Urban WATER Management Plan

February 21, 2006

MSWD
MISSION SPRINGS WATER DISTRICT

Mission Springs Water District

2005

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URBAN WATER MANAGEMENT PLAN 2005

Mission Springs Water District

February 21, 2006

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MISSION SPRINGS WATER DISTRICT
Desert Hot Springs, California

2005 URBAN WATER MANAGEMENT PLAN
CONTACT SHEET

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The water supplier is a:	**Public Agency (Special District)**
The water supplier is a:	**Retailer**
Utility services provided by the water supplier include:	**Domestic water, sanitary sewage collection and treatment, and groundwater basin management**
Is the Agency a Bureau of Reclamation Contractor?	**No**
Is the Agency a State Water Project Contractor?	**No**

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ACRONYMS and ABBREVIATIONS

AB	Assembly Bill
Act	California Average Day Demand Water Management Planning Act of 1983
AF	Acre-Feet
AFY	Acre-Feet per Year
AWPF	Advanced Water Purification Facilities
BMP	Best Management Practices
CALSIM	California Water Allocation and Reservoir Operations Model
CEQA	California Environmental Quality Act
CPTP	Coastal Pumping Transfer Program
CRA	Colorado River Aqueduct
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
CVWD	Coachella Valley Water District
DBP	Disinfection Byproducts
DHS	Department of Health Services
DMM	Demand Management Measure
DWA	Desert Water Agency
DWR	Department of Water Resources
EOC	Emergency Operations Center
GWMP	Groundwater Management Plan
GWRS	Groundwater Replenishment System
IAWP	Interim Agricultural Water Program
IRP	Integrated Water Resources Plan
LRP	Local Resources Program
MAF	Million Acre-Feet
MGD	Million Gallons per Day
mg/L	milligrams per liter
MOU	Memorandum of Understanding
MSWD	Mission Springs Water District
MTBE	Methyl Tertiary-Butyl Ether
MWD	Metropolitan Water District of Southern California
MWDOC	Metropolitan Water District of Orange County
NDMA	N-nitrosodimethylamine
NPDES	National Pollutant Discharge Elimination System
pCi/L	picocuries per liter
PEIR	Program Environmental Impact Report
QSA	Quantification Settlement Agreement
RA	Replenishment Assessment
RSA	Regional Statistical Area
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCADA	Supervisory Control Data Acquisition System
SCAG	Southern California Association of Governments
SDWA	Safe Drinking Water Act
SWP	State Water Project
SWRCB	State Water Resources Control Board
TDS	Total Dissolved Solids

µg/L	micrograms per liter
USBR	U.S. Bureau of Reclamation
UWMP	Urban Water Management Plan
VOC	Volatile Organic Compounds
WMP	Water Master Plan

SECTION 1
INTRODUCTION

1.1 PURPOSE AND UWMP SUMMARY

An Urban Water Management Plan (UWMP or Plan) is prepared by a water purveyor to ensure the appropriate level of reliability of water service sufficient to meet the needs of its various categories of customers during normal, single dry or multiple dry years. The California Water Management Planning Act of 1983 (Act), as amended, requires urban water suppliers to develop an UWMP every five years in the years ending in zero and five.

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

The Mission Springs Water District (MSWD or District) 2005 UWMP has been prepared in compliance with the requirements of the Act, as amended to 2005[1] (Appendix A), and includes the following discussions:

- Water Service Area
- Water Service Facilities
- Water Sources and Supplies
- Water Quality Information
- Water Reliability Planning
- Water Use Provisions
- Water Demand Management Measures
- Water Shortage Contingency Plan
- Water Recycling

1.2 URBAN WATER MANAGEMENT PLAN UPDATE PREPARATION

The District's 2005 UWMP revises the 2000 UWMP prepared by the District and incorporates changes enacted by recent legislation including Senate Bill (SB) 610 (2001), Assembly Bill (AB) 901 (2001), SB 672 (2001), SB 1348 (2002), SB 1384 (2002), SB 1518 (2002), AB 105 (2004), and SB 318 (2004).

[1]California Water Code, Division 6, Part 2.6; §10610, et. seq. Established by Assembly Bill 797 (1983).

The sections in this Plan correspond to the outline of the Act, specifically Article 2, Contents of Plans, Sections 10631, 10632, and 10633. The sequence used for the required information, however, differs slightly in order to present information in a manner reflecting the unique characteristics of the District's water utility. The Department of Water Resources (DWR) 2005 UWMP Review for Completeness Form has been completed, which identifies the locations of Act requirements in this Plan and is included as Appendix B. Additionally, the DWR 2005 UWMP Review for Demand Management Measures (DMM) Completeness Form has also been completed and is included in Appendix C.

Plan Adoption

The 2005 UWMP was adopted by resolution of the Board of Directors of Mission Springs Water District on February 21, 2006, following a public hearing. The adopted Plan was submitted to the DWR and the State Library within 30 days of Board approval. Copies of the Notice of Public Hearing and the Resolution of Plan Adoption are included in Appendix D. Draft copies of the Plan were made available prior to the public hearing and final copies of the Plan were available within 30 days following District Board adoption.

Agency Coordination and Public Participation

During plan development, the District coordinated the development of this plan with the Desert Water Agency and the City of Desert Hot Springs.

The primary source of water supply for each of the District's three water systems is groundwater obtained through production wells. An emergency source of water for MSWD is the Coachella Valley Water District (CVWD). MSWD currently has two inter-connections with the CVWD that can be used to provide emergency water to the Main System on a temporary and very limited basis. A third source of water is obtained through an agreement between the Desert Water Agency (DWA) and the Metropolitan Water District of Southern California (MWD) to exchange water from the State Water Project (SWP) for Colorado River water.

Interagency activities included the exchange of data and incorporation of the agencies' comments to the District's Draft UWMP, as appropriate. The intent of this plan is to focus on specific issues unique to the District's water service area. While some regional UWMP issues are introduced in this plan, additional regional information is presented in the MWD, DWA and CVWD UWMPs.

To assist in the preparation of the District's 2005 UWMP, District staff and/or consultants to the District for preparation of the UWMP, attended the following workshops facilitated by DWR and MWD:

DWR: 2005 UWMP Workshop at San Diego County Water Authority, February 1, 2005; and City of Santa Ana, March 1, 2005.

MWD: 2005 Regional UWMP Workshop at the City of Santa Ana, June 6, 2005, as well as additional regional meetings with Metropolitan Water District.

Table 1.2-1 lists the entities with whom the District coordinated in the development of the District's 2005 UWMP.

Table 1.2-1
Mission Springs Water District UWMP Development
Coordination and Public Involvement

	Coordination and Public Involvement Actions					
Entities	**Participated in UWMP preparation**	**Contacted for assistance**	**Sent a copy of Draft UWMP**	**Commented on Draft UWMP**	**Sent Notice of Public Hearing**	**Attended Public Hearing**
MSWD	X	X	X	X	X	X
City of Desert Hot Springs	X	X	X		X	
DWA		X	X		X	
CVWD		X	X		X	
MWD		X			X	
Riverside County			X		X	
City of Palm Springs			X		X	
General Public					X	X

This UWMP details the specifics as they relate to MSWD and its service area and will refer to MWD, DWA, and other agencies, along with reference documents throughout. Appendix D lists the numerous references used in the development of this Plan.

The UWMP is intended to serve as a general, flexible, and open-ended document that periodically may be updated to reflect changes in regional water supply trends, and conservation and water use efficiency policies. This Plan, along with the District's Water Master Plan and other planning documents, will be used by District staff to guide the District's water use and management efforts through the year 2010, when the UWMP is required to be updated again.

1.3 Mission Springs Water District

The District was established in 1953 and was formerly known as Desert Hot Springs County Water District. The District's service area consists of 135 square miles including the City of Desert Hot Springs, 10 smaller communities in Riverside County, and communities in the City of Palm Springs. The District's water source is 100 percent groundwater, drawn from nine active production wells, providing water service to approximately 23,000 people as well as sewer service to approximately 8,000 people in Desert Hot Springs, Desert Crest Country Club and Dillon Mobile Home Park.

Climate Characteristics

The climate in the valley is typical desert with seasonal temperatures varying from about 115 degrees Fahrenheit in the summer to below freezing in the winter. The high mountains that border the valley to the west and north are an effective barrier against easterly moving coastal storms. The average annual rainfall on the valley floor is less than 6 inches; whereas, the average annual rainfall at the crest of the mountains to the west and north of the valley ranges from 30 to 40 inches (DWR, 1964). Evapotranspiration (ETo)[2] in the overall valley region averages about 72 inches annually but is measured at almost 94 inches at the Mission Lakes Country Club in MSWD's service area.[3] Details of monthly average and annual temperatures are shown in Table 1.3-1

Table 1.3-1
Mission Springs Water District Service Area Climate

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg.
Temp. (Fahrenheit)	Avg.	54	57	61	67	74	82	88	87	82	72	61	54	70
	Max	67	71	76	83	90	99	103	102	97	87	75	67	85
	Min	41	43	47	52	58	65	72	72	66	57	46	40	545

Temperature and Rainfall Source: http://www.deserthotsprings.com/demographics.html

MSWD Location

MSWD offices are located in Desert Hot Springs, California. MSWD water supply and distribution system includes three separate and distinct water supply and distribution systems with the largest of the three systems serving the community of Desert Hot Springs and surrounding communities of West Garnet, located south of Interstate 10 (I-10) and West of Indian Avenue, and North Palm Springs. The two smaller systems, Palm Springs Crest System and West Palm Springs Village System, are located approximately

[2] Evapotranspiration (ET) is the loss of water to the atmosphere by the combined processes of evaporation (from soil and plant surfaces) and transpiration (from plant tissues). It is an indicator of how much water crops, lawn, garden, and trees need for healthy growth and productivity. ET from a standardized grass is commonly denoted at ETo.
[3] CVWD Drawing No. 29523 dated May 20, 2003.

five miles west of Desert Hot Springs. These two communities are located on the north side of I-10 abutting the Morongo Indian Reservation. Figure 1-1 shows the MSWD Service Area location.

