsn.gov](mailto:KMcLaughlin@soboba-nsn.gov)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. McLaughlin:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

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Sincerely,

Gordon Ng, P.E.  
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January 19, 2021

Jim Morrissey  
City of Canyon Lake  
31516 Railroad Canyon Rd  
Canyon Lake, CA 92587  
[jmorrissey@canyonlakeca.gov](mailto:jmorrissey@canyonlakeca.gov)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. Morrissey:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

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Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

GN:ag

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January 19, 2021

Behrooz Mortazavi  
Hemet-San Jacinto Watermaster Advisor  
[Behrooz@H2Oengineers.com](mailto:Behrooz@H2Oengineers.com)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. Mortazavi:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

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Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

GN:ag

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January 19, 2021

Matthew Osborn  
City of San Jacinto  
595 S. San Jacinto Ave  
San Jacinto, CA 92583  
[mosborn@sanjacintoca.gov](mailto:mosborn@sanjacintoca.gov)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. Osborn:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

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January 19, 2021

Pechanga Band of Luiseno Indians  
P.O. Box 1477  
Temecula, CA 92593  
[contact@pechanga-nsn.gov](mailto:contact@pechanga-nsn.gov)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

To Whom It May Concern:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

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Gordon Ng, P.E.  
Principal Water Resources Specialist

GN:ag

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January 19, 2021

Michael Plinski  
Riverside Public Utilities  
3901 Orange St  
Riverside, CA 92501  
[mplinski@riversideca.gov](mailto:mplinski@riversideca.gov)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. Plinski:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

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Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

GN:ag

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January 19, 2021

Jarrett Ramaiya  
City of Murrieta  
1 Town Square  
Murrieta, CA 92562  
[jramaiya@murrietaca.gov](mailto:jramaiya@murrietaca.gov)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. Ramaiya:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

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January 19, 2021

Cindi Robbins  
Nuevo Water Company  
30427 11<sup>th</sup> St  
Nuevo, CA 92567  
[crobbins.nuevowater@gmail.com](mailto:crobbins.nuevowater@gmail.com)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Ms. Robbins:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

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Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

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T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)



January 19, 2021

Ryan Shaw / Melissa Matlock  
Western Municipal Water District  
14205 Meridian Pkwy  
Riverside, CA 92518  
[RShaw@wmwd.com](mailto:RShaw@wmwd.com) / [MMatlock@wmwd.com](mailto:MMatlock@wmwd.com)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. Shaw / Ms. Matlock:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

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Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

GN:ag

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T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)



January 19, 2021

Jason Venable  
Lake Hemet Municipal Water District  
P.O. Box 5039  
Hemet, CA 92544-0039  
[jvenable@lhmwd.org](mailto:jvenable@lhmwd.org)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. Venable:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

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Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

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January 19, 2021

Steve Weiss  
County of Riverside  
4080 Lemon St  
Riverside, CA 92501  
[sweiss@rctlma.org](mailto:sweiss@rctlma.org)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. Weiss:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

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Gordon Ng, P.E.  
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January 19, 2021

Michael Wolfe / Michael Lloyd  
City of Moreno Valley  
P.O. Box 88005  
Moreno Valley, CA 92552  
[michaelw@moval.org](mailto:michaelw@moval.org) / [michaell@moval.org](mailto:michaell@moval.org)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Mr. Wolfe and Mr. Lloyd:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

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Principal Water Resources Specialist

GN:ag

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January 19, 2021

Julia Ekstrom  
California Department of Water Resources  
1416 9<sup>th</sup> Street  
Sacramento, CA 95814  
[Julia.Ekstrom@water.ca.gov](mailto:Julia.Ekstrom@water.ca.gov)

VIA ELECTRONIC MAIL

**Subject: Notification of Urban Water Management Plan Update**

Dear Ms. Ekstrom:

Eastern Municipal Water District (EMWD) is currently preparing an update to its Urban Water Management Plan (UWMP), which evaluates EMWD's water supplies and water use efficiency over a long-term planning horizon. An UWMP is required to be prepared by every urban water supplier (as defined in the California Water Code) and must be updated every five years for calendar years ending in zero (0) or five (5). The 2020 update is due to the California Department of Water Resources on July 1, 2021.

Prior to adoption of the 2020 UWMP, EMWD will be holding a public hearing to review the updated plan and to accept comments. EMWD will provide further notice once this hearing has been scheduled. A draft of the plan will be made available for review once it has been completed, and a final UWMP will be available to the public after it has been adopted.

Should you have any questions regarding the UWMP update process, please contact me by phone at (951) 928-3777 ext. 4512, or via email at [nngg@emwd.org](mailto:nngg@emwd.org).

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

GN:ag

Board of Directors  
Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300  
T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)

## Copeland, Stena

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**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:57 PM  
**To:** ckendrick@beaumontca.gov  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - City of Beaumont.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Carole Kendrick  
City of Beaumont  
550 E 6<sup>th</sup> Street  
Beaumont, CA 92223

[ckendrick@beaumontca.gov](mailto:ckendrick@beaumontca.gov)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Ms. Kendrick:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

A public hearing to allow community input on the 2020 UWMP has been rescheduled from 9:00 AM on June 16, 2021 to 8:00 AM on June 30, 2021. The location of the public hearing, the EMWD headquarters located at 2270 Trumble Road, Perris, CA, has not been changed. EMWD will also consider written comments on the UWMP sent to the attention of Gordon Ng by email at [ngg@emwd.org](mailto:ngg@emwd.org) or by mail to Eastern Municipal Water District, P.O. Box 8300, Perris, CA 92572-8300. Comments should be received by June 30, 2021.

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors

Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300

T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)

## Copeland, Stena

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**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:57 PM  
**To:** jmorrissey@canyonlakeca.gov  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - City of Canyon Lake.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Jim Morrissey  
City of Canyon Lake  
31516 Railroad Canyon Road  
Canyon Lake, CA 92587

[jmorrissey@canyonlakeca.gov](mailto:jmorrissey@canyonlakeca.gov)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Mr. Morrissey:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

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Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors

Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

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T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)

## Copeland, Stena

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**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:56 PM  
**To:** 'Travis Holyoak'  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - City of Hemet.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Travis Holyoak  
City of Hemet  
3777 Industrial Avenue  
Hemet, CA 92545

[tholyoak@cityofhemet.org](mailto:tholyoak@cityofhemet.org)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Mr. Holyoak:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

A public hearing to allow community input on the 2020 UWMP has been rescheduled from 9:00 AM on June 16, 2021 to 8:00 AM on June 30, 2021. The location of the public hearing, the EMWD headquarters located at 2270 Trumble Road, Perris, CA, has not been changed. EMWD will also consider written comments on the UWMP sent to the attention of Gordon Ng by email at [ngg@emwd.org](mailto:ngg@emwd.org) or by mail to Eastern Municipal Water District, P.O. Box 8300, Perris, CA 92572-8300. Comments should be received by June 30, 2021.

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors

Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300

T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)



## Copeland, Stena

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**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:56 PM  
**To:** rfowler@cityofmenifee.us  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - City of Menifee.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Ryan Fowler  
City of Menifee  
29844 Haun Road  
Menifee, CA 92586

[rfowler@cityofmenifee.us](mailto:rfowler@cityofmenifee.us)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Mr. Fowler:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

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Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors

Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

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T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)

## Copeland, Stena

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**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:56 PM  
**To:** Michael Lloyd, P.E.; michaelw@moval.org  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - City of Moreno Valley.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Michael Wolfe / Michael Lloyd  
City of Moreno Valley  
P.O. Box 88005  
Moreno Valley, CA 92552

[michaelw@moval.org](mailto:michaelw@moval.org) / [michaell@moval.org](mailto:michaell@moval.org)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Mr. Wolfe / Mr. Lloyd:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

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Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors

Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300

T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)

## Copeland, Stena

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**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:55 PM  
**To:** jramaiya@murrietaca.gov  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - City of Murrieta.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Jarrett Ramaiya  
City of Murrieta  
1 Town Square  
Murrieta, CA 92562

[jramaiya@murrietaca.gov](mailto:jramaiya@murrietaca.gov)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Mr. Ramaiya:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

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Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors

Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300

T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)

## Copeland, Stena

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**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:52 PM  
**To:** Ajobiewe, Stephen  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - City of Perris.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Stephen Ajobiewe  
City of Perris  
101 N. D Street  
Perris, CA 92570

[sajobiewe@cityofperris.org](mailto:sajobiewe@cityofperris.org)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Mr. Ajobiewe:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

A public hearing to allow community input on the 2020 UWMP has been rescheduled from 9:00 AM on June 16, 2021 to 8:00 AM on June 30, 2021. The location of the public hearing, the EMWD headquarters located at 2270 Trumble Road, Perris, CA, has not been changed. EMWD will also consider written comments on the UWMP sent to the attention of Gordon Ng by email at [ngg@emwd.org](mailto:ngg@emwd.org) or by mail to Eastern Municipal Water District, P.O. Box 8300, Perris, CA 92572-8300. Comments should be received by June 30, 2021.

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors

Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300

T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)



## Copeland, Stena

---

**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:52 PM  
**To:** mosborn@sanjacintoca.gov  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - City of San Jacinto.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Matthew Osborn  
City of San Jacinto  
595 S. San Jacinto Avenue  
San Jacinto, CA 92583

[mosborn@sanjacintoca.gov](mailto:mosborn@sanjacintoca.gov)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Mr. Osborn:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

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Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors

Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300

T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)

## Copeland, Stena

---

**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:52 PM  
**To:** stuart.fisk@temeculaca.gov  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - City of Temecula.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Stuart Fisk  
City of Temecula  
41000 Main Street  
Temecula, CA 92589

[stuart.fisk@temeculaca.gov](mailto:stuart.fisk@temeculaca.gov)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Mr. Fisk:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

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Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors  
Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300  
T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)

## Copeland, Stena

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**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:51 PM  
**To:** sweiss@rctlma.org  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - County of Riverside.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Steve Weiss  
County of Riverside  
4080 Lemon Street  
Riverside, CA 92501

[sweiss@rctlma.org](mailto:sweiss@rctlma.org)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Mr. Weiss:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

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Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors

Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300

T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)

## Copeland, Stena

---

**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:51 PM  
**To:** pkalaria@evmwd.net  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - Elsinore Valley MWD.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Parag Kalaria  
Elsinore Valley Municipal Water District  
31315 Chaney Street  
Lake Elsinore, CA 92530

[pkalaria@emwd.net](mailto:pkalaria@emwd.net)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Mr. Kalaria:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

A public hearing to allow community input on the 2020 UWMP has been rescheduled from 9:00 AM on June 16, 2021 to 8:00 AM on June 30, 2021. The location of the public hearing, the EMWD headquarters located at 2270 Trumble Road, Perris, CA, has not been changed. EMWD will also consider written comments on the UWMP sent to the attention of Gordon Ng by email at [ngg@emwd.org](mailto:ngg@emwd.org) or by mail to Eastern Municipal Water District, P.O. Box 8300, Perris, CA 92572-8300. Comments should be received by June 30, 2021.

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors

Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300

T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)



## Copeland, Stena

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**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:51 PM  
**To:** jackb@fpud.com  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - Fallbrook Public Utility District.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Jack Bebee  
Fallbrook Public Utility District  
990 E Mission Road  
Fallbrook, CA 92028

[jackb@fpud.com](mailto:jackb@fpud.com)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Mr. Bebee:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

A public hearing to allow community input on the 2020 UWMP has been rescheduled from 9:00 AM on June 16, 2021 to 8:00 AM on June 30, 2021. The location of the public hearing, the EMWD headquarters located at 2270 Trumble Road, Perris, CA, has not been changed. EMWD will also consider written comments on the UWMP sent to the attention of Gordon Ng by email at [ngg@emwd.org](mailto:ngg@emwd.org) or by mail to Eastern Municipal Water District, P.O. Box 8300, Perris, CA 92572-8300. Comments should be received by June 30, 2021.

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors

Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300

T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)

## Copeland, Stena

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**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:48 PM  
**To:** Behrooz Mortazavi  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - HSJ Watermaster.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Behrooz Mortazavi  
Hemet-San Jacinto Watermaster Advisor

[Behrooz@H2Oengineers.com](mailto:Behrooz@H2Oengineers.com)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Mr. Mortazavi:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

A public hearing to allow community input on the 2020 UWMP has been rescheduled from 9:00 AM on June 16, 2021 to 8:00 AM on June 30, 2021. The location of the public hearing, the EMWD headquarters located at 2270 Trumble Road, Perris, CA, has not been changed. EMWD will also consider written comments on the UWMP sent to the attention of Gordon Ng by email at [ngg@emwd.org](mailto:ngg@emwd.org) or by mail to Eastern Municipal Water District, P.O. Box 8300, Perris, CA 92572-8300. Comments should be received by June 30, 2021.

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors

Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300

T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)

## Copeland, Stena

---

**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:48 PM  
**To:** jvenable@lhmwd.org  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - LHMWD.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Jason Venable  
Lake Hemet Municipal Water District  
P.O. Box 5039  
Hemet, CA 92544-0039

[jvenable@lhmwd.org](mailto:jvenable@lhmwd.org)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Mr. Venable:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

A public hearing to allow community input on the 2020 UWMP has been rescheduled from 9:00 AM on June 16, 2021 to 8:00 AM on June 30, 2021. The location of the public hearing, the EMWD headquarters located at 2270 Trumble Road, Perris, CA, has not been changed. EMWD will also consider written comments on the UWMP sent to the attention of Gordon Ng by email at [ngg@emwd.org](mailto:ngg@emwd.org) or by mail to Eastern Municipal Water District, P.O. Box 8300, Perris, CA 92572-8300. Comments should be received by June 30, 2021.

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors

Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300

T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)

## Copeland, Stena

---

**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:47 PM  
**To:** 'efandialan@mwdh2o.com'; t\_tran@mwdh2o.com  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - MWD.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Edgar Fandialan / Tiffany Tran  
Metropolitan Water District  
P.O. Box 54153  
Los Angeles, CA 90054-0153

[efandialan@mwdh2o.com](mailto:efandialan@mwdh2o.com) / [t\\_tran@mwdh2o.com](mailto:t_tran@mwdh2o.com)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Mr. Fandialan / Ms. Tran:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

A public hearing to allow community input on the 2020 UWMP has been rescheduled from 9:00 AM on June 16, 2021 to 8:00 AM on June 30, 2021. The location of the public hearing, the EMWD headquarters located at 2270 Trumble Road, Perris, CA, has not been changed. EMWD will also consider written comments on the UWMP sent to the attention of Gordon Ng by email at [ngg@emwd.org](mailto:ngg@emwd.org) or by mail to Eastern Municipal Water District, P.O. Box 8300, Perris, CA 92572-8300. Comments should be received by June 30, 2021.

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors

Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300

T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)



## Copeland, Stena

---

**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:47 PM  
**To:** Robbins, Cinthia  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - Nuevo Water Co.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Cindi Robbins  
Nuevo Water Company  
30427 11<sup>th</sup> Street  
Nuevo, CA 92567

[crobbins.nuevowater@gmail.com](mailto:crobbins.nuevowater@gmail.com)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Ms. Robbins:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

A public hearing to allow community input on the 2020 UWMP has been rescheduled from 9:00 AM on June 16, 2021 to 8:00 AM on June 30, 2021. The location of the public hearing, the EMWD headquarters located at 2270 Trumble Road, Perris, CA, has not been changed. EMWD will also consider written comments on the UWMP sent to the attention of Gordon Ng by email at [ngg@emwd.org](mailto:ngg@emwd.org) or by mail to Eastern Municipal Water District, P.O. Box 8300, Perris, CA 92572-8300. Comments should be received by June 30, 2021.

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors

Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300

T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)

## Copeland, Stena

---

**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:46 PM  
**To:** contact@pechanga-nsn.gov  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - Pechanga.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Pechanga Band of Luiseno Indians  
P.O. Box 1477  
Temecula, CA 92593

[contact@pechanga-nsn.gov](mailto:contact@pechanga-nsn.gov)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

To Whom It May Concern:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

A public hearing to allow community input on the 2020 UWMP has been rescheduled from 9:00 AM on June 16, 2021 to 8:00 AM on June 30, 2021. The location of the public hearing, the EMWD headquarters located at 2270 Trumble Road, Perris, CA, has not been changed. EMWD will also consider written comments on the UWMP sent to the attention of Gordon Ng by email at [ngg@emwd.org](mailto:ngg@emwd.org) or by mail to Eastern Municipal Water District, P.O. Box 8300, Perris, CA 92572-8300. Comments should be received by June 30, 2021.

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors

Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300

T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)

## Copeland, Stena

---

**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:57 PM  
**To:** tkennedy@rainbowmwd.com  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - Rainbow MWD.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Tom Kennedy  
Rainbow Municipal Water District  
3707 Old Hwy 395  
Fallbrook, CA 92028

[tkennedy@rainbowmwd.com](mailto:tkennedy@rainbowmwd.com)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Mr. Kennedy:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

A public hearing to allow community input on the 2020 UWMP has been rescheduled from 9:00 AM on June 16, 2021 to 8:00 AM on June 30, 2021. The location of the public hearing, the EMWD headquarters located at 2270 Trumble Road, Perris, CA, has not been changed. EMWD will also consider written comments on the UWMP sent to the attention of Gordon Ng by email at [ngg@emwd.org](mailto:ngg@emwd.org) or by mail to Eastern Municipal Water District, P.O. Box 8300, Perris, CA 92572-8300. Comments should be received by June 30, 2021.

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors  
Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300  
T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)

## Copeland, Stena

---

**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:45 PM  
**To:** 'kirshbergj@ranchowater.com'  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - Rancho California Water District.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Jeff Kirshberg  
Rancho California Water District  
42135 Winchester Road  
Temecula, CA 92590

[kirshbergj@ranchowater.com](mailto:kirshbergj@ranchowater.com)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Mr. Kirshberg:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

A public hearing to allow community input on the 2020 UWMP has been rescheduled from 9:00 AM on June 16, 2021 to 8:00 AM on June 30, 2021. The location of the public hearing, the EMWD headquarters located at 2270 Trumble Road, Perris, CA, has not been changed. EMWD will also consider written comments on the UWMP sent to the attention of Gordon Ng by email at [ngg@emwd.org](mailto:ngg@emwd.org) or by mail to Eastern Municipal Water District, P.O. Box 8300, Perris, CA 92572-8300. Comments should be received by June 30, 2021.

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors

Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300

T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)



## Copeland, Stena

---

**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:45 PM  
**To:** Michael Plinski  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - Riverside Public Utilities.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Michael Plinski  
Riverside Public Utilities  
3901 Orange Street  
Riverside, CA 92501

[mplinski@riversideca.gov](mailto:mplinski@riversideca.gov)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Mr. Plinski:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

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Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors  
Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300  
T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)

## Copeland, Stena

---

**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:45 PM  
**To:** 'kmclaughlin@soboba-nsn.gov'  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - Soboba.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Kenneth McLaughlin  
Soboba Band of Luiseño Indians  
P.O. Box 487  
San Jacinto, CA 92581

[KMcLaughlin@soboba-nsn.gov](mailto:KMcLaughlin@soboba-nsn.gov)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Mr. McLaughlin:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

A public hearing to allow community input on the 2020 UWMP has been rescheduled from 9:00 AM on June 16, 2021 to 8:00 AM on June 30, 2021. The location of the public hearing, the EMWD headquarters located at 2270 Trumble Road, Perris, CA, has not been changed. EMWD will also consider written comments on the UWMP sent to the attention of Gordon Ng by email at [ngg@emwd.org](mailto:ngg@emwd.org) or by mail to Eastern Municipal Water District, P.O. Box 8300, Perris, CA 92572-8300. Comments should be received by June 30, 2021.

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors

Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300

T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)

## Copeland, Stena

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**From:** Copeland, Stena  
**Sent:** Tuesday, June 15, 2021 3:45 PM  
**To:** Ryan Shaw (rshaw@wmwd.com); mmatlock@wmwd.com  
**Subject:** EMWD's 2020 Urban Water Management Plan / Public Hearing Date Change  
**Attachments:** 2021 Rescheduled Adoption Hearing Notice - WMWD.pdf

Good afternoon:

Please see the attached correspondence regarding EMWD's 2020 Urban Water Management Plan update.

Feel free to contact Gordon Ng at [ngg@emwd.org](mailto:ngg@emwd.org) if you should have any questions or call (951) 928-3777 extension 4512.

Thank you,  
**Stena Copeland**  
Executive Assistant  
Water Resources & Facilities Planning  
(951) 928-3777 extension 4227



June 15, 2021

Ryan Shaw / Melissa Matlock  
Western Municipal Water District  
14205 Meridian Parkway  
Riverside, CA 92518

[RShaw@wmwd.com](mailto:RShaw@wmwd.com) / [MMatlock@wmwd.com](mailto:MMatlock@wmwd.com)

VIA ELECTRONIC MAIL

**Subject: Rescheduled 2020 Urban Water Management Plan Public Hearing**

Dear Mr. Shaw and Ms. Matlock:

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608). The UWMP contains an evaluation of EMWD's projected supplies and demands, updates to its Water Shortage Contingency Plan, a report on its compliance with the Water Conservation Act of 2009, and information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1. The draft document is available for review on EMWD's website at the following location: <https://www.emwd.org/post/urban-water-management-plan>

A public hearing to allow community input on the 2020 UWMP has been rescheduled from 9:00 AM on June 16, 2021 to 8:00 AM on June 30, 2021. The location of the public hearing, the EMWD headquarters located at 2270 Trumble Road, Perris, CA, has not been changed. EMWD will also consider written comments on the UWMP sent to the attention of Gordon Ng by email at [ngg@emwd.org](mailto:ngg@emwd.org) or by mail to Eastern Municipal Water District, P.O. Box 8300, Perris, CA 92572-8300. Comments should be received by June 30, 2021.

Sincerely,

Gordon Ng, P.E.  
Principal Water Resources Specialist

Board of Directors

Philip E. Paule, *President* · Randy A. Record, *Vice President* · Jeff Armstrong · Stephen J. Corona · David J. Slawson

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300

T 951.928.3777 • F 951.928.6177 [www.emwd.org](http://www.emwd.org)



**Notice of Rescheduled Public Hearing to Adopt the 2020 Urban Water Management Plan, Update the Water Shortage Contingency Plan, Demonstrate Compliance with the Water Conservation Act of 2009, and Demonstrate Reduced Delta Reliance**

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code §10610-10656 and §10608), which applies to urban water suppliers that either provide over 3,000 acre-feet of water annually, or serve more than 3,000 urban connections.