Water System Facilities

The existing MSWD distribution system consists of three independent water distribution systems: 1) Desert Hot Springs and surrounding area system – encompasses the City of Desert Hot Springs and surrounding unincorporated areas of Riverside County 2) Palm Springs Crest System, and 3) West Palm Springs Village System.

The existing Desert Hot Springs and surrounding area water distribution system serves up to 24 different pressure service zones through either a primary pressure zone or a reduced pressure service zone. In general, the MSWD standard pressure zones are reflective of existing storage tank overflow elevations, hence the term "913 zone" in which the water storage tank overflow is at 913 feet alone mean sea level (msl). As development of the MSWD occurred, numerous storage tanks were constructed at varying elevations to provide adequate pressure to its service area.

The MSWD system, inclusive of all three distribution systems, has approximately 1.26 million linear feet of pipeline.

District facilities within each pressure zone include supply, storage, booster station, and distribution system components as briefly discussed below and more fully described in the District's Draft Comprehensive Water System Master Plan.

MSWD System

900 Zone

The 900 Zone is the lowest primary service zone in the District with its two groundwater wells pumping water from the Garnet Hill Sub-Basin. Well 32 pumps to a new 2 million gallon (mg) tank whose overflow elevation is 913 feet above mean sea level (msl). Well 33 pumps into a 55,000 gallon storage tank which provides suction head to water being boosted to the 913 tank. The 900 Zone provides water service to residential and commercial customers located between topographic elevations of 635 and 900 msl. Water from the 913 tank may also be boosted to the 1070 Zone.

1070 Zone

The 1070 Zone serves the primary pressure zone within the Two Bunch and Valley View service zones. This zone serves portions of the system from topographic elevation of 800 to 970 feet. The 1070 Zone includes groundwater wells, storage tanks, booster pump stations, and distribution system components, such as pipelines and valves. Well 27 and Well 31 provide a combined maximum groundwater supply of 3,000 gallons per minute (gpm) and serve the Valley View service zone through

the Valley View tank, which has a capacity of 0.31 mg. Well 31 provides water to the Two Bunch service zone, which includes two storage tanks with a combined capacity of 1.45 mg. As mentioned above, Wells 31 and 33 from the 900 Zone can also deliver water to the Two Bunch storage facility via the 1070 boosters at the 913 tank. In turn, boosters at the Two Bunch facility can supply water to the 1240 Zone at Terrace. Total well capacity for the 1070 Zone is 5,800 gpm.

1240 Zone

The 1240 Zone includes groundwater wells, storage tanks, booster pump stations, and distribution system components, such as pipelines and valves. Wells 22, 24, and 29 serve the 1240 Zone and have a total source capacity of 4,650 gpm. Each well provides water to the Terrace service zone and to the Terrace tanks. The four steel tanks in this zone have a total storage capacity of 7.1 mg. Also in the 1240 Zone is the Quail Tank. Water for the Quail and Desert View tanks comes from boosters located at the Terrace tank. Water for the Quail tank can also flow by gravity from the Desert View tanks. The level of the Quail tank is controlled by an altitude valve.

1400 Zone

The 1400 Zone serves the primary pressure service zones within the Overhill, Annandale, and Desert View service zones, as well as the reduced pressure service areas of Northridge, Annandale, and Overhill. The 1400 Zone includes groundwater wells, storage tanks, booster pump stations, and distribution systems components. The 1400 Zone is supplied groundwater from four wells with a combined capacity of 7,650 gpm. Well 28 provides source water for the Annandale service zone and tank. Well 27 supplies the source for the Overhill tank and service zone via the boosters at the Valley View tank. Wells 22, 24 and 29 provide source water for the Desert View tank via the boosters at the Terrace tank. Four tanks serve the 1400 Zone with a total storage capacity of approximately 4.4 mg.

1530 Zone

The 1530 Zone includes four tanks: Gateway, Mission Lakes, Northridge, and Red Bud. The 1530 Zone includes storage tanks, booster pump stations, and distribution system components. The 1530 Zone receives groundwater from Well 30, which delivers water to the Mission Lakes service zone and storage tank. All other water supply originates in the lower zones and is delivered by booster pump stations. The four 1530 Zone tanks have a total storage capacity of 3.6 mg.

1630 Zone

The 1630 Zone serves the primary pressures zones within the communities of Vista and Highland. The 1630 Zone also supplies water to the reduced pressure zone within Vista. The 1630 Zone includes storage tanks, booster pumps stations, and distribution system components. The 1630 Zone does not have any groundwater wells. All source water for the 1630 Zone is from the lower zones and is pumped multiple times to reach the higher zones. The 1630 Zone has two water storage tanks with a total storage capacity of 360,000 gallons.

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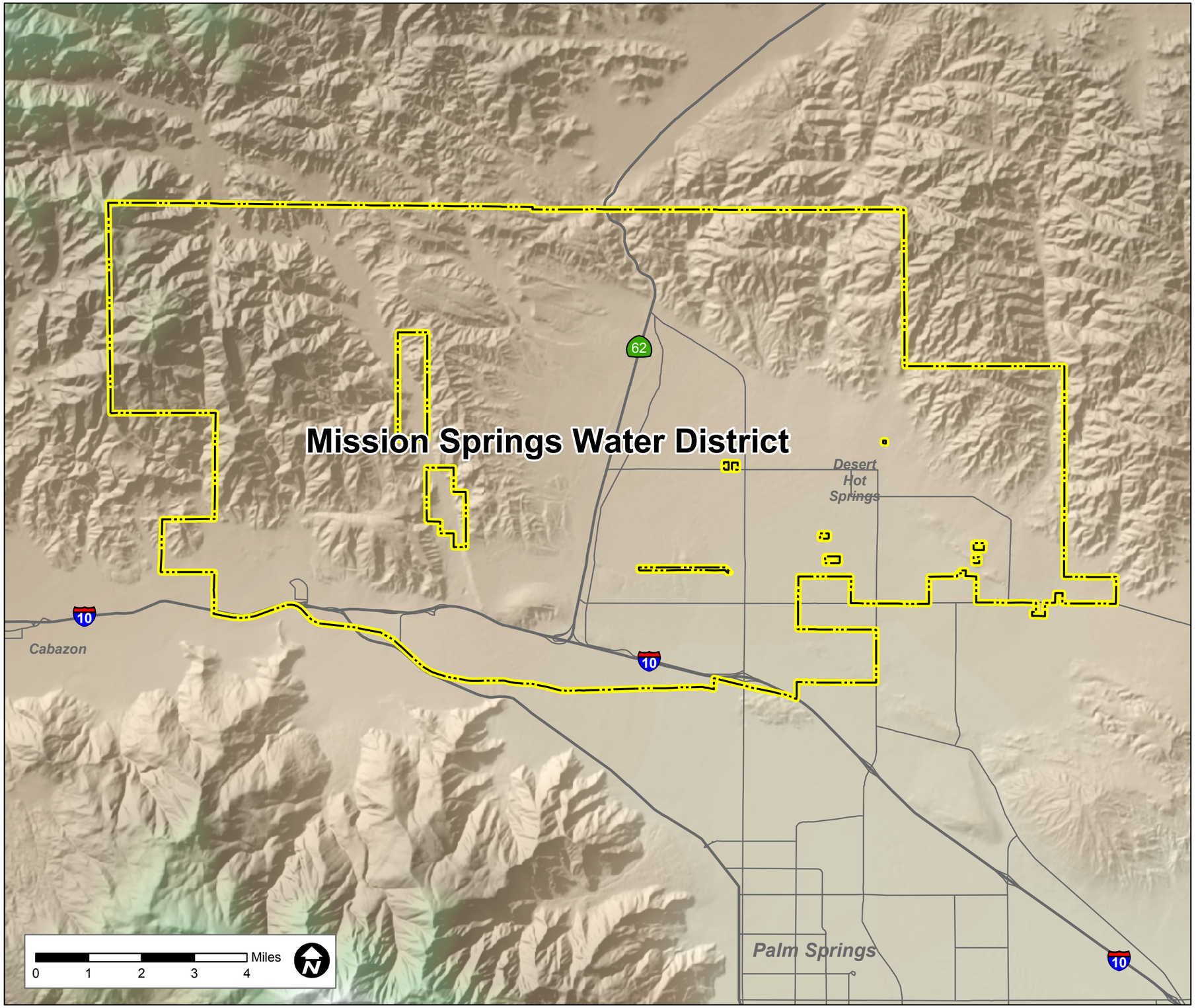

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MSWD Service Area Boundary

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MSWD Service Area

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Figure 1-1

Palm Springs Crest System

Woodridge 1840 Zone

The Woodridge 1840 Zone exclusively serves the Woodridge service zone. This system includes two groundwater wells (Well 25 and Well 25A) with production capacity of 575 gpm, and the Woodridge storage tank with a storage capacity of 0.12 mg. The entire Woodridge system is independent of the MSWD system and the Cottonwood system.

West Palm Springs Village System

Cottonwood 1630 Zone

The Cottonwood 1630 zone is part of the West Palm Springs Village water system, an independent water system, which is separate from the other systems. This system includes two groundwater wells (Well 26 and Well 26A) with a total capacity of 520 gpm. However, Well 26A is currently out of service reducing the total supply for this zone to 350 gpm. The Cottonwood 1630 Zone includes one storage facility with a capacity of approximately 0.28 mg.

Demographics

The MSWD is experiencing rapid population growth. Growth in population and housing has been significant across the entire Coachella Valley over the past 15 years. Growth in the more established City of Palm Springs has been slower, as build out in that community is near. Growth was most rapid in the eastern valley cities of Cathedral City, Palm Desert, La Quinta and Indio, while growth was slower in the smaller and more expensive communities of Indian Wells and Rancho Mirage. Growth in the valley was slowest in the furthest east city of Coachella and the furthest west and north city of Desert Hot Springs. Experts and community members expect that as the fast-growing communities approach build out and experience higher land prices, significant growth will spillover into Coachella and Desert Hot Springs over the next 15 years.[4]

The MSWD Comprehensive Water System Master Plan, includes two population scenarios to forecast both service connections and water usage: a baseline growth scenario that assumes all single family residential (SFR) developments will occur by 2020, and a second, high growth scenario that assumes the same level of SFR development will occur by 2015. However, uncertainty about SFR growth increases further out in time. The Comprehensive Water System Master Plan assumes that SFR connections will drop to 25 percent of the initial rate of growth in the baseline scenario and to 50 percent of the initial rate of growth in the high growth scenario.

Table 1.3-2 presents projected population growth for both the baseline and high growth scenarios in District service area. In order to be conservative, the high growth scenario is used to project water demands for this UWMP.

Table 1.3-2
Mission Springs Water District Population Projections

Population Scenario	2005	2010	2015	2020	2025	2030
Baseline	23,000	31,000	39,000	48,000	50,000	52,000
High Growth	23,000	35,000	48,000	54,000	61,000	67,000

Source: MSWD Comprehensive Water System Master Plan, Section 2.2.

[4] MSWD Comprehensive Water System Master Plan., Section 2.2.

SECTION 2
WATER SOURCES AND SUPPLIES

2.1 WATER SOURCES

The District is organized into three separate water supply and distribution systems, which are defined by the California Department of Health Services (DHS) as:

- Desert Hot Springs System: the largest water system, which includes the City of Desert Hot Springs and several surrounding smaller communities including Painted Hills.
- Palm Springs Crest System: the eastern most of the two small systems.
- West Palm Springs Village System: the western most of the two small systems.

The existing Desert Hot Springs System is a combination of water distribution systems, some of which are interconnected and others that are completely independent. The Palm Springs Crest and West Palm Springs Village systems are located about 5 miles from the Desert Hot Springs System and there are no interconnects between the systems. Because of the distance and topographical constraints, there are currently no plans to integrate these three systems (URS, 2005).

MSWD's water source is 100 percent groundwater, drawn from seven wells that supply the Desert Hot Springs System, with two additional wells being installed in 2005, and two wells each for the Palm Springs Crest System and the West Palm Springs Village System. Additional production from the Mission Creek Sub-Basin comes from the Coachella Valley Water District that has six production wells located in an area overlying the south central portion of the sub-basin, and from approximately 200 private wells for domestic use.

MSWD is located in the northwestern portion of the Upper Coachella Valley, in eastern Riverside County. Its service area contains a portion of the Upper Coachella Groundwater Basin and includes Mission Creek Sub-Basin, Garnet Hill Sub-Basin, Whitewater Sub-Basin, San Gorgonio Pass Sub-Basin, and the Desert Hot Springs Sub-Basin, as presented in Figure 2-1. These sub-basins were formed by the large and active faults that make up the San Andreas Fault system. All of the sub-basins, except for Desert Hot Springs are "cold-water" basins that can provide potable water. The Desert Hot Springs Sub-Basin is a "hot-water" basin that is highly mineralized with water temperatures exceeding 100 degrees Fahrenheit and is not used to supply potable water. However, this hot, highly mineralized water is important to the economy as it supports numerous spa resorts and hotels within the city of Desert Hot Springs.

Although the MSWD service area boundary overlies several sub-basins, Figure 2-2 indicates that currently all of the producing water supply wells for the main MSWD System are located within the Mission Creek Sub-Basin. The Palm Springs Crest System

and the West Palm Springs Village System are both supplied by wells that draw from the Cabazon Storage Unit of the San Gorgonio Pass Sub-Basin.

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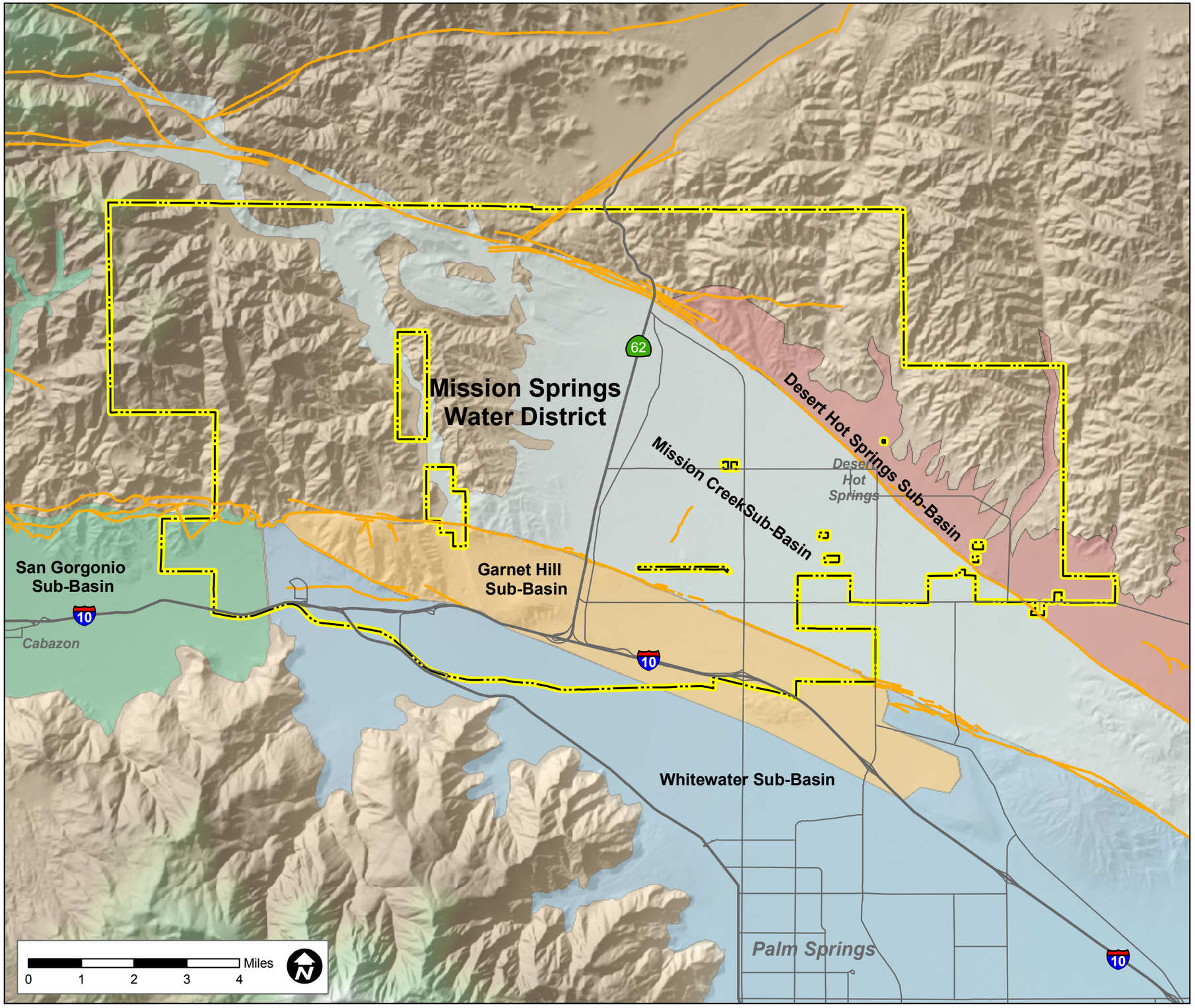

Legend

- MSWD Service Area Boundary
- Known Fault Lines

UWMP Sub-Basins

- Desert Hot Springs Sub-Basin
- Mission Creek Sub-Basin
- Garnet Hill Sub-Basin
- Whitewater Sub-Basin
- San Gorgonio Sub-Basin