The UWMP contains an evaluation of EMWD's projected supplies and demands as well as EMWD's reliability under a range of drought scenarios. EMWD is also required to update its Water Shortage Contingency Plan, report on its compliance with the Water Conservation Act of 2009, and include information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1.

This Public Notice officially notifies the general public that the Draft 2020 UWMP is available for public review at District headquarters located at 2270 Trumble Road or on EMWD's website at [www.emwd.org](http://www.emwd.org). Comments or requests for additional information should be sent by mail to:

**Eastern Municipal Water District  
Attention: Gordon Ng  
P.O. Box 8300  
Perris, CA 92572-8300**

Or by email to:

**Gordon Ng  
[ngg@emwd.org](mailto:ngg@emwd.org)**

Public input is encouraged. Email or written comments are due by June 30, 2021 and will be considered during the finalization of the 2020 UWMP.

The public hearing of the EMWD Board of Directors previously scheduled for 9:00 AM on June 16, 2021 has been **rescheduled** to 8:00 AM on June 30, 2021 to allow community input on the 2020 UWMP, updates to the Water Shortage Contingency Plan, and compliance with the Water Conservation Act of 2009 and Delta Plan Policy WR P1. The public hearing will be held at 8:00 AM on June 30, 2021 at the EMWD headquarters located at:

**Eastern Municipal Water District  
2270 Trumble Road  
Perris, CA 92572**

### CALIFORNIA

**San Francisco Bay Area**  
 Tuesday: 67°F - 77°F  
 Wednesday: 65°F - 75°F  
 Thursday: 63°F - 73°F  
 Friday: 61°F - 71°F  
 Saturday: 59°F - 69°F  
 Sunday: 57°F - 67°F

**Los Angeles**  
 Tuesday: 72°F - 82°F  
 Wednesday: 70°F - 80°F  
 Thursday: 68°F - 78°F  
 Friday: 66°F - 76°F  
 Saturday: 64°F - 74°F  
 Sunday: 62°F - 72°F

**San Diego**  
 Tuesday: 68°F - 78°F  
 Wednesday: 66°F - 76°F  
 Thursday: 64°F - 74°F  
 Friday: 62°F - 72°F  
 Saturday: 60°F - 70°F  
 Sunday: 58°F - 68°F

**San Jose**  
 Tuesday: 64°F - 74°F  
 Wednesday: 62°F - 72°F  
 Thursday: 60°F - 70°F  
 Friday: 58°F - 68°F  
 Saturday: 56°F - 66°F  
 Sunday: 54°F - 64°F

**Stockton**  
 Tuesday: 66°F - 76°F  
 Wednesday: 64°F - 74°F  
 Thursday: 62°F - 72°F  
 Friday: 60°F - 70°F  
 Saturday: 58°F - 68°F  
 Sunday: 56°F - 66°F

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 Friday: 61°F - 71°F  
 Saturday: 59°F - 69°F  
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### COAST

**San Francisco Bay Area**  
 Tuesday: 67°F - 77°F  
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 Thursday: 63°F - 73°F  
 Friday: 61°F - 71°F  
 Saturday: 59°F - 69°F  
 Sunday: 57°F - 67°F

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### INLAND

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 Friday: 60°F - 70°F  
 Saturday: 58°F - 68°F  
 Sunday: 56°F - 66°F

### MOUNTAINS

**San Francisco Bay Area**  
 Tuesday: 67°F - 77°F  
 Wednesday: 65°F - 75°F  
 Thursday: 63°F - 73°F  
 Friday: 61°F - 71°F  
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 Friday: 60°F - 70°F  
 Saturday: 58°F - 68°F  
 Sunday: 56°F - 66°F

### LOW DESERT

**San Francisco Bay Area**  
 Tuesday: 67°F - 77°F  
 Wednesday: 65°F - 75°F  
 Thursday: 63°F - 73°F  
 Friday: 61°F - 71°F  
 Saturday: 59°F - 69°F  
 Sunday: 57°F - 67°F

**Los Angeles**  
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 Friday: 60°F - 70°F  
 Saturday: 58°F - 68°F  
 Sunday: 56°F - 66°F



### NATIONAL 10-DAY FORECAST

City	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Atlanta	72-82	70-80	68-78	66-76	64-74	62-72	60-70	58-68	56-66	54-64
Boston	68-78	66-76	64-74	62-72	60-70	58-68	56-66	54-64	52-62	50-60
Chicago	64-74	62-72	60-70	58-68	56-66	54-64	52-62	50-60	48-58	46-56
Denver	60-70	58-68	56-66	54-64	52-62	50-60	48-58	46-56	44-54	42-52
Houston	78-88	76-86	74-84	72-82	70-80	68-78	66-76	64-74	62-72	60-70
Los Angeles	72-82	70-80	68-78	66-76	64-74	62-72	60-70	58-68	56-66	54-64
Miami	82-92	80-90	78-88	76-86	74-84	72-82	70-80	68-78	66-76	64-74
Minneapolis	58-68	56-66	54-64	52-62	50-60	48-58	46-56	44-54	42-52	40-50
New York	68-78	66-76	64-74	62-72	60-70	58-68	56-66	54-64	52-62	50-60
Phoenix	88-98	86-96	84-94	82-92	80-90	78-88	76-86	74-84	72-82	70-80
Portland	54-64	52-62	50-60	48-58	46-56	44-54	42-52	40-50	38-48	36-46
San Francisco	67-77	65-75	63-73	61-71	59-69	57-67	55-65	53-63	51-61	49-59
Seattle	50-60	48-58	46-56	44-54	42-52	40-50	38-48	36-46	34-44	32-42
Washington	64-74	62-72	60-70	58-68	56-66	54-64	52-62	50-60	48-58	46-56

### INLAND TODAY

Hot and sunny with a high of 82°F. Light to moderate winds from the west. A few clouds in the afternoon.

### UV INDEX TODAY

9 (Very High) 12 (Extreme) 13 (Extreme) 12 (Extreme)

### SURF REPORT TODAY

Los Angeles: 1-2 ft, 4-5 mph, S, 20-30  
 San Diego: 1-2 ft, 4-5 mph, S, 20-30  
 San Jose: 1-2 ft, 4-5 mph, S, 20-30  
 Stockton: 1-2 ft, 4-5 mph, S, 20-30

### TIDE REPORT

Los Angeles: High 1:45 pm, 2:15 pm, 7:45 pm, 8:15 pm  
 San Diego: High 1:45 pm, 2:15 pm, 7:45 pm, 8:15 pm  
 San Jose: High 1:45 pm, 2:15 pm, 7:45 pm, 8:15 pm  
 Stockton: High 1:45 pm, 2:15 pm, 7:45 pm, 8:15 pm

### ALMANAC

Month	Day	Equinox	Solstice	Daylight	Temperature
Jan	1	12/21	12/21	10:00	45
Feb	1	1/20	1/20	10:15	48
Mar	1	3/20	3/20	10:30	52
Apr	1	4/19	4/19	10:45	56
May	1	5/18	5/18	11:00	60
Jun	1	6/17	6/21	11:15	64
Jul	1	7/16	7/16	11:30	68
Aug	1	8/15	8/15	11:45	72
Sep	1	9/14	9/14	12:00	76
Oct	1	10/13	10/13	12:15	80
Nov	1	11/12	11/12	12:30	84
Dec	1	12/11	12/11	12:45	88

### THE WORLD

City	Temp	Wind	Humidity	Pressure
London	55	10	75	1015
Paris	58	12	78	1018
Tokyo	62	15	80	1020
Sydney	65	18	82	1022
Mumbai	70	20	85	1025
Beijing	75	25	90	1030
New York	68	15	75	1015
Los Angeles	72	10	70	1012
San Francisco	67	12	72	1014
Chicago	64	15	75	1016
Denver	60	18	78	1018
Houston	78	20	85	1025
Phoenix	88	25	90	1030
Portland	50	10	75	1015
Seattle	48	12	78	1018
Washington	64	15	75	1015

## emwd EASTERN MUNICIPAL WATER DISTRICT

**Notice of Rescheduling Public Hearing to Adopt the 2020 Urban Water Management Plan, Update the Water Storage Contingency Plan, Demonstrate Compliance with the Water Conservation Act of 2009, and Demonstrate Reduced Delta Reductions**

The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code (10410-10458 and 10465)), which applies to urban water suppliers that either provide over 3,000 acre-feet of water annually, or serve more than 3,000 urban connections.

The UWMP contains an evaluation of EMWD's projected supplies and demands as well as EMWD's reliance under a range of drought scenarios. EMWD is also required to update its Water Storage Contingency Plan, report on its compliance with the Water Conservation Act of 2009, and include information demonstrating reduced reliance on the Sacramento-San Joaquin Delta under Delta Plan Policy WR P1.

This Public Notice officially notifies the general public that the Draft 2020 UWMP is available for public review at District headquarters located at 2270 Truxtun Road or on EMWD's website at [www.emwd.org](http://www.emwd.org). Comments or requests for additional information should be sent to [info@emwd.org](mailto:info@emwd.org).

Eastern Municipal Water District  
 Attention: Gordon Ng  
 P.O. Box 8300  
 Perris, CA 92577-8300

Or by email to:  
 Gordon Ng  
[ng@emwd.org](mailto:ng@emwd.org)

Public input is encouraged. Email or written comments are due by June 30, 2021 and will be considered during the formation of the 2020 UWMP.

The public hearing of the EMWD Board of Directors previously scheduled for 9:00 AM on June 16, 2021 has been rescheduled to 9:00 AM on June 30, 2021 to allow consistency with the 2020 UWMP updates to the Water Storage Contingency Plan, and compliance with the Water Conservation Act of 2009 and Delta Plan Policy WR P1. The public hearing will be held at 9:00 AM on June 30, 2021 at the EMWD headquarters located at:

Eastern Municipal Water District  
 2270 Truxtun Road  
 Perris, CA 92577

## OUR HVAC SAVINGS WILL KEEP YOU COOL THIS SUMMER!

# Save \$500

on a HVAC system, purchases over \$1,500

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Transform is a leading provider of HVAC services, offering a wide range of products and services to meet your needs. Our experienced technicians are trained to install and maintain all major brands of HVAC equipment. We offer free estimates and financing options to make your purchase easier. Contact us today to learn more about our services and how we can help you stay cool this summer.