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MSWD Groundwater Sub-basins

MSWD PSOMAS

Figure 2-1

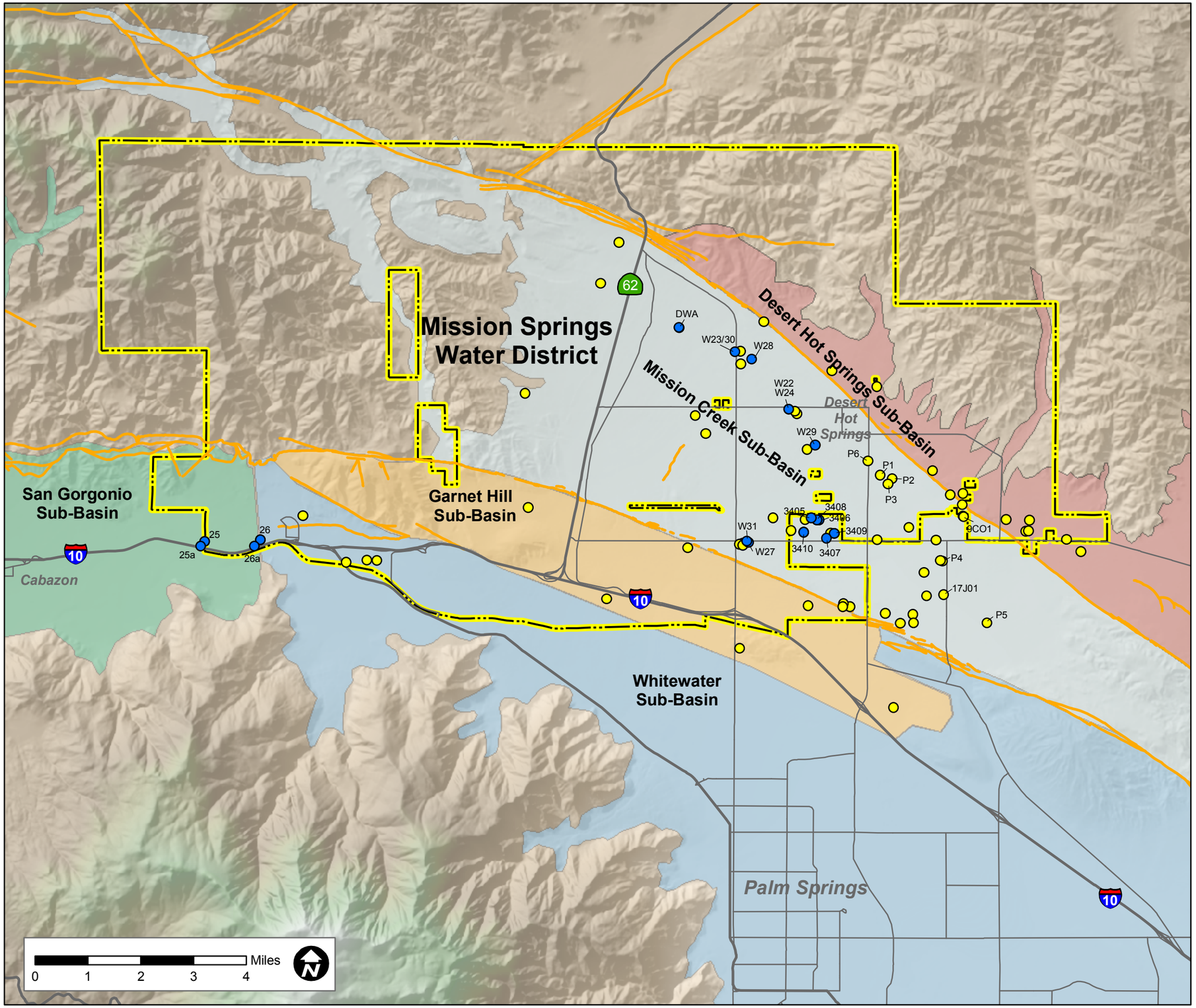
2005 Urban Water Management Plan
Mission Springs Water District

Legend

- MSWD Service Area Boundary
- Known Fault Lines
- PrivateWells
- PublicWells

UWMP Sub-Basins

- Desert Hot Springs Sub-Basin
- Mission Creek Sub-Basin
- Garnet Hill Sub-Basin
- Whitewater Sub-Basin
- San Gorgonio Sub-Basin



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MSWD Well Locations

MSWD PSOMAS

Figure 2-2

Mission Creek Sub-Basin

The Mission Creek Sub-Basin is located in the Upper Coachella Valley in the north central portion of Riverside County, California. The Mission Creek Fault and the Banning Fault bound the northern and southern edges of the sub-basin, respectively, and are the major groundwater controls. Both act to limit groundwater movement as these faults have folded sedimentary deposits, displaced water-bearing deposits, and caused once permeable sediments to become impermeable (California Department of Water Resources [DWR], 1964).

Major surface water features in the area are the Whitewater River, Mission Creek, San Gorgonio River, Little and Big Morongo Washes, and Long Canyon. The MSWD service area and groundwater sub-basins are presented on Figure 2.1.

The main water bearing units of the Mission Creek Sub-Basin are relatively undisturbed and unconsolidated Holocene and late Pleistocene alluvial deposits. These deposits form as detritus, eroding from the surrounding San Bernardino and Little San Bernardino Mountains, first filled topographic depressions and then are deposited on the piedmont alluvial fans. The individual beds are lenticular in shape and not extensive, but coalesce with other beds to form larger water bearing areas. Units included in these water-bearing deposits are: Ocotillo conglomerate, Cabazon fanglomerate and Holocene alluvial and sand dune deposits.

The Pre-Tertiary Crystalline rocks that underlie and constitute the northwestern and southeastern borders of the sub-basin are a complex assemblage of gneisses and schists, Precambrian in age, and have been intruded by younger granitic rocks associated with the Southern California batholith of Cretaceous age (DWR, 2003). DWR classified these rocks as “non-water-bearing.” However, DWR (2003) also acknowledges that in the surrounding mountains, the crystalline rocks may be the only source of water and that groundwater wells extract water from along faults and fractures within the system. With the amount of faulting in the area due to the San Andreas Fault Complex, it is possible that this igneous-metamorphic complex is highly fractured and may transmit groundwater more readily than previously assumed.

Groundwater Levels and Storage. Regional water levels have been declining since the early 1950’s due to scarce annual precipitation and groundwater extractions (DWR 2003). Groundwater level data indicate that since 1952, water levels have declined at a rate of 0.5 to 1.5 feet per year (CVWD 2000). Current water levels vary in domestic wells from 140 to 721 feet below ground surface with an average depth to water being 372 feet (MSWD 2000). The recently constructed replenishment program is expected to stabilize or reverse the water level decline.

Total groundwater storage capacity for the Mission Creek Sub-Basin is estimated to be 2.6 million acre-feet (MAF) (DWR 2003). This is the amount of groundwater the sub-basin can theoretically contain using a maximum depth below surface of 1,000 feet.

Based on more recent analysis, actual groundwater in storage in the Mission Creek Sub-Basin is estimated at 1.4 MAF (MSWD 2000).

Garnet Hill Sub-Basin

The Garnet Hill Sub-Basin which lies immediately south of the Mission Creek Sub-Basin, underlies approximately 20 square miles and is subordinate to the Indio Sub-Basin (DWR, 2003). The basin is bounded on the north by the Banning fault, on the south by the Garnet Hill fault, and on the east and west by non-water to semi-water bearing rocks.

The area between the Garnet Hill fault and the Banning fault, named the Garnet Hill subarea by DWR (2003), was considered a distinct sub-basin by the USGS because of the effectiveness of the Banning and Garnet Hill faults as barriers to groundwater movement. This is illustrated by a difference of 170 feet in groundwater level elevation in a horizontal distance of 3,200 feet across the Garnet Hill fault, as measured in Spring 1961. Some recharge to this sub-basin is believed to originate from the Mission Creek Sub-Basin from subsurface flow across the fault as well as surface recharge from local streams that pass through during periods of high flood flows.

Total groundwater storage capacity for the Garnet Hill Sub-Basin is estimated to be 1.0 MAF (DWR 2003). No municipal groundwater production is reported to occur in the sub-basin (CVWD, 2005).

Desert Hot Springs Sub-Basin

The Desert Hot Springs Sub-Basin is bounded to the north by the Little San Bernardino Mountains and to the southeast by the Mission Creek and San Andreas Faults. The San Andreas Fault separates the Desert Hot Springs Sub-Basin from the Whitewater River Sub-Basin and serves as an effective barrier to groundwater flow. The Desert Hot Springs Sub-Basin is not extensively developed except in the area of Desert Hot Springs. Relatively poor groundwater quality has limited the use of this sub-basin for potable supply.

Total groundwater storage capacity for the Desert Hot Springs Sub-Basin is estimated to be 4.1 MAF (DWR 2003). No municipal groundwater production is reported to occur in the sub-basin (CVWD, 2005).

Whitewater River Sub-Basin

The Whitewater River Sub-Basin, part of what was once referred to as the Indio Sub-Basin, comprises the major portion of the floor of the Coachella Valley and encompasses approximately 400 square miles. Beginning approximately one mile west of the junction of State Highway 111 and Interstate 10, the Whitewater River Sub-Basin extends southeast approximately 70 miles to the Salton Sea. The sub-basin is bordered on the southwest by the Santa Rosa and San Jacinto Mountains, and is separated from the

Garnet Hill, Mission Creek and Desert Hot Springs Sub-Basins to the north and east by the Garnet Hill and San Andreas Faults.

The limit of the Whitewater River Sub-Basin along the base of the San Jacinto Mountains and the northeast portion of the Santa Rosa Mountains coincides with the Coachella Valley groundwater basin boundary. The Garnet Hill Fault, which extends southeastward from the north side of San Gorgonio Pass to the Indio Hills, is a relatively effective barrier to groundwater movement in the Garnet Hill Sub-Basin. The San Andreas Fault, extending southeastward from the junction of the Mission Creek and Banning faults in the Indio Hills and continuing out of the basin on the east flank of the Salton Sea, is also an effective barrier to groundwater movement.

The historic fluctuations of water levels within the Whitewater River Sub-Basin indicate a steady decline in the levels throughout the sub-basin prior to 1949.

Cabazon Storage Unit of the San Gorgonio Pass Sub-Basin

A portion of the MSWD western service area is underlain by the San Gorgonio Pass Sub-Basin. The portion of the Coachella Valley Groundwater Basin that lies entirely within the San Gorgonio Pass is described as the San Gorgonio Pass Sub-Basin (DWR 1964). This sub-basin is bounded on the north by the San Bernardino Mountains and by semi-permeable rocks, and on the south by the San Jacinto Mountains. A surface drainage divide between the Colorado River and South Coastal Hydrologic Study Areas bounds the sub-basin on the west. The eastern boundary is formed by a bedrock constriction that creates a groundwater cascade into the Indio Sub-Basin (DWR 1964).

The main water bearing deposits in the sub-basin are Holocene and Pleistocene age alluvium and Pliocene to Pleistocene age San Timoteo Formation. Holocene alluvium is mostly gravel and sand and, where saturated, would yield water readily to wells. Within the sub-basin, these deposits lie largely above the water table and contribute little water to wells. Holocene alluvium is found in the tributaries of the sub-basin and allows runoff to infiltrate and recharge the sub-basin (DWR, 1987). Older, Pleistocene-age alluvium contains sand and gravel, but also large amounts of clay and silt. These deposits yield moderate amounts of water to wells (DWR 1987).

Groundwater Level Trends. Groundwater levels throughout the sub-basin declined significantly from 1933 through 1939 during the construction of the San Jacinto Tunnel as large quantities of groundwater were pumped and diverted into the Indio Sub-Basin (SGPWA 2001). Groundwater levels in the eastern part of the sub-basin rose or stayed the same between 1967 and 1987 (DWR, 1987).

Groundwater Storage Capacity. Total storage capacity of the sub-basin was estimated to be about 2.7 MAF by DWR (1964). A re-evaluation by DWR (1987) estimates total storage capacity to be about 2.2 million acre-feet (MAF).

Groundwater Quality. Groundwater in the sub-basin is characterized as predominantly calcium-sodium bicarbonate type (DWR, 1987). Total dissolved solids (TDS) content for selected samples from municipal wells ranged from 106 to 205 mg/L (DWR, 1987).

The San Gorgonio Pass Sub-Basin is subdivided into a series of storage units that include: the Banning Bench, Banning, Beaumont, and Cabazon storage units (Boyd, 1969). The Cabazon storage unit within the San Gorgonio Basin is recharged naturally with runoff from the adjacent San Jacinto and San Bernardino Mountains.

Cabazon Storage Unit. The Cabazon storage unit encompasses approximately 11 square miles. The Cabazon storage unit is located near the western boundary of the MSWD boundary. MSWD operates four wells in the Cabazon storage unit. Other groundwater users in the Cabazon storage unit include Desert Hills Premium Outlets and Cabazon Water District and collectively have produced approximately 1,200 acre-ft/yr of groundwater over the last five years.

2.2 WATER SUPPLY

The primary source of water supply for each of the three water systems is groundwater obtained through production wells. The MSWD service area currently includes seven wells that supply the Desert Hot Springs System, with two additional wells being installed in 2005, and two wells each for the Palm Springs Crest System and the West Palm Springs Village System. An emergency source of water for MSWD is the CVWD. MSWD currently has two inter-connections with the CVWD that can be used to provide emergency water to the Main System on a temporary and very limited basis.

A third source of water is obtained through an agreement between the DWA and MWD to exchange Colorado River water for SWP water. DWA obtains this water through a turnout from the Colorado River Aqueduct and manages a recharge facility near the turnout that enables the water (when it is available) to replenish the aquifer used by MSWD and CVWD. Table 2.2-1 provides a comparison of the existing water supply capacity with projected average daily demand (ADD) and maximum daily demand (MDD) in the MSWD service zone.

Table 2.2-1
Comparison of Existing Water Supply Capacity vs. Projected MDD

Well Supply Zone	Study Year	Projected ADD (mgd)	Projected MDD[1] (mgd)	Available Supply 24-hr Continuous Pumping[2] (mgd)	Available Supply Off Peak Pumping Only[3] (mgd)	Available Supply 24-hr Pumping w/o Largest Well[4] (mgd)	Most Critical Surplus or Shortfall[5] (mgd)	Number of Additional Wells Needed[6]	Comments
All MSWD Zones	2010	13.79	27.58	23.29	17.47	n/a	n/a	8	capacity varies
	2015	18.81	37.62	23.29	17.47	n/a	n/a	4	capacity varies
	2020	21.54	43.08	23.29	17.47	n/a	n/a	2	capacity varies
	2025	24.08	48.16	23.29	17.47	n/a	n/a	2	capacity varies
							Total Wells Needed	**16**	
West Palm Springs Village System									
Wells 26 & 26A	2010	0.14	0.29	0.53	0.42	0.20	-0.09	1	275 gpm well
	2015	0.19	0.38	0.53	0.42	0.20	-0.18	0	
	2020	0.21	0.43	0.53	0.42	0.20	-0.23	0	
	2025	0.24	0.48	0.53	0.42	0.20	-0.28	0	
							Total Wells Needed	**1**	
Palm Springs Crest System									
Wells 25 & 25A	2010	0.07	0.14	1.06	0.84	0.27	0.13	0	
	2015	0.10	0.20	1.06	0.84	0.27	0.07	0	
	2020	0.11	0.21	1.06	0.84	0.27	0.06	0	
	2025	0.13	0.25	1.06	0.84	0.27	0.02	0	
							Total Wells Needed	**0**	

Source: URS, 2005

[1] MDD computed using the ADD and a multiplier of 2.0

[2] 24-Hour Pumping Available Supply computed by converting the measured pumping capacity from gpm to mgd.

[3] Off-Peak Pumping is MSWD's normal operating mode in which its wells are only operated during the electrical off-peak hours (18 hours between 5:30 PM and 11:30 AM) as a cost-saving measure. Off-Peak Hour Pumping supply computed by multiplying the 24 hour pumping capacity by the ration of 18/24. .

[4] 24-Hour Pumping w/o Largest Well. Supply computed by subtracting the largest well capacity from the 24-hour continuous pumping supply.

[5] The Most Critical Surplus (Available Supply exceeds Demand) or Shortfall (MDD exceeds Available Supply) is computed by first subtracting the MDD from each of the three pumping scenarios and accounting for whether they are pumping 18 hours or 24 hours. The largest surplus or shortfall that is computed using these three calculations is shown.

[6] The number of required wells (if any) is computed by dividing the Most Critical Shortfall by the minimum assumed capacity of each well (typically up to a maximum of 1500 gpm or 1.62 mgd for an 18-hour pumping period per day for any one well.

Import Connections

An emergency source of water for MSWD is the CVWD. MSWD currently has two inter-connections with the CVWD that can be used to provide emergency water to the Main System on a temporary and very limited basis.

DWA is the MSWD's wholesale supplier for the SWP. As a State Water Contractor, DWA is entitled to SWP water. A conveyance system to provide SWP water directly to the Coachella Valley currently does not exist. However, the Colorado River Aqueduct (CRA) does go through the valley. DWA has entered into an agreement with MWD to exchange SWP water for CRA water.

In 1997, MWD tapped into the CRA for DWA and installed a 48-inch turnout just south of Indian Avenue and west of Worsley Road. DWA acquired approximately 190 acres of land in the vicinity of the turnout in order to construct spreading ponds to hold the Colorado River water as it percolates downward into the Mission Creek Sub-Basin. A test well was also installed by DWA to monitor the flow of water underground. DWA completed construction of 60 acres of recharge basins as the Mission Creek Recharge Facilities in June 2002. Recharge commenced in November 2002 with 4,733 AF of water introduced into the basins in the remainder of 2002. A lack of available water resulted in no recharge in 2003. An additional 5,564 AF of water was recharged in October, November, and December of 2004. Because of the very wet conditions in 2005, recharge between January and May of that year totaled 6,500 AF (URS, 2005). Based on information obtained from DWA, the total recharged in calendar 2005 should approach 27,000 AF.

URS (2005) reported that the number of recharge basins in operation depends upon the availability of water. In 2005, only about two-thirds (40 acres) of the 60 acres of basins were being used at one time. Based on the current excellent rate of about 4 feet per day, and accounting for some downtime for maintenance, the 60 acres of basins could recharge as much as 60,000 acre-feet per year (AFY), which far exceeds the currently available supply. Even if recharge rates decreased over time to as little as 1 foot per day, the capacity would still be at least 15,000 AFY.

The possibility of continued recharge depends largely on the availability of future water from the MWD's Colorado River Aqueduct and on MWD's exchange agreements with DWA. This source of water does provide a significant amount of inflow to the northwesterly portion of the Mission Creek Sub-Basin and reduces the amount of overdrafting of the aquifer. In addition, assuming that sufficient water is available, this recharge facility provides for conjunctive use possibilities, such as water banking of Colorado River water. Because of the excess capacity and the lack of available water, DWA does not have any plans for expanding the facility any time soon. Even if water was available, most of the remaining 130 acres not currently used for recharge are located in Mission Creek, and any facilities constructed in the creek would be subject to damage from flood events. Any expansion of the recharge facilities would most likely require the purchase of additional land.

Reservoirs/Tanks

The MSWD water supply system does not contain any open reservoirs but does consist of assorted water tanks distributed throughout the MSWD service area to supply general water requirements on an as-needed basis. Table 2.2-2 provides a summary of the available water storage capabilities within the MSWD service area.

Table 2.2-2
Summary of Available Water Storage Capacity in MSWD Service Area

Area	No. of Tanks	Total Storage Capacity (million gallons)
Mission Creek Sub-Basin		
900 Zone	1	2.0
1070 Zone	3	1.76
1240 Zone	4	7.14
1400 Zone	4	4.42
1530 Zone	4	3.57
1630 Zone	2	0.36
	Sub-Total	19.25
Cabazon Storage Unit		
1840	1	0.12
	Sub-Total	0.12
	TOTAL	19.37

Source: URS (2005)

Groundwater

MSWD draws 100 percent of its water supply from groundwater. Table 2.2-3 lists the active wells including age, depth and capacity.