**CALIFORNIA**

**Central Coast**  
 High: 70° Low: 50°  
**Central Valley**  
 High: 65° Low: 45°  
**San Francisco Bay Area**  
 High: 60° Low: 40°  
**San Diego**  
 High: 75° Low: 55°  
**Sierra Nevada**  
 High: 55° Low: 35°

**COAST**

High: 70° Low: 50°  
 High: 65° Low: 45°  
 High: 60° Low: 40°  
 High: 75° Low: 55°

**INLAND**

High: 70° Low: 50°  
 High: 65° Low: 45°  
 High: 60° Low: 40°  
 High: 75° Low: 55°

**MOUNTAINS**

High: 55° Low: 35°  
 High: 50° Low: 30°  
 High: 45° Low: 25°  
 High: 60° Low: 40°

**LOW DESERT**

High: 80° Low: 60°  
 High: 75° Low: 55°  
 High: 70° Low: 50°  
 High: 85° Low: 65°

**THE NATION**



**Sierra Nevada**

High: 55° Low: 35°  
 High: 50° Low: 30°  
 High: 45° Low: 25°  
 High: 60° Low: 40°



**NATIONAL CITIES 10-DAY FORECAST**

City	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Albuquerque	65-80	65-80	65-80	65-80	65-80	65-80	65-80	65-80	65-80	65-80
Anchorage	45-55	45-55	45-55	45-55	45-55	45-55	45-55	45-55	45-55	45-55
Atlanta	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85
Baltimore	60-70	60-70	60-70	60-70	60-70	60-70	60-70	60-70	60-70	60-70
Boston	55-65	55-65	55-65	55-65	55-65	55-65	55-65	55-65	55-65	55-65
Chicago	50-60	50-60	50-60	50-60	50-60	50-60	50-60	50-60	50-60	50-60
Dallas	70-80	70-80	70-80	70-80	70-80	70-80	70-80	70-80	70-80	70-80
Denver	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75
Detroit	55-65	55-65	55-65	55-65	55-65	55-65	55-65	55-65	55-65	55-65
Houston	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85
Los Angeles	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75
London	55-65	55-65	55-65	55-65	55-65	55-65	55-65	55-65	55-65	55-65
Los Angeles	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75
Madrid	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75
Manila	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85
Memphis	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75
Miami	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85
Minneapolis	55-65	55-65	55-65	55-65	55-65	55-65	55-65	55-65	55-65	55-65
Moscow	55-65	55-65	55-65	55-65	55-65	55-65	55-65	55-65	55-65	55-65
Mumbai	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85
New York	60-70	60-70	60-70	60-70	60-70	60-70	60-70	60-70	60-70	60-70
Oakland	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75
Orlando	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85
Philadelphia	60-70	60-70	60-70	60-70	60-70	60-70	60-70	60-70	60-70	60-70
Phoenix	70-80	70-80	70-80	70-80	70-80	70-80	70-80	70-80	70-80	70-80
Pittsburgh	60-70	60-70	60-70	60-70	60-70	60-70	60-70	60-70	60-70	60-70
Raleigh	70-80	70-80	70-80	70-80	70-80	70-80	70-80	70-80	70-80	70-80
San Antonio	70-80	70-80	70-80	70-80	70-80	70-80	70-80	70-80	70-80	70-80
San Diego	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75
San Francisco	60-70	60-70	60-70	60-70	60-70	60-70	60-70	60-70	60-70	60-70
Seattle	55-65	55-65	55-65	55-65	55-65	55-65	55-65	55-65	55-65	55-65
St. Louis	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75
Tampa	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85	75-85
Washington	60-70	60-70	60-70	60-70	60-70	60-70	60-70	60-70	60-70	60-70
Wichita	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75

**INLAND TODAY**

High: 70° Low: 50°

**UV INDEX TODAY**



**SURF REPORT TODAY**

San Francisco: 1-4 ft  
 Los Angeles: 1-2 ft  
 San Diego: 1-3 ft

**TIDE REPORT**

San Francisco: 1:00 AM  
 Los Angeles: 1:30 AM  
 San Diego: 2:00 AM

**ALMANAC**

Sun: 6:15 AM  
 Moon: 1:30 PM  
 Sunrise: 6:15 AM  
 Sunset: 7:45 PM  
 Moonrise: 1:30 PM  
 Moonset: 11:45 PM

**THE WORLD**

City	High	Low
London	55-65	55-65
Paris	55-65	55-65
Rome	60-70	60-70
Tokyo	65-75	65-75
Sydney	70-80	70-80
Auckland	65-75	65-75
Wellington	65-75	65-75
Christchurch	65-75	65-75
Dunedin	65-75	65-75
Hamilton	65-75	65-75
Wellington	65-75	65-75
Christchurch	65-75	65-75
Dunedin	65-75	65-75
Hamilton	65-75	65-75

**SUN AND MOON**

Sun: 6:15 AM  
 Moon: 1:30 PM

**PLANET WATCH**

Mercury: 1:30 PM  
 Venus: 1:30 PM  
 Mars: 1:30 PM  
 Jupiter: 1:30 PM  
 Saturn: 1:30 PM  
 Uranus: 1:30 PM  
 Neptune: 1:30 PM  
 Pluto: 1:30 PM

**Notice of Rescheduled Public Hearing to Adopt the 2020 Urban Water Management Plan, Update the Water Storage Contingency Plan, Demonstrate Compliance with the Water Conservation Act of 2009, and Demonstrate Reduced Delta Reliance**  
 The Eastern Municipal Water District (EMWD) has prepared a Draft 2020 Urban Water Management Plan (UWMP) in compliance with the requirements established by the Urban Water Management Planning Act (California Water Code (19810-1990) and §19920), which applies to urban water suppliers that either provide over 3,000 acre-feet of water annually, or serve more than 3,000 other connections.  
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 Attention: Gordon Ng  
 P.O. Box 2300  
 Perris, CA 92572-4300  
 Or by email to:  
 Gordon.Ng  
[gng@emwd.org](mailto:gng@emwd.org)  
 Public input is encouraged. Email or written comments are due by June 30, 2021 and will be considered during the resolution of the 2020 UWMP.  
 The public hearing of the EMWD Board of Directors previously scheduled for 9:00 AM on June 16, 2021 has been rescheduled to 9:00 AM on June 30, 2021 to allow community input on the 2020 UWMP, update to the Water Storage Contingency Plan, and compliance with the Water Conservation Act of 2009 and Delta Plan Policy 605 P1. The public hearing will be held at 9:00 AM on June 30, 2021 at the EMWD headquarters located at:  
 Eastern Municipal Water District  
 2275 Trumbull Road  
 Perris, CA 92572

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# K

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## Appendix K: Resolutions of Adoption

**RESOLUTION NO. 2021-087**

**A RESOLUTION OF THE BOARD OF DIRECTORS OF EASTERN  
MUNICIPAL WATER DISTRICT ADOPTING THE 2020 URBAN  
WATER MANAGEMENT PLAN**

**WHEREAS**, the Eastern Municipal Water District (“District”) is an urban water supplier with over 155,000 connections and the Urban Water Management Planning Act requires urban water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually to prepare and adopt, in accordance with prescribed requirements, an urban water management plan every five years; and

**WHEREAS**, the Urban Water Management Planning Act specifies the requirements and procedures for adopting such urban water management plans; and

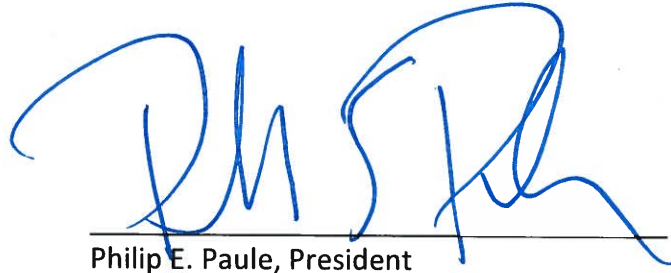
**WHEREAS**, the Board of Directors has duly reviewed, discussed, and considered the 2020 Urban Water Management Plan and has determined the 2020 Urban Water Management Plan to be consistent with the Urban Water Management Planning Act and to be an accurate representation of the water resources plan for the District.

*(This space intentionally left blank)*

**NOW, THEREFORE, THE BOARD OF DIRECTORS OF EASTERN MUNICIPAL WATER DISTRICT DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:**

1. The District hereby adopts the 2020 Urban Water Management Plan for submittal to the State of California.
2. This Resolution shall be effective upon its adoption.

DATED: June 30, 2021



Philip E. Paule, President

I hereby certify that the foregoing is a full, true and correct copy of the Resolution adopted by the Board of Directors of the Eastern Municipal Water District at its meeting held on June 30, 2021.

ATTEST:



Sheila Zelaya, Board Secretary

(SEAL)



**RESOLUTION NO. 2021-088**

**A RESOLUTION OF THE BOARD OF DIRECTORS OF EASTERN  
MUNICIPAL WATER DISTRICT ADOPTING THE WATER  
SHORTAGE CONTINGENCY PLAN**

**WHEREAS**, the Eastern Municipal Water District (“District”) is an urban water supplier with over 155,000 connections and the Urban Water Management Planning Act requires urban water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually to prepare and adopt, in accordance with prescribed requirements, a water shortage contingency plan; and

**WHEREAS**, the Urban Water Management Planning Act specifies the requirements and procedures for adopting such water shortage contingency plans; and

**WHEREAS**, the Board of Directors has duly reviewed, discussed, and considered the updates to the District’s Water Shortage Contingency Plan and has determined the Water Shortage Contingency Plan to be consistent with the Urban Management Planning Act and to be an accurate representation of the planned actions during shortage conditions for the District.

*(This space intentionally left blank)*

**NOW, THEREFORE, THE BOARD OF DIRECTORS OF EASTERN MUNICIPAL WATER DISTRICT DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:**

1. The District hereby adopts this Water Shortage Contingency Plan for submittal to the State of California.
2. This Resolution shall be effective upon its adoption.

DATED: June 30, 2021



Phillip E. Paule, President

I hereby certify that the foregoing is a full, true and correct copy of the Resolution adopted by the Board of Directors of the Eastern Municipal Water District at its meeting held on June 30, 2021.

ATTEST:



Sheila Zelaya, Board Secretary

(SEAL)



**RESOLUTION NO. 2021-089**

**A RESOLUTION OF THE BOARD OF DIRECTORS OF EASTERN  
MUNICIPAL WATER DISTRICT ADOPTING APPENDIX M TO  
THE 2015 URBAN WATER MANAGEMENT PLAN**

**WHEREAS**, the Eastern Municipal Water District (“District”) is an urban water supplier with over 155,000 connections and the Urban Water Management Planning Act requires urban water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually to prepare and adopt, in accordance with prescribed requirements, an urban water management plan every five years; and

**WHEREAS**, the Urban Water Management Planning Act specifies the requirements and procedures for adopting such urban water management plans; and

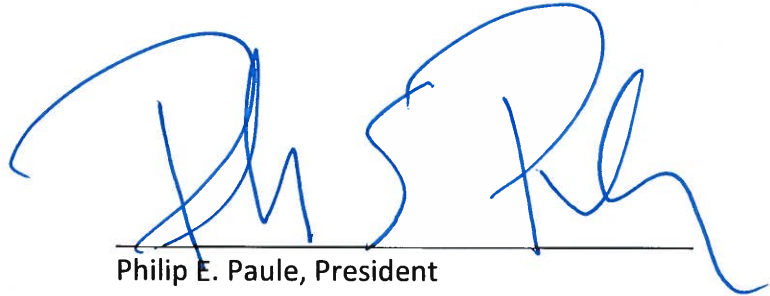
**WHEREAS**, the Board of Directors has duly reviewed, discussed, and considered the Appendix M as an addendum to the District’s 2015 Urban Water Management Plan and has determined Appendix M to be consistent with the Urban Water Management Planning Act and include all of the elements described in Delta Plan Policy WR P1: Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance.