Table 2.2-3
Active Wells

Well No.	Age (years)	Depth (feet)	Capacity (gpm)
Mission Creek Sub-Basin			
MW-22	35	800	1,750
MW-24	32	800	1,200
MW-27	25	400	1,100
MW-28	16	900	1,900
MW-29	13	1,070	1,700
MW-30	13	1,100	825
MW-31	12	1,000	1,900
San Gorgonio Pass Sub-Basin, Cabazon Unit			
MW-25	48	465	400
MW-25A	3	600	175
MW-26	74	575	350
MW-26A	4	285	170

Table 2.2-4 summarizes the amount of groundwater pumped by the District for the last five years. Table 2.2-5 projects the amount of water that will be pumped from each groundwater sub-basin in the future.

Table 2.2-4
Historic Groundwater Production
(AFY)

Well No.	2000	2001	2002	2003	2004
Mission Creek Sub-Basin					
MW-22	1632.8	1684.09	1715.10	1776.16	1962.99
MW-24	718.62	985.94	610.90	875.77	1315.15
MW-27	378.88	449.41	498.23	483.78	501.45
MW-28	1210.21	1260.23	1368.26	1323.79	1506.90
MW-29	1575.24	1255.92	1664.05	1823.74	1950.23
MW-30	409.12	396.02	416.25	468.48	761.06
MW-31	1929.28	1810.98	1829.19	1815.28	2041.14
3405	321.3	119.8	436.1	470.4	731.3
3408	736.9	68.6	734.7	791.6	701.7
3409	867.1	1309.8	715.1	1012.8	956.6
3410	1251.1	925.9	1509.6	1175.5	1138.3
San Gorgonio River Sub-Basin Cabazon Unit					
MW-25	55.63	59.71	57.91	24.14	11.86
MW-25A	0	0	0	30.85	45.60
MW-26	103.48	76.81	107.03	113.78	99.24
MW-26A	0	2.03	0	0	0

Table 2.2-5
Projected Groundwater Production (High Growth Scenario)
(AFY)

Basin	2005	2010	2015	2020	2025	2030(*)
Mission Creek Sub-Basin	9,950	14,160	19,380	16,780	20,720	20,720
SGPGWB – Cabazon Unit	150	240	320	370	410	460
Total	9,200	14,400	17,700	17,150	21,130	21,180

Source: URS, 2005
Mission Creek Sub-Basin from URS, 2005, reduced by recycled water projections from Table 4.2-2 on page 4-10.
Note:* Year 2030 was provided by URS (2005) and was estimated based on a 12% increased demand from 2025.

Recycled Water

Recycled water is defined by the California Water Code as "water, which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore considered a valuable resource." The availability of recycled water is limited to water generated as part of the wastewater treatment associated with sewage colleted from sewered residential, commercial, and industrial properties.

MSWD currently operates two wastewater treatment plants serving a total of approximately 6,000 developed parcels. The plants are the Horton Treatment Plant and the Desert Crest Treatment Plant with capacities of 2,500,000 gal/day (2,800 AFY) and 180,000 gal/day (202 AFY), respectively. The disposal of effluent from both the Horton and Desert Crest treatment plants is accomplished by utilizing percolation ponds located within the plants on the southwest (cold water) side of the Mission Creek Fault. In addition, effluent is used for irrigation and wash down at the plants. The District's wastewater treatment plants currently treat wastewater using a secondary treatment process.

MSWD is currently evaluating the potential for establishing a new wastewater treatment plant as well as upgrading the existing treatment plants to use the generated recycled water for other uses including landscape irrigation for golf courses and parks. MSWD has prepared an Appraisal Report evaluating the potential to develop a recycled water system within the District through the Bureau of Reclamation's Title XVI of Public Law 102-575 process. The District is just embarking on the next phase of this process, which is the preparation of a Feasibility Report along with environmental analysis. To date, financing for this program has been through federal grants and matching District funds. Once this planning process is complete, it is envisioned that the District will move forward to recycle most, if not all, of its wastewater to help provide additional water supplies to its customers.

For the purposes of this UWMP, it is assumed that MSWD will aggressively pursue wastewater reclamation and recycled water use. It is further assumed that the plan will be initially operable by 2015 and by 2020 will reclaim and reuse all of the wastewater generated within the service area for irrigation of golf courses and other suitable landscaping purposes. The wastewater flow projections are reduced by 10% to account for treatment system losses and the remainder is projected as a source of water supply.

SECTION 3
WATER QUALITY

3.1 WATER QUALITY OF EXISTING SOURCES

Water quality for public drinking water systems is regulated by the U.S. Environmental Protection Agency (U.S. EPA) and the California Department of Health Services (DHS). The Safe Drinking Water Act has established national primary and secondary drinking water standards for public water systems. Through primacy, the State of California has established more stringent standards than those enacted by EPA. Primary drinking water standards include regulations over the following type of constituents: turbidity, microorganisms, disinfection byproducts, disinfectants, inorganic chemicals, organic chemicals, and radionuclides. Secondary drinking water standards include the following components: aluminum, chloride, color, corrosivity, fluoride, foaming agents, and odor.

As required by the Safe Drinking Water Act, which was reauthorized in 1996, the District provides annual Water Quality Reports to its customers; also known as Consumer Confidence Reports. This mandate is governed by the EPA and the DHS to ensure the safety of potable water. As mentioned earlier, the District's source of water is 100 percent from groundwater.

3.1.1 Groundwater

Historic groundwater quality data for the Mission Creek Sub-Basin was evaluated by Slade (2000) from samples taken from MSWD and CVWD wells between 1961 and 1998 and is summarized as follows:

- Groundwater in the sub-basin ranges in character from a calcium-magnesium bicarbonate type in the northwest to sodium chloride-sulfate type in the southeast.
- Total dissolved solids (TDS) concentrations in groundwater samples taken from MSWD/CVWD municipal wells ranged from 271 mg/L to 490 mg/L. All samples analyzed were below the State of California recommended Secondary Maximum Contamination Level (MCL) of 500 mg/L for TDS.
- Total hardness has historically ranged from 56 mg/L to 252 mg/L as measured in municipal wells. These concentrations indicate moderately hard to hard water.
- The pH concentration of groundwater in the MCGS has ranged from 7.2 to 8.3.
- Nitrate as NO_3 concentrations have ranged from not detected (ND) to 7.6 mg/L.
- Iron (Fe) concentrations have ranged from ND to 0.242 mg/L, below its State of California Secondary MCL of 0.300 mg/L.
- Magnesium (Mg) ranged in concentration from ND to 0.010 mg/L, below its State of California Secondary MCL of 0.050 mg/L.

Table 3.1 presents general water quality characteristics of groundwater produced from selected wells in each sub-basin.

Table 3.1
Summary of Groundwater Quality from Selected Wells in MSWD

Constituent/Year	1998	2001	2002	2003	2004
Mission Creek Sub-Basin					
Nitrates as NO_3 (mg/L)	<2-7.41 (1999)	ND-6.7	ND-6.8	ND-5.6	3.7-6.2 (2005)
Total Dissolved Solids (mg/L)	310-535 (1999)		270-490		
VOCs	ND	ND	ND	ND	ND
MTBE	ND	ND	ND	ND	ND
NDMA	NT	NT	NT	NT	NT
San Gorgonio River Sub-Basin Cabazon Unit					
Nitrates as NO_3 (mg/L)	12	3.9-11	3.2-11	3.5-12	3.4-12 (2005)
Total Dissolved Solids (mg/L)	230-246 (1999)		220-270		
VOCs	ND (1999)		ND		ND
MTBE	ND	ND	ND	ND	ND
NDMA	NT	NT	NT	NT	NT

Notes:
ND=Not detected; NT=Not tested;

Nitrates

Nitrates as NO_3 was detected but all samples were below the MCL of 45 mg/L.

Total Dissolved Solids

Total dissolved solids ranged from 200 mg/L to 535 mg/L. Well 24 reported that the secondary standard of 500 mg/l for TDS was exceeded in the year 1999 at 535 mg/L and was generally high for the years 1993, 1997, and 2002.

Volatile organic compounds (VOC)

VOCs were reported as being not detected in all samples.

Methyl Tertiary-Butyl Ether (MTBE)

MTBE was reported as not detected in all samples collected and reported by MSWD.

N-nitrosodimethylamine (NDMA)

NDMA was not tested for in any samples reported by MSWD.

Emerging Contaminants

No emerging contaminants have been identified in any samples reported by MSWD.

Other

In addition, URS (2005) reviewed the water quality testing data received from the respective agencies and has identified water quality parameters that equaled or exceeded the published regulatory standards. The wells and the specific standards in question are presented below and are based on laboratory data received between the years 1989 and 2003.

- Well 24 reported to have a gross alpha value of 15 pCi/L that is the maximum limit for primary drinking water and Title 22 standards.
- Well 24 had a violation of the concentration of Lindane (a pesticide) at 0.4 μg/L in 1989. The recommended primary drinking water and Title 22 limit is 0.2 mg/L. In the year 1992 Lindane was not detected.
- Well 26 had a reading of 6 μg/L for antimony that is also the maximum recommended value under the primary drinking water and Title 22 standards.
- Well 26A had high uranium values from 19 to 21.3 pCi/L for 6 consecutive samples in the years 2001 to 2004. The maximum Title 22 drinking water concentration is 20 pCi/L.
- Well 26A had gross alpha counts of 23 to 27 pCi/L for three samples taken in 2001 through 2002. The Title 22 standard is 15 pCi/L. This well is not currently in service.

Water Quality Programs

The MSWD's existing groundwater quality was reviewed and found to be excellent. Based on trends extrapolated from water quality data for the period ranging from 1984 to 2004, future groundwater quality is also expected to be of high quality. No water quality programs are anticipated.