*(This space intentionally left blank)*

**NOW, THEREFORE, THE BOARD OF DIRECTORS OF EASTERN MUNICIPAL WATER DISTRICT DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:**

1. The District hereby adopts Appendix M to the 2015 Urban Water Management Plan for submittal to the State of California.
2. This Resolution shall be effective upon its adoption.

DATED: June 30, 2021



Philip E. Paule, President

I hereby certify that the foregoing is a full, true and correct copy of the Resolution adopted by the Board of Directors of the Eastern Municipal Water District at its meeting held on June 30, 2021.

ATTEST:



Sheila Zelaya, Board Secretary

(SEAL)







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## Appendix L: Reduced Delta Reliance

# Quantifying Regional Self-Reliance and Reduced Reliance on Water Supplies from the Delta Watershed

## 1. Background

Under the Sacramento-San Joaquin Delta Reform Act of 2009, state and local public agencies proposing a covered action in the Delta, prior to initiating the implementation of that action, must prepare a written certification of consistency with detailed findings as to whether the covered action is consistent with applicable Delta Plan policies and submit that certification to the Delta Stewardship Council. Anyone may appeal a certification of consistency, and if the Delta Stewardship Council grants the appeal, the covered action may not be implemented until the agency proposing the covered action submits a revised certification of consistency, and either no appeal is filed, or the Delta Stewardship Council denies the subsequent appeal.

An urban water supplier that anticipates participating in or receiving water from a proposed covered action such as a multi-year water transfer, conveyance facility, or new diversion that involves transferring water through, exporting water from, or using water in the Delta should provide information in their 2015 and 2020 Urban Water Management Plans (UWMPs) that can then be used in the covered action process to demonstrate consistency with Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (WR P1).

WR P1 details what is needed for a covered action to demonstrate consistency with reduced reliance on the Delta and improved regional self-reliance. WR P1 subsection (a) states that:

*(a) Water shall not be exported from, transferred through, or used in the Delta if all the following apply:*

- (1) One or more water suppliers that would receive water as a result of the export, transfer, or use have failed to adequately contribute to reduced reliance on the Delta and improved regional self-reliance consistent with all of the requirements listed in paragraph (1) of subsection (c);*
- (2) That failure has significantly caused the need for the export, transfer, or use; and*
- (3) The export, transfer, or use would have a significant adverse environmental impact in the Delta.*

WR P1 subsection (c)(1) further defines what adequately contributing to reduced reliance on the Delta means in terms of (a)(1) above.

*(c)(1) Water suppliers that have done all the following are contributing to reduced reliance on the Delta and improved regional self-reliance and are therefore consistent with this policy:*

- (A) Completed a current Urban or Agricultural Water Management Plan (Plan) which has been reviewed by the California Department of Water Resources for compliance with the applicable requirements of Water Code Division 6, Parts 2.55, 2.6, and 2.8;*
- (B) Identified, evaluated, and commenced implementation, consistent with the implementation schedule set forth in the Plan, of all programs and projects included in the Plan that are locally cost effective and technically feasible which reduce reliance on the Delta; and*
- (C) Included in the Plan, commencing in 2015, the expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance. The expected outcome for measurable reduction in Delta reliance and improvement in regional self-*

*reliance shall be reported in the Plan as the reduction in the amount of water used, or in the percentage of water used, from the Delta watershed. For the purposes of reporting, water efficiency is considered a new source of water supply, consistent with Water Code section 1011(a).*

The analysis and documentation provided below include all the elements described in WR P1(c)(1) that need to be included in a water supplier's UWMP to support a certification of consistency for a future covered action.

## **2. Demonstration of Regional Self-Reliance**

The methodology used to determine improved regional self-reliance for the Eastern Municipal Water District (EMWD) is consistent with the approach detailed in DWR's UWMP Guidebook Appendix C, including the use of narrative justifications for the accounting of supplies and the documentation of specific data sources. Some of the key assumptions underlying EMWD's demonstration of reduced reliance include:

- All data were obtained from the current 2020 UWMP or previously adopted UWMPs and represent average or normal water year conditions.
- All analyses were conducted at the service area level, and all data reflect the total contributions of EMWD and its customers.
- No projects or programs that are described in the UWMPs as "Projects Under Development" were included in the accounting of supplies.
- EMWD has coordinated this analysis with documentation prepared by the Metropolitan Water District of Southern California (Metropolitan), of which EMWD is a member agency.

### **Baseline and Expected Outcomes**

To calculate the expected outcomes for measurable reduction in Delta reliance and improved regional self-reliance, a baseline is needed to compare against. This analysis uses a normal water year representation of 2010 as the baseline, which is consistent with the approach described in the Guidebook Appendix C.

Documentation of the specific data sources and assumptions are included in the discussions below.

### **Service Area Demands without Water Use Efficiency**

In alignment with the Guidebook Appendix C, this analysis uses normal water year demands, rather than normal water year supplies to calculate expected outcomes in terms of the percentage of water used. Using normal water year demands serves as a proxy for the amount of supplies that would be used in a normal water year, which helps alleviate issues associated with how supply capability is presented to fulfill requirements of the UWMP Act versus how supplies might be accounted for to demonstrate consistency with WR P1.

Because WR P1 considers water use efficiency savings a source of water supply, water suppliers can calculate their embedded water use efficiency savings based on changes in forecasted per capita water use since the baseline. As explained in the Guidebook Appendix C, water use efficiency savings must be added back to the normal year demands to represent demands without water use efficiency savings accounted for; otherwise, the effect of water use efficiency savings on regional self-reliance would be overestimated. Table C-1 shows the results of this adjustment for EMWD. Supporting narratives and documentation for all the data shown in Table C-1 are provided below.

### **Service Area Demands with Water Use Efficiency**

The service area demands shown in Table C-1 represent the total water demands for EMWD's retail and wholesale service area. The demand data shown in Table C-1 were collected from the following sources:

- Baseline (2010): EMWD 2015 UWMP Table 6-1 and 6-2, groundwater management plan records, and sub-agency coordination and 2010 UWMPs
- 2015: EMWD 2015 UWMP Table 6-1 and 6-2, groundwater management plan records, and sub-agency coordination and 2015 UWMPs
- 2020: EMWD 2020 UWMP Table 6-13, groundwater management plan records, and sub-agency coordination
- 2025-2045: EMWD 2020 UWMP, Table 6-15 and 6-16 and sub-agency coordination

### **Non-Potable Water Demands**

EMWD operates four Regional Water Reclamation Facilities to provide recycled water for both municipal and agricultural purposes, as discussed in Chapter 6 of the 2020 UWMP. The non-potable water demand data shown in Table C-1 represents recycled water demand estimates from these facilities for use in EMWD’s service area collected from the following sources:

- Baseline (2010): EMWD 2015 UWMP Table 6-1 and 6-2
- 2015: EMWD 2015 UWMP Table 6-1 and 6-2
- 2020: EMWD 2020 UWMP Table 6-13
- 2025-2045: EMWD 2020 UWMP, Table 6-15 and 6-16

### **Potable Service Area Demands with Water Use Efficiency**

The “Potable Service Area Demands with Water Use Efficiency” was calculated by subtracting the “Non-Potable Water Demands” from “Service Area Demands with Water Use Efficiency.”

### **Service Area Population**

The population data shown in Table 1 were collected from the following sources:

- Baseline (2010): EMWD 2015 UWMP, Table 3-2
- 2015: EMWD 2015 UWMP, Table 3-3
- 2020-2045: EMWD 2020 UWMP, Table 3-3

### **Estimated Water Use Efficiency Since Baseline**

The “Estimated Water Use Efficiency Since Baseline” was calculated using “Potable Service Area Demands with Water Use Efficiency” divided by “Service Area Population” and then comparing with 2010 Per Capita Water Use.

### **Service Area Water Demands without Water Use Efficiency**

In Table C-2, the “Service Area Demands with Water Use Efficiency” was added to the “Estimated Water Use Efficiency Since Baseline” to obtain the “Service Area Water Demands without Water Use Efficiency Accounted For”.

### **Supplies Contributing to Regional Self-Reliance**

For a covered action to demonstrate consistency with the Delta Plan, WR P1 subsection (c)(1)(C) states that water suppliers must report the expected outcomes for measurable improvement in regional self-reliance. EMWD’s local supplies include recycled water, potable groundwater, and desalinated groundwater. Through the Local Resources Program, Metropolitan has contributed to the development of these local supplies. More information about EMWD’s supply portfolio is provided in Chapter 6 of the UWMP.

Table C-3 shows expected outcomes for supplies contributing to regional self-reliance both in amount and as a percentage. The numbers shown in Table C-3 represent efforts to improve regional self-reliance for EMWD’s entire service area and include the total contributions of EMWD and its customers. Supporting narratives and documentation for all the data shown in Table C-3 are provided below.

## Water Use Efficiency

The water use efficiency information shown in Table C-3 is taken directly from Table C-1. More information about EMWD's water use efficiency programs and demand management measures is included in Chapter 9 of EMWD's UWMP.

## Water Recycling

The water recycling values shown in Table C-3 are based on recycled water that was produced for past years, and on projections of recycled water production for future years.

## Advanced Water Technologies

The advanced water technologies data shown in Table C-3 includes production from EMWD's desalters, as described in Chapter 6 of EMWD's 2020 UWMP. The data shown in Table C-3 originated from the following sources:

- Baseline (2010): EMWD 2015 UWMP, Table 6-1 and 6-2
- 2015: EMWD 2015 UWMP, Table 6-1 and 6-2
- 2020: EMWD 2020 UWMP, Table 6-13
- 2025-2045: EMWD 2020 UWMP, Table 6-15 and 6-16

## Local and Regional Water Supply and Storage Programs

The local and regional water supply and storage programs data shown in Table C-3 represent groundwater pumping estimates by entities within EMWD's service area and were estimated from the following sources:

- Baseline (2010): EMWD 2015 UWMP, Table 6-1 and 6-2, groundwater management plan records, and sub-agency coordination and 2010 UWMPs
- 2015: EMWD 2015 UWMP, Table 6-1 and 6-2, groundwater management plan records, and sub-agency coordination and 2015 UWMPs
- 2020: EMWD 2020 UWMP, Table 6-13, groundwater management plan records, and sub-agency coordination
- 2025-2045: EMWD 2020 UWMP, Table 6-15 and 6-16 and sub-agency coordination

## 3. Reliance on Water Supplies from the Delta Watershed

EMWD is a member agency of Metropolitan, which is a contractor to the State Water Project. Metropolitan has prepared an analysis of regional reliance on supplies from the Delta watershed. The discussion below was prepared by Metropolitan to describe the region's efforts to reduce reliance on supplies from the Delta.

Metropolitan's service area, as a whole, reduces reliance on the Delta through investments in non-Delta water supplies, local water supplies, and regional and local demand management measures. Metropolitan's member agencies coordinate reliance on the Delta through their membership in Metropolitan, a regional cooperative providing wholesale water service to its 26 member agencies. Accordingly, regional reliance on the Delta can only be measured regionally—not by individual Metropolitan member agencies and not by the customers of those member agencies.