3.1.2 Imported Water

Assuming that DWA and CVWD continue recharging the Mission Creek Sub-Basin with CRA water (as proposed in each Agency's 2005 UWMP Update), specific concerns related to the existing water quality include salinity and other compounds that have been detected in CRA water. The following discussion provides an overview of potential concerns related to imported water use in the District.

Salinity

Water from the Colorado River Aqueduct has the highest level of salinity of all MWD's sources of supply, averaging 650 mg/L during normal water years.[5] Several actions have been taken on the state and federal level to control the salinity of the river such as the Colorado River Basin Salinity Control Act in 1974 and formation of the Colorado River Basin Salinity Control Forum. In 1975, water quality standards and a plan for controlling salinity were approved by the Environmental Protection Agency.

Perchlorate in Colorado River

Perchlorate is a contaminant of concern and is known to have adverse effects on the thyroid. Perchlorate has been detected at low levels in the Colorado River water supply. Perchlorate is difficult to remove from water supplies with conventional water treatment. Successful treatment technologies include nanofiltration, reverse osmosis, biological treatment, and fluidized bed bioreactor treatment. MWD continues to monitor perchlorate contamination of the Colorado River as well as research various treatment options.

Uranium

Uranium is a contaminant of concern in the water from the Colorado River. There are uranium mine tailings located approximately 600 feet from the river. Rainfall seeps through the tailings and contaminates the local groundwater which flows to the river. In 2003, an interim action system was implemented that intercepts some of the contaminated groundwater prior to reaching the river. The Department of Energy is preparing an Environmental Impact Statement that will evaluate the possibility of moving the pile, capping it in place, and other alternatives. Uranium levels at MWD's intake range from 1 to 5 pCi/L whereas the California drinking water standard is 20 pCi/L.[6]

N-nitrosodimethylamine (NDMA)

NDMA is an emerging contaminant that may have an impact on the water supply. Although MWD's water supplies are non-detect for NDMA, there is a concern that chlorine and monochloramine can react with organic nitrogen precursors to form NDMA.

Hexavalent Chromium (Chromium VI)

Currently the MCL for total chromium is 0.05 mg/L, which includes Chromium VI. California DHS is to set a MCL for Chromium VI, however, the Office of Health Hazard Assessment must first establish a public health goal. MWD samples for Chromium VI and monitors levels within the Colorado River because of Chromium VI detection in groundwater near the river. MWD is involved in a Technical Work Group that reviews monitoring results and remediation plans for groundwater contaminated with Chromium VI at a site located adjacent to the Colorado River near Topock, Arizona.

[5] Metropolitan Water District of Southern California, Regional Urban Water Management Plan, September 2005 Draft
[6] Metropolitan Water District of Southern California, Regional Urban Water Management Plan, September 2005 Draft

3.2 WATER QUALITY EFFECT ON WATER MANAGEMENT STRATEGIES AND SUPPLY RELIABILITY

The Mission Creek Sub-Basin is located beneath both developed and undeveloped areas. Given the high permeability of the surface sediments and the presence of residential/commercial/industrial activities within the sub-basin boundaries, there is a possibility that the underlying groundwater could be impacted by various activities currently occurring or proposed in the sub-basin. While not all inclusive, the following activities may pose the greatest threat to the existing groundwater quality in the sub-basin:

- Abandoned/inactive wells
- Commercial/industrial discharges
- Water import
- Septic systems

MSWD is actively pursuing a program to properly place residences/businesses in the district on the MSWD water supply system and promoting the proper abandonment of unused/inactive wells. In addition, MSWD is converting residences/businesses currently on septic systems to the MSWD sewer collection and treatment system.

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SECTION 4
WATER RELIABILITY PLANNING

4.1 RELIABILITY OF WATER SUPPLIES FOR MISSION SPRINGS WATER DISTRICT

Reliability is a measure of a water service system's expected success in managing water shortages. The combination of demand management and supply augmentation options help to reduce the frequency and severity of shortages.

MSWD and all Southern California communities and water suppliers are facing increasing challenges in their role as stewards of water resources in the region. Although the District is currently 100 percent dependent on groundwater, the region faces a growing gap between its water requirements and its firm water supplies. Increased environmental regulations and the collaborative competition for water from outside the region have resulted in reduced supplies of imported water, making local supplies even more vital. Continued population and economic growth also contribute toward increased water demands within the region, putting an even larger burden on local supplies.

The reliability of the District's water supply is dependent on the reliability of groundwater supplies, supplemented by recycled and imported water. Imported supplies are managed and delivered by MWD through DWA. The following sections will discuss these agencies as well as the Regional Water Quality Control Board, their roles in water supply reliability, and the near and long-term efforts they are involved with to ensure future reliability of water supplies to the District and the region as a whole.

4.1.1 Regional Agencies and Water Reliability

Desert Water Agency

Desert Water Agency (DWA) is the wholesale water agency for the MSWD service area. As such, both agencies are responsible for ensuring that adequate water supplies are available to MSWD customers, now and into the future. Because MSWD and CVWD have retail customers served from the Mission Creek Sub-Basin, and because CVWD is also a wholesaler, both DWA and CVWD (as *wholesalers* within the sub-basin) and CVWD and MSWD (as *retailers* within the sub-basin) are working together to ensure an adequate quantity and quality of water produced from the Mission Creek Sub-Basin. DWA and CVWD are also SWP contractors and through their exchange agreement with MWD, began recharging Colorado River Aqueduct water into the Mission Creek Sub-Basin in 2002 with 4,733 acre-feet being recharged. Recharge operations were curtailed in 2003 due to dry-year conditions. In 2004, 5,564 acre-feet were recharged. For calendar year 2005 the total volume recharged is estimated to be as much as 27,000 acre-feet due to the unusually wet-year conditions experienced in California. This recharge program is jointly administered by DWA and CVWD with facilities constructed and operated by

DWA and is expected to increase as groundwater extraction increases to meet projected growth.[7]

DWA has implemented Ground Water Replenishment and Assessment Programs for both the Mission Creek and Whitewater Sub-Basins. These programs were established to augment groundwater supplies and arrest or retard declining water table conditions within the Upper Coachella Valley, specifically the Whitewater River Sub-Basin within DWA's retail service area and the Mission Creek Sub-Basin within DWA's boundary and MSWD's service area. The intention of the program is to optimize and protect the use of groundwater in addition to providing sound management of the groundwater supplies.

Metropolitan Water District of Southern California

As previously noted, although Mission Springs Water District is not a direct member agency of MWD, MSWD has the ability to utilize imported water which is managed by MWD and exchanged for State Project Water through the auspices of DWA. With that in mind, MWD water supplies do impact MSWD and are therefore discussed in this section.

Colorado River Aqueduct (CRA)

Water supplies from the Colorado River have been and continue to be a topic of negotiation and intense debate. The 1964 Court Decree required the state of California to limit its annual use to 4.4 MAF basic annual apportionment of Colorado River water plus any available surplus. To keep California at 4.4 MAF, MWD reduces its level of diversions in years when no surplus is available.

In 1999, the Colorado River Board developed "California's Colorado River Water Use Plan," also known as the "California Plan" and the "4.4 Plan", which was endorsed by all seven Colorado River Basin states and the U.S. Department of the Interior. This plan developed the framework that specifies how California will transition and live within its basic apportionment of 4.4 MAF of Colorado River water.

The U.S. Bureau of Reclamation implemented Interim Surplus Guidelines to assist California's transition to the Plan. Seven priorities for use of the waters of the Colorado River within the State of California were established.

In October 2003, the Quantification Settlement Agreement (QSA), a critical component of the California's Colorado River Water Use Plan and for purposes of Section 5(B) of the Interim Surplus Guidelines, was authorized defining Colorado River water deliveries, delivery of Priority 3(a) and 6(a) Colorado River water, and transfer and other water delivery commitments, thus facilitating the transfer of water from agricultural agencies to urban uses. The QSA is a landmark agreement, signed by the four California Colorado

[7] Desert Water Agency, Desert Water Agency 2005 UWMP, p. III-3, December 2005.

River water use agencies and the U.S. Secretary of the Interior, which will guide reasonable and fair use of the Colorado River by California through the year 2037.

Report on Metropolitan's Water Supplies: Blueprint for Water Reliability

MWD released a *Report on Metropolitan's Water Supplies, A Blueprint for Water Reliability* on March 25, 2003, to provide updated information on Metropolitan's projected supply and demand for incorporation into Water Verification and Water Supply Assessments for compliance with SB 221 and SB 610, respectively. These bills implement requirements to connect land use to a sufficient water supply before a development can be approved. The MWD report addresses water supply reliability issues and states MWD's roles and responsibilities, which include the following: (1) implementing water management programs that support the development of cost-effective local resources; (2) securing additional imported supplies as necessary through programs that increase the availability of water delivered through the Colorado River Aqueduct and the SWP; (3) providing the infrastructure needed to integrate imported and local sources; (4) establishing a comprehensive management plan dealing with periodic surplus and shortage conditions; and (5) developing a rate structure that strengthens Metropolitan's financial capabilities to implement water supply programs and make infrastructure improvements.

The report details that MWD's regional water demand projections are 6 percent to 16 percent *higher*, depending on which 5-year projection period and 11 percent for Year 2025, than the aggregated projections of MWD's member agencies. As stated in the Report, "this difference indicated that MWD supplies would provide a level of 'margin of safety' or flexibility to accommodate delays in local resources development or adjustments in development plans."[8] Additionally, the report concludes that "current practices allow Metropolitan to bring water supplies on-line at least ten years in advance of demand with a very high degree of reliability." More particularly, MWD documented sufficient currently available supplies to meet 100 percent of member agencies' supplemental water demands for 20 years (through 2023) under Average and Wet Year conditions, for 15 years under Multiple Dry Year conditions (with 8 to 26 percent reserve capacity), and for 15 years under Single Dry Year conditions (with 8-25 percent reserve capacity).