Metropolitan's member agencies, and those agencies' customers, indirectly reduce reliance on the Delta through their collective efforts as a cooperative. Metropolitan's member agencies do not control the amount of Delta water they receive from Metropolitan. Metropolitan manages a statewide integrated conveyance system consisting of its participation in the State Water Project (SWP), its Colorado River Aqueduct (CRA) including Colorado River water resources, programs and water exchanges, and its regional storage portfolio. Along with the SWP, CRA, storage programs, and Metropolitan's conveyance and distribution facilities, demand management programs increase the future reliability of water resources for the region. In addition, demand management programs provide system-wide

benefits by decreasing the demand for imported water, which helps to decrease the burden on Metropolitan's infrastructure and reduce system costs, and free up conveyance capacity to the benefit of all member agencies.

Metropolitan's costs are funded almost entirely from its service area, except for grants and other assistance from government programs. Most of Metropolitan's revenues are collected directly from its member agencies. Properties within Metropolitan's service area pay a property tax that currently provides approximately 8 percent of the fiscal year 2021 annual budgeted revenues. The rest of Metropolitan's costs are funded through rates and charges paid by Metropolitan's member agencies for the wholesale services it provides to them. Thus, Metropolitan's member agencies fund nearly all operations Metropolitan undertakes to reduce reliance on the Delta, including Colorado River Programs, storage facilities, Local Resources Programs and Conservation Programs within Metropolitan's service area.

Because of the integrated nature of Metropolitan's systems and operations, and the collective nature of Metropolitan's regional efforts, it is infeasible to quantify each of Metropolitan member agencies' individual reliance on the Delta. It is infeasible to attempt to segregate an entity and a system that were designed to work as an integrated regional cooperative.

In addition to the member agencies funding Metropolitan's regional efforts, they also invest in their own local programs to reduce their reliance on any imported water. Moreover, the customers of those member agencies may also invest in their own local programs to reduce water demand. However, to the extent those efforts result in reduction of demands on Metropolitan, that reduction does not equate to a like reduction of reliance on the Delta. Demands on Metropolitan are not commensurate with demands on the Delta because most of Metropolitan member agencies receive blended resources from Metropolitan as determined by Metropolitan—not the individual member agency—and for most member agencies, the blend varies from month-to-month and year-to-year due to hydrology, operational constraints, use of storage and other factors.

## Colorado River Programs

As a regional cooperative of member agencies, Metropolitan invests in programs to ensure the continued reliability and sustainability of Colorado River supplies. Metropolitan was established to obtain an allotment of Colorado River water, and its first mission was to construct and operate the CRA. The CRA consists of five pumping plants, 450 miles of high voltage power lines, one electric substation, four regulating reservoirs, and 242 miles of aqueducts, siphons, canals, conduits and pipelines terminating at Lake Mathews in Riverside County. Metropolitan owns, operates, and manages the CRA. Metropolitan is responsible for operating, maintaining, rehabilitating, and repairing the CRA, and is responsible for obtaining and scheduling energy resources adequate to power pumps at the CRA's five pumping stations.

Colorado River supplies include Metropolitan's basic Colorado River apportionment, along with supplies that result from existing and committed programs, including supplies from the Imperial Irrigation District (IID)-Metropolitan Conservation Program, the implementation of the Quantification Settlement Agreement (QSA) and related agreements, and the exchange agreement with San Diego County Water Authority (SDCWA). The QSA established the baseline water use for each of the agreement parties and facilitates the transfer of water from agricultural agencies to urban uses. Since the QSA, additional programs have been implemented to increase Metropolitan's CRA supplies. These include the PVID Land Management, Crop Rotation, and Water Supply Program, as well as the Lower Colorado River Water Supply Project. The 2007 Interim Guidelines provided for the coordinated operation of Lake Powell and Lake Mead, as well as the Intentionally Created Surplus (ICS) program that allows Metropolitan to store water in Lake Mead.

## Storage Investments/Facilities

Surface and groundwater storage are critical elements of Southern California's water resources strategy and help Metropolitan reduce its reliance on the Delta. Because California experiences dramatic swings in weather and hydrology, storage is important to regulate those swings and mitigate possible supply shortages. Surface and groundwater storage provide a means of storing water during normal and wet years for later use during dry years, when imported supplies are limited. The Metropolitan system, for purposes of meeting demands during times of shortage, regulating system flows, and ensuring system reliability in the event of a system outage, provides over 1,000,000 acre-feet of system storage capacity. Diamond Valley Lake provides 810,000 acre feet of that storage capacity, effectively doubling Southern California's previous surface water storage capacity. Other existing imported water storage available to the region consists of Metropolitan's raw water reservoirs, a share of the SWP's raw water reservoirs in and near the service area, and the portion of the groundwater basins used for conjunctive-use storage.

Since the early twentieth century, DWR and Metropolitan have constructed surface water reservoirs to meet emergency, drought/seasonal, and regulatory water needs for Southern California. These reservoirs include Pyramid Lake, Castaic Lake, Elderberry Forebay, Silverwood Lake, Lake Perris, Lake Skinner, Lake Mathews, Live Oak Reservoir, Garvey Reservoir, Palos Verdes Reservoir, Orange County Reservoir, and Metropolitan's Diamond Valley Lake (DVL). Some reservoirs such as Live Oak Reservoir, Garvey Reservoir, Palos Verdes Reservoir, and Orange County Reservoir, which have a total combined capacity of about 3,500 AF, are used solely for regulating purposes. The total gross storage capacity for the larger remaining reservoirs is 1,757,600 AF. However, not all of the gross storage capacity is available to Metropolitan; dead storage and storage allocated to others reduce the amount of storage that is available to Metropolitan to 1,665,200 AF.

Conjunctive use of the aquifers offers another important source of dry year supplies. Unused storage in Southern California groundwater basins can be used to optimize imported water supplies, and the development of groundwater storage projects allows effective management and regulation of the region's major imported supplies from the Colorado River and SWP. Over the years, Metropolitan has implemented conjunctive use through various programs in the service area; the following table lists the groundwater conjunctive use programs that have been developed in the region.

Program	Metropolitan Agreement Partners	Program Term	Max Storage AF	Dry-Year Yield AF/Yr
Long Beach Conjunctive Use Storage Project (Central Basin)	Long Beach	June 2002-2027	13,000	4,300
Foothill Area Groundwater Storage Program (Monkhill/ Raymond Basin)	Foothill MWD	February 2003-2028	9,000	3,000
Orange County Groundwater Conjunctive Use Program	MWDOC OCWD	June 2003-2028	66,000+	22,000
Chino Basin Conjunctive Use Programs	IEUA TVMWD Watermaster	June 2003-2028	100,000	33,000
Live Oak Basin Conjunctive Use Project (Six Basins)	TVMWD City of La Verne	October 2002-2027	3,000	1,000
City of Compton Conjunctive Use Project (Central Basin)	Compton	February 2005-2030	2,289	763
Long Beach Conjunctive Use Program Expansion in Lakewood (Central Basin)	Long Beach	July 2005-2030	3,600	1,200
Upper Claremont Basin Groundwater Storage Program (Six Basins)	TVMWD	Sept. 2005- 2030	3,000	1,000
Elsinore Basin Conjunctive Use Storage Program	Western MWD Elsinore Valley MWD	May 2008- 2033	12,000	4,000
<b>TOTAL</b>			<b>211,889</b>	<b>70,263</b>

## Metropolitan Demand Management Programs

Demand management costs are Metropolitan’s expenditures for funding local water resource development programs and water conservation programs. These Demand Management Programs incentivize the development of local water supplies and the conservation of water to reduce the need to import water to deliver to Metropolitan’s member agencies. These programs are implemented below the delivery points between Metropolitan’s and its member agencies’ distribution systems and, as such, do not add any water to Metropolitan’s supplies. Rather, the effect of these downstream programs is to produce a local supply of water for the local agencies and to reduce demands by member agencies for water imported through Metropolitan’s system. The following discussions outline how Metropolitan funds local resources and conservation programs for the benefit of all of its member agencies and the entire Metropolitan service area. Notably, the history of demand management by Metropolitan’s member agencies and the local agencies that purchase water from Metropolitan’s members has spanned more than four decades. The significant history of the programs is another reason it would be difficult to attempt to assign a portion of such funding to any one individual member agency.

## Local Resources Programs

In 1982, Metropolitan began providing financial incentives to its member agencies to develop new local supplies to assist in meeting the region’s water needs. Because of Metropolitan’s regional distribution system, these programs benefit all member agencies regardless of project location because they help



to increase regional water supply reliability, reduce demands for imported water supplies, decrease the burden on Metropolitan's infrastructure, reduce system costs and free up conveyance capacity to the benefit of all the agencies that rely on water from Metropolitan.

For example, the Groundwater Replenishment System (GWRS) operated by the Orange County Water District is the world's largest water purification system for indirect potable reuse. It was funded, in part, by Metropolitan's member agencies through the Local Resources Program. Annually, the GWRS produces approximately 103,000 acre-feet of reliable, locally controlled, drought-proof supply of high-quality water to recharge the Orange County Groundwater Basin and protect it from seawater intrusion. The GWRS is a premier example of a regional project that significantly reduced the need to utilize imported water for groundwater replenishment in Metropolitan's service area, increasing regional and local supply reliability and reducing the region's reliance on imported supplies, including supplies from the State Water Project.

Metropolitan's local resource programs have evolved through the years to better assist Metropolitan's member agencies in increasing local supply production. The following is a description and history of the local supply incentive programs.

### **Local Projects Program**

In 1982, Metropolitan initiated the Local Projects Program (LPP), which provided funding to member agencies to facilitate the development of recycled water projects. Under this approach, Metropolitan contributed a negotiated up-front funding amount to help finance project capital costs. Participating member agencies were obligated to reimburse Metropolitan over time. In 1986, the LPP was revised, changing the up-front funding approach to an incentive-based approach. Metropolitan contributed an amount equal to the avoided State Water Project pumping costs for each acre-foot of recycled water delivered to end-use consumers. This funding incentive was based on the premise that local projects resulted in the reduction of water imported from the Delta and the associated pumping cost. The incentive amount varied from year to year depending on the actual variable power cost paid for State Water Project imports. In 1990, Metropolitan's Board increased the LPP contribution to a fixed rate of \$154 per acre-foot, which was calculated based on Metropolitan's avoided capital and operational costs to convey, treat, and distribute water, and included considerations of reliability and service area demands.

### **Groundwater Recovery Program**

The drought of the early 1990s sparked the need to develop additional local water resources, aside from recycled water, to meet regional demand and increase regional water supply reliability. In 1991, Metropolitan conducted the Brackish Groundwater Reclamation Study which determined that large amounts of degraded groundwater in the region were not being utilized. Subsequently, the Groundwater Recovery Program (GRP) was established to assist the recovery of otherwise unusable groundwater degraded by minerals and other contaminants, provide access to the storage assets of the degraded groundwater, and maintain the quality of groundwater resources by reducing the spread of degraded plumes.

### **Local Resources Program**

In 1995, Metropolitan's Board adopted the Local Resources Program (LRP), which combined the LPP and GRP into one program. The Board allowed for existing LPP agreements with a fixed incentive rate to convert to the sliding scale up to \$250 per acre-foot, similar to GRP incentive terms. Those agreements that were converted to LRP are known as "LRP Conversions."

### **Competitive Local Projects Program**

In 1998, the Competitive Local Resources Program (Competitive Program) was established. The Competitive Program encouraged the development of recycled water and recovered groundwater through a process that emphasized cost-efficiency to Metropolitan, timing new production according to regional need while minimizing program administration cost. Under the Competitive Program, agencies

requested an incentive rate up to \$250 per acre-foot of production over 25 years under a Request for Proposals (RFP) for the development of up to 53,000 acre-feet per year of new water recycling and groundwater recovery projects. In 2003, a second RFP was issued for the development of an additional 65,000 acre-feet of new recycled water and recovered groundwater projects through the LRP.

### **Seawater Desalination Program**

Metropolitan established the Seawater Desalination Program (SDP) in 2001 to provide financial incentives to member agencies for the development of seawater desalination projects. In 2014, seawater desalination projects became eligible for funding under the LRP, and the SDP was ended.

### **2007 Local Resources Program**

In 2006, a task force comprised of member agency representatives was formed to identify and recommend program improvements to the LRP. As a result of the task force process, the 2007 LRP was established with a goal of 174,000 acre-feet per year of additional local water resource development. The new program allowed for an open application process and eliminated the previous competitive process. This program offered sliding scale incentives of up to \$250 per acre-foot, calculated annually based on a member agency's actual local resource project costs exceeding Metropolitan's prevailing water rate.

### **2014 Local Resources Program**

A series of workgroup meetings with member agencies was held to identify the reasons why there was a lack of new LRP applications coming into the program. The main constraint identified by the member agencies was that the \$250 per acre-foot was not providing enough of an incentive for developing new projects due to higher construction costs to meet water quality requirements and to develop the infrastructure to reach end-use consumers located further from treatment plants. As a result, in 2014, the Board authorized an increase in the maximum incentive amount, provided alternative payment structures, included onsite retrofit costs and reimbursable services as part of the LRP, and added eligibility for seawater desalination projects. The current LRP incentive payment options are structured as follows:

- Option 1 – Sliding scale incentive up to \$340/AF for a 25-year agreement term
- Option 2 – Sliding scale incentive up to \$475/AF for a 15-year agreement term
- Option 3 – Fixed incentive up to \$305/AF for a 25-year agreement term

### **On-site Retrofit Programs**

In 2014, Metropolitan's Board also approved the On-site Retrofit Pilot Program which provided financial incentives to public or private entities toward the cost of small-scale improvements to their existing irrigation and industrial systems to allow connection to existing recycled water pipelines. The On-site Retrofit Pilot Program helped reduce recycled water retrofit costs to the end-use consumer which is a key constraint that limited recycled water LRP projects from reaching full production capacity. The program incentive was equal to the actual eligible costs of the on-site retrofit, or \$975 per acre-foot of up-front cost, which equates to \$195 per acre-foot for an estimated five years of water savings (\$195/AF x 5 years) multiplied by the average annual water use in previous three years, whichever is less. The Pilot Program lasted two years and was successful in meeting its goal of accelerating the use of recycled water.

In 2016, Metropolitan's Board authorized the On-site Retrofit Program (ORP), with an additional budget of \$10 million. This program encompassed lessons learned from the Pilot Program and feedback from member agencies to make the program more streamlined and improve its efficiency. As of fiscal year 2019/20, the ORP has successfully converted 440 sites, increasing the use of recycled water by 12,691 acre-feet per year.

## Stormwater Pilot Programs

In 2019, Metropolitan's Board authorized both the Stormwater for Direct Use Pilot Program and a Stormwater for Recharge Pilot Program to study the feasibility of reusing stormwater to help meet regional demands in Southern California. These pilot programs are intended to encourage the development, monitoring, and study of new and existing stormwater projects by providing financial incentives for their construction/retrofit and monitoring/reporting costs. These pilot programs will help evaluate the potential benefits delivered by stormwater capture projects and provide a basis for potential future funding approaches. Metropolitan's Board authorized a total of \$12.5 million for the stormwater pilot programs (\$5 million for the District Use Pilot and \$7.5 million for the Recharge Pilot).

## Current Status and Results of Metropolitan's Local Resource Programs

Today, nearly one-half of the total recycled water and groundwater recovery production in the region has been developed with an incentive from one or more of Metropolitan's local resource programs. During fiscal year 2020, Metropolitan provided about \$13 million for production of 71,000 acre-feet of recycled water for non-potable and indirect potable uses. Metropolitan provided about \$4 million to support projects that produced about 50,000 acre-feet of recovered groundwater for municipal use. Since 1982, Metropolitan has invested \$680 million to fund 85 recycled water projects and 27 groundwater recovery projects that have produced a cumulative total of about 4 million acre-feet.

## Conservation Programs

Metropolitan's regional conservation programs and approaches have a long history. Decades ago, Metropolitan recognized that demand management at the consumer level would be an important part of balancing regional supplies and demands. Water conservation efforts were seen as a way to reduce the need for imported supplies and offset the need to transport or store additional water into or within the Metropolitan service area. The actual conservation of water takes place at the retail consumer level. Regional conservation approaches have proven to be effective at reaching retail consumers throughout Metropolitan's service area and successfully implementing water saving devices, programs and practices. Through the pooling of funding by Metropolitan's member agencies, Metropolitan is able to engage in regional campaigns with wide-reaching impact. Regional investments in demand management programs, of which conservation is a key part along with local supply programs, benefit all member agencies regardless of project location. These programs help to increase regional water supply reliability, reduce demands for imported water supplies, decrease the burden on Metropolitan's infrastructure, reduce system costs, and free up conveyance capacity to the benefit of all member agencies.

## Incentive-Based Conservation Programs

### Conservation Credits Program

In 1988, Metropolitan's Board approved the Water Conservation Credits Program (Credits Program). The Credits Program is similar in concept to the Local Projects Program (LPP). The purpose of the Credits Program is to encourage local water agencies to implement effective water conservation projects through the use of financial incentives. The Credits Program provides financial assistance for water conservation projects that reduce demands on Metropolitan's imported water supplies and require Metropolitan's assistance to be financially feasible.

Initially, the Credits Program provided 50 percent of a member agency's program cost, up to a maximum of \$75 per acre-foot of estimated water savings. The \$75 Base Conservation Rate was established based Metropolitan's avoided cost of pumping SWP supplies. The Base Conservation Rate has been revisited by Metropolitan's Board and revised twice since 1988, from \$75 to \$154 per acre-foot in 1990 and from \$154 to \$195 per acre-foot in 2005.

In fiscal year 2020 Metropolitan processed more than 30,400 rebate applications totaling \$18.9 million.

## **Member Agency Administered Program**

Some member agencies also have unique programs within their service areas that provide local rebates that may differ from Metropolitan's regional program. Metropolitan continues to support these local efforts through a member agency administered funding program that adheres to the same funding guidelines as the Credits Program. The Member Agency Administered Program allows member agencies to receive funding for local conservation efforts that supplement, but do not duplicate, the rebates offered through Metropolitan's regional rebate program.

## **Water Savings Incentive Program**

There are numerous commercial entities and industries within Metropolitan's service area that pursue unique savings opportunities that do not fall within the general rebate programs that Metropolitan provides. In 2012, Metropolitan designed the Water Savings Incentive Program (WSIP) to target these unique commercial and industrial projects. In addition to rebates for devices, under this program, Metropolitan provides financial incentives to businesses and industries that created their own custom water efficiency projects. Qualifying custom projects can receive funding for permanent water efficiency changes that result in reduced potable demand.

## **Non-Incentive Conservation Programs**

In addition to its incentive-based conservation programs, Metropolitan also undertakes additional efforts throughout its service area that help achieve water savings without the use of rebates. Metropolitan's non-incentive conservation efforts include:

- residential and professional water efficient landscape training classes
- water audits for large landscapes
- research, development and studies of new water saving technologies
- advertising and outreach campaigns
- community outreach and education programs
- advocacy for legislation, codes, and standards that lead to increased water savings

## **Current Status and Results of Metropolitan's Conservation Programs**

Since 1990, Metropolitan has invested \$824 million in conservation rebates that have resulted in a cumulative savings of 3.27 million acre-feet of water. These investments include \$450 million in turf removal and other rebates during the last drought which resulted in 175 million square feet of lawn turf removed. During fiscal year 2020, 1.06 million acre-feet of water is estimated to have been conserved. This annual total includes Metropolitan's Conservation Credits Program; code-based conservation achieved through Metropolitan-sponsored legislation; building plumbing codes and ordinances; reduced consumption resulting from changes in water pricing; and pre-1990 device retrofits.

## **Infeasibility of Accounting Regional Investments in Reduced Reliance Below the Regional Level**

The accounting of regional investments that contribute to reduced reliance on supplies from the Delta watershed is straightforward to calculate and report at the regional aggregate level. However, any similar accounting is infeasible for the individual member agencies or their customers. As described above, the region (through Metropolitan) makes significant investments in projects, programs and other resources that reduce reliance on the Delta. In fact, all of Metropolitan's investments in Colorado River supplies, groundwater and surface storage, local resources development and demand management measures that reduce reliance on the Delta are collectively funded by revenues generated from the member agencies through rates and charges.

Metropolitan's revenues cannot be matched to the demands or supply production history of an individual agency, or consistently across the agencies within the service area. Each project or program funded by the region has a different online date, useful life, incentive rate and structure, and production schedule. It is infeasible to account for all these things over the life of each project or program and provide a nexus to each member agency's contributions to Metropolitan's revenue stream over time. Accounting at the regional level allows for the incorporation of the local supplies and water use efficiency programs done by member agencies and their customers through both the regional programs and through their own specific local programs. As shown above, despite the infeasibility of accounting reduced Delta reliance below the regional level, Metropolitan's member agencies and their customers have together made substantial contributions to the region's reduced reliance.

Because of this infeasibility to separate out the individual member agency's reduced reliance on the Delta, Metropolitan has completed the analysis to demonstrate a regional wide reduction which is shown in Table C-4.

## **4. Summary of Expected Outcomes for Reduced Reliance on the Delta**

As stated in WR P1(c)(1)(C), the policy requires that, commencing in 2015, UWMPs include expected outcomes for measurable reduction in Delta reliance and improved regional self-reliance. WR P1 further states that those outcomes shall be reported in the UWMP as the reduction in the amount of water used, or in the percentage of water used, from the Delta.

The expected outcomes for Eastern Municipal Water District's Delta reliance and regional self-reliance were developed using the approach and guidance described in Appendix C of DWR's Urban Water Management Plan Guidebook 2020 (Guidebook Appendix C) issued in March 2021.

### **Regional Self-Reliance**

The data used to demonstrate increased regional self-reliance in this analysis represent the total regional efforts of EMWD and its customers and were developed in conjunction with Metropolitan as part of the UWMP coordination process. In accordance with UMWP requirements, EMWD's customers also report demands and supplies for their service areas in their respective UWMPs. The data reported by those agencies are not additive to the regional totals shown in EMWD's UWMP, rather their reporting represents subtotals of the regional total and should be considered as such for the purposes of determining regional self-reliance.

The results show that EMWD and its customers are measurably reducing reliance on the Delta and improving regional self-reliance.

### **Reduced Reliance on Supplies from the Delta Watershed**

For reduced reliance on supplies from the Delta Watershed, the data used in this analysis represent the total regional efforts of Metropolitan and its member agencies and their customers (many of them retail agencies) and were developed in conjunction with EMWD and other Metropolitan member agencies as part of the UWMP coordination process (as described in Section 5 of Metropolitan's 2020 UWMP). In accordance with UMWP requirements, Metropolitan's member agencies and their customers (many of them retail agencies) also report demands and supplies for their service areas in their respective UWMPs. The data reported by those agencies are not additive to the regional totals shown in Metropolitan's UWMP, rather their reporting represents subtotals of the regional total and should be considered as such for the purposes of determining reduced reliance on the Delta.

While the demands that Metropolitan's member agencies and their customers report in their UWMP's are a good reflection of the demands in their respective service areas, they do not adequately represent each water suppliers' individual contributions to reduced reliance on the Delta. To calculate and report their reliance on water supplies from the Delta watershed, water suppliers that receive water from the Delta through other regional or wholesale water suppliers would need to determine the amount of Delta water that they receive from the regional or wholesale supplier. Two specific pieces of information are

needed to accomplish this, first is the quantity of demands on the regional or wholesale water supplier that accurately reflect a supplier's contributions to reduced reliance on the Delta and second is the quantity of a supplier's demands on the regional or wholesale water supplier that are met by supplies from the Delta watershed.

For water suppliers that make investments in regional projects or programs it may be infeasible to quantify their demands on the regional or wholesale water supplier in a way that accurately reflects their individual contributions to reduced reliance on the Delta. Due to the extensive, long-standing, and successful implementation of regional demand management and local resource incentive programs in Metropolitan's service area, this infeasibility holds true for Metropolitan's members as well as their customers. For Metropolitan's service area, reduced reliance on supplies from the Delta watershed can only be accurately accounted for at the regional level.

The results show that as a region, Metropolitan and its members (including EMWD) as well as their customers are measurably reducing reliance on the Delta and improving regional self-reliance.

## 5. UWMP Implementation

In addition to the analysis and documentation described above, WR P1 subsection (c)(1)(B) requires that all programs and projects included in the UWMP that are locally cost-effective and technically feasible, which reduce reliance on the Delta, are identified, evaluated, and implemented consistent with the implementation schedule. WR P1 (c)(1)(B) states that:

*(B) Identified, evaluated, and commenced implementation, consistent with the implementation schedule set forth in the Plan, of all programs and projects included in the Plan that are locally cost effective and technically feasible which reduce reliance on the Delta[.]*

In accordance with Water Code Section 10631(f), water suppliers must already include in their UWMP a detailed description of expected future projects and programs that they may implement to increase the amount of water supply available to them in normal and single-dry water years and for a period of drought lasting five consecutive years. The UWMP description must also identify specific projects, include a description of the increase in water supply that is expected to be available from each project, and include an estimate regarding the implementation timeline for each project or program.

Chapter 6 of EMWD's 2020 UWMP summarizes the implementation plan and continued progress in developing a diversified water portfolio to meet the region's water needs.

## 6. 2015 UWMP Appendix M

The information contained in this appendix is also intended to be a new Appendix M to EMWD's 2015 UWMP consistent with WR P1 subsection (c)(1)(C) (Cal. Code Regs. tit. 23, § 5003). EMWD provided notice of the availability of the draft 2020 UWMP, 2021 WSCP, and the new Appendix M to the 2015 UWMP and held a public hearing to consider adoption of the documents in accordance with CWC Sections 10621(b) and 10642, and Government Code Section 6066, and Chapter 17.5 (starting with Section 7290) of Division 7 of Title 1 of the Government Code. The public review drafts of the 2020 UWMP, Appendix M to the 2015 UWMP, and the 2021 WSCP were posted on EMWD's website, emwd.org, in advance of the public hearing on June 30, 2021. The notice of availability of the documents was sent to EMWD's customers, as well as cities and counties in EMWD's service area. Copies of the notification letter sent to the customers and cities and counties in EMWD's service area are included in the 2020 UWMP Appendix J. Thus, this Appendix L to EMWD's 2020 UWMP, which was adopted with EMWD's 2020 UWMP, will also be recognized and treated as Appendix M to EMWD's 2015 UWMP.

EMWD held the public hearing for the draft 2020 UWMP, draft Appendix M to the 2015 UWMP, and draft 2021 WSCP on June 30, 2021, at a regular Board of Directors meeting, with an option to join virtually due to COVID-19 concerns. EMWD's Board of Directors determined that the 2020 UWMP and the 2021 WSCP accurately represent the water resources plan for EMWD's service area. In addition,

EMWD's Board of Directors determined that Appendix M to the 2015 UWMP and Appendix L to the 2020 UWMP include all of the elements described in Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (Cal. Code Regs. tit. 23, § 5003), which need to be included in a water supplier's UWMP to support a certification of consistency for a future covered action. The EMWD Board of Directors adopted the 2020 UWMP, Appendix M to the 2015 UWMP, and the 2021 WSCP and authorized their submittal to the State of California. Copies of the resolutions are included in the 2020 UWMP Appendix K.

**Reduced Reliance Calculation - Data Template**

**Table C-1: Optional Calculation of Water Use Efficiency -To be completed if Water Supplier does not specifically estimate Water Use Efficiency as a supply**

Service Area Water Use Efficiency Demands (Acre-Feet)		Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands with Water Use Efficiency Accounted For		196,100	172,878	189,932	216,953	245,050	251,073	263,740	274,962
Non-Potable Water Demands		47,834	46,326	41,569	52,800	59,200	57,200	62,800	67,400
Potable Service Area Demands with Water Use Efficiency Accounted For		148,266	126,552	148,363	164,153	185,850	193,873	200,940	207,562

Total Service Area Population		Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Population		720,669	761,221	859,160	921,207	983,255	1,045,302	1,088,325	1,131,348

Water Use Efficiency Since Baseline (Acre-Feet)		Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Per Capita Water Use (GPCD)		184	148	154	159	169	166	165	164
Change in Per Capita Water Use from Baseline (GPCD)			(35)	(30)	(25)	(15)	(18)	(19)	(20)
Estimated Water Use Efficiency Since Baseline			30,057	28,395	25,371	16,438	21,181	22,965	25,194

**Table C-2: Calculation of Service Area Water Demands Without Water Use Efficiency**

Total Service Area Water Demands (Acre-Feet)		Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands with Water Use Efficiency Accounted For		196,100	172,878	189,932	216,953	245,050	251,073	263,740	274,962
Reported Water Use Efficiency or Estimated Water Use Efficiency Since Baseline			30,057	28,395	25,371	16,438	21,181	22,965	25,194
Service Area Water Demands without Water Use Efficiency Accounted For		196,100	202,935	218,327	242,323	261,489	272,254	286,705	300,156



**Table C-3: Calculation of Supplies Contributing to Regional Self-Reliance**

<b>Water Supplies Contributing to Regional Self-Reliance (Acre-Feet)</b>	<b>Baseline (2010)</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045 (Optional)</b>
Water Use Efficiency	-	30,057	28,395	25,371	16,438	21,181	22,965	25,194
Water Recycling	47,322	45,385	48,200	52,800	59,200	57,200	62,800	67,400
Stormwater Capture and Use								
Advanced Water Technologies	5,787	7,288	7,310	13,400	13,400	13,400	13,400	13,400
Conjunctive Use Projects								
Local and Regional Water Supply and Storage Projects	49,764	43,952	48,001	52,008	51,924	59,896	59,893	59,889
Other Programs and Projects the Contribute to Regional Self-Reliance								
<b>Water Supplies Contributing to Regional Self-Reliance</b>	<b>102,873</b>	<b>126,681</b>	<b>131,907</b>	<b>143,578</b>	<b>140,962</b>	<b>151,677</b>	<b>159,058</b>	<b>165,883</b>

<b>Service Area Water Demands without Water Use Efficiency (Acre-Feet)</b>	<b>Baseline (2010)</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045 (Optional)</b>
Service Area Water Demands without Water Use Efficiency Accounted For	196,100	202,935	218,327	242,323	261,489	272,254	286,705	300,156

<b>Change in Regional Self Reliance (Acre-Feet)</b>	<b>Baseline (2010)</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045 (Optional)</b>
Water Supplies Contributing to Regional Self-Reliance	102,873	126,681	131,907	143,578	140,962	151,677	159,058	165,883
Change in Water Supplies Contributing to Regional Self-Reliance		23,808	29,033	40,705	38,089	48,804	56,185	63,010

<b>Percent Change in Regional Self Reliance (As Percent of Demand w/out WUE)</b>	<b>Baseline (2010)</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045 (Optional)</b>
Percent of Water Supplies Contributing to Regional Self-Reliance	52.5%	62.4%	60.4%	59.3%	53.9%	55.7%	55.5%	55.3%
Change in Percent of Water Supplies Contributing to Regional Self-Reliance		10.0%	8.0%	6.8%	1.4%	3.3%	3.0%	2.8%

**Table C-4: Calculation of Reliance on Water Supplies from the Delta Watershed**

<b>Water Supplies from the Delta Watershed (Acre-Feet)</b>	<b>Baseline (2010)</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045 (Optional)</b>
CVP/SWP Contract Supplies	1,472,000	1,029,000	984,000	1,133,000	1,130,000	1,128,000	1,126,000	1,126,000
Delta/Delta Tributary Diversions								
Transfers and Exchanges	20,000	44,000	91,000	58,000	52,000	52,000	52,000	52,000
Other Water Supplies from the Delta Watershed								
<b>Total Water Supplies from the Delta Watershed</b>	<b>1,492,000</b>	<b>1,073,000</b>	<b>1,075,000</b>	<b>1,191,000</b>	<b>1,182,000</b>	<b>1,180,000</b>	<b>1,178,000</b>	<b>1,178,000</b>

<b>Service Area Water Demands without Water Use Efficiency (Acre-Feet)</b>	<b>Baseline (2010)</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045 (Optional)</b>
Service Area Water Demands without Water Use Efficiency Accounted For	5,493,000	5,499,000	5,219,000	4,938,000	5,032,000	5,156,000	5,261,000	5,374,000

<b>Change in Supplies from the Delta Watershed (Acre-Feet)</b>	<b>Baseline (2010)</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045 (Optional)</b>
Water Supplies from the Delta Watershed	1,492,000	1,073,000	1,075,000	1,191,000	1,182,000	1,180,000	1,178,000	1,178,000
Change in Water Supplies from the Delta Watershed		(419,000)	(417,000)	(301,000)	(310,000)	(312,000)	(314,000)	(314,000)

<b>Percent Change in Supplies from the Delta Watershed (As a Percent of Demand w/out WUE)</b>	<b>Baseline (2010)</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045 (Optional)</b>
Percent of Water Supplies from the Delta Watershed	27.2%	19.5%	20.6%	24.1%	23.5%	22.9%	22.4%	21.9%
Change in Percent of Water Supplies from the Delta Watershed		-7.6%	-6.6%	-3.0%	-3.7%	-4.3%	-4.8%	-5.2%