The Report also identifies the ways MWD is managing changes in Southern California's water supplies, including reduced Colorado River deliveries and water quality constraints. In addition, opportunities for additional supplies are currently being implemented in the following ways:

1) Full Diamond Valley Lake: The Lake is now fully operational with an increased conveyance capacity for refill system storage.
2) Re-Operation of Storage and Transfer Programs: In 2003, MWD developed additional storage and transfer capabilities and completed filling local

[8] Metropolitan Water District of Southern California. Report on Metropolitan Water Supplies, A Blueprint for Water Reliability, p. 9. March 25, 2003.

resources to achieve full storage accounts in operational reservoirs and banking/transfer programs.

3) Enhanced Conservation Programs: A new campaign is designed to encourage more efficient outdoor water use and promote innovative conservation measures.
4) Development of Additional Local Resources: There are promising opportunities identified to develop seawater desalination and expand the Local Resources Program.

In addition to the *Report on Metropolitan's Water Supplies, A Blueprint for Water Reliability*, MWD's September 2005 Draft Regional Urban Water Management Plan (RUWMP) demand and supply analysis also projects surpluses (of regional supplies compared with regional demands) ranging from 5 percent to 35 percent in all years and all drought scenarios through 2030.[9]

As demand forecasts are refined, supply goals are also refined. Metropolitan has consistently supplied over 50 percent of water supplies to the Southern California region. To continue to accomplish this, MWD continues to approve new and innovative projects and programs to ensure reliability. For example, in August 2001, MWD took action to move forward initiatives to bolster future supplies by supporting seawater desalination projects, increased commercial conservation efforts, improved water quality by decreasing salinity in supplies from the SWP and the Colorado River, increased underground storage and retrieval facilities, adopted principles for establishing cooperative programs, and endorsed legislation that would further water reliability. Some of these projects are further described in Section 4.4.

Integrated Water Resources Plan (IRP)

To address MWD's reliability challenges, MWD and its member agencies developed an Integrated Water Resources Plan (IRP) in 1996. The overall objective of the IRP process is the selection and implementation of a Preferred Resource Mix (or strategy) consisting of complementary investments in local water resources, imported supplies and demand-side management that meet the region's desired reliability goal in a cost-effective and environmentally sound manner. The 1996 IRP was reviewed as part of MWD's strategic plan and rate refinement to guide the development and implementation of revised MWD water management programs through the year 2005.

The IRP 2003 Update was approved and released July 13, 2004, and includes various projects and programs that contribute to the reliability of MWD's imported water supplies. The IRP Update concluded that the resource targets from the 1996 IRP, factored in with changed conditions, will continue to provide for 100 percent reliability through 2025. The IRP did not project out to 2030.

[9] Tables II-7, 8 and 9 of MWD's September 2005 Draft Regional Urban Water Management Plan

While the IRP 2003 Update includes goals for a variety of resource targets, it identified the most significant programs as conservation and local supply development among the Preferred Resource Mix. The IRP details the Local Resources Program (LRP) and the Seawater Desalination Program as a means to increase reliability of local supplies. Metropolitan initiated the LRP to promote the development of water recycling projects that reduced demand for imported water and improved regional water supply reliability in 1982. In 1991, the Groundwater Recovery Program was implemented to similarly promote the recovery of local degraded groundwater supplies. In 1995, both programs were combined into the LRP. Currently, the LRP, including both recycling and groundwater recovery, has invested over $121 million and partnered with member agencies on 53 recycled water projects and 22 groundwater recovery projects generating 251,000 acre feet of local supply in 2002.[10]

The IRP 2003 Update states that MWD's regional production target is 500,000 AF by 2020 for its LRP. Metropolitan's current projection of regional implementation of recycling, groundwater recovery, and seawater desalination resource targets exceeds the 1996 IRP goals. Although in FY 2002, recycling and groundwater recovery programs narrowly missed their target, the region is expected to meet its 2010 and 2020 targets. Meeting the targets will require the region to produce 159,000 AF of additional local project and/or seawater desalination supply by 2010 and 249,000 AF by 2020. Overall, the region has developed about 50 percent of the 1996 IRP local resources target for 2020.

MWD continues to encourage development of local water resource projects through offering financial incentives through the LRP to its member agencies. These anticipated water supply benefits are incorporated into the forecasts of demand on MWD.

In addition to the LRP, MWD also provides financial and technical assistance for implementing water conservation Best Management Practices, as well as a significant investment in regional and local water conservation programs. MWD was also responsible for distributing $45 million in funds from Proposition 13 funding for development of conjunctive management programs in Southern California.

Regional Water Quality Control Board – Region 7

Background

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

[10] Metropolitan Water District of Southern California. Integrated Water Resources Plan, 2003 Update. May 2004.

quality, the beneficial uses of the region's ground and surface waters, and local water quality conditions and problems.[11]

The Basin Plan is more than just a collection of water quality goals and policies, descriptions of conditions, and discussions of solutions. It is also the basis for the RWQCB's regulatory programs. The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The RWQCB also regulates water discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under a number of programs and authorities.

Water quality problems in the region are listed in the Basin Plan, along with the causes, where they are known. For water bodies with quality below the levels necessary to allow all the beneficial uses of the water to be met, plans for improving water quality are included. Legal basis and authority for the RWQCB reflects, incorporates, and implements applicable portions of a number of national and statewide water quality plans and policies, including the California Water Code (Porter-Cologne Water Quality Control Act) and the Clean Water Act.[12]

4.2 DEMAND AND SUPPLIES RELIABILITY COMPARISON

Water supply and demand projections presented in this section of the UWMP are based on information provided by District studies as well as pertinent data extracted from the CVWD 2005 UWMP. Nearly 100 percent of the District's current supply is pumped from the Mission Creek Sub-Basin. This pattern will change somewhat with the development of a proposed recycled water system within the next decade. That system will supply a number of landscape and irrigation users that are currently dependent on potable water, thus reducing the demand on groundwater pumping.

Table 4.2-1 shows a projected water balance for the Mission Creek Sub-Basin, which is the primary source of water supply to MSWD with the exception of future recycled water. The projections in five-year increments for years 2010 through 2030 assume Normal Year conditions whereas the 2005 year is recognized as a wet-year condition as reflected by the 27,000 AF of imported water recharge in the first column. If the Net Balance values for years 2010 through 2030 are averaged and multiplied by the total 25 years of this UWMP projection period, the result would be a cumulative withdrawal of 46,000 AF from the Mission Creek Sub-Basin. When the single-year surplus of 16,000 AF for 2005 (starting condition) is taken into account, the net cumulative withdrawal would be reduced to 30,000 AF. It should be noted that this conservative assumption assumes no wet-year condition such as 2005 will occur over the next 25-year period and that all years are normal water years.

[11] Colorado River Basin Regional Water Quality Control Board. Region 7 Water Quality Control Plan. Amended to October 2005.
[12] Colorado River Basin Regional Water Quality Control Board. Region 7 Water Quality Control Plan. Amended to October 2005.

The estimate of total available storage within the Mission Creek Sub-Basin is approximately 1.4 MAF[13]. This cumulative withdrawal, based on the projections and assumptions described above and included in Table 4.2-1, would therefore equate to a loss of available storage of 2.2 percent over the next 25 years. Although relatively small compared to the basin capacity, it is nevertheless MSWD's intent to continue to work with DWA and CVWD to develop a strategic groundwater management program that will protect the Mission Creek Sub-Basin for generations to come.

[13] 1.4 MAF as noted in Section 2.1 of this 2005 UWMP.

Table 4.2-1

MSWD Water Balance
(AF - all numbers rounded to nearest 100 AF)

Year	Mission Creek Sub-Basin Recharge[1]	CVWD Sub-Basin Production[2]	Surplus GW Recharge[3]	Total MSWD Demand[4]	Recharge from 35% Return Flow[5]	Net Recharge Available[6]	Total MSWD GW Demand[7]	Net Balance[8]
2005	27,000	5,000	22,000	9,200	3,200	25,200	9,200	16,000
2010	11,200	4,000	7,200	14,400	5,000	12,200	14,400	(2,200)
2015	14,100	5,500	8,600	19,800	6,900	15,500	17,800	(2,300)
2020	16,100	7,100	9,000	22,500	7,900	16,900	17,200	(300)
2025	17,800	8,900	8,900	25,200	8,800	17,700	19,100	(1,400)
2030	19,100	10,700	8,400	27,900	9,800	18,200	21,200	(3,000)

[1] From Table 2-13 in CVWD 2005 UWMP for Mission Creek Spreading Facility; 2005 value from Nov. 9, 2005 email from Dave Luker (General Manager of DWA) to Arden Wallum (General Manager of MSWD)
[2] From Table 3-3 in CVWD 2005 UWMP for Mission Creek Sub-Basin
[3] Difference between Mission Creek Sub-basin Recharge and CVWD Production
[4] Total Projected MSWD demand including recycled water demand (refer to subsequent tables in this section)
[5] Naturally occurring recharge from return flow (35% of Total MSWD Demand)
[6] Net Recharge Available = Surplus GW Recharge + Recharge from Return Flow
[7] Total MSWD GW Demand (excludes recycled water demand)
[8] Net Balance = Total MSWD GW Demand – Net Recharge Available

Tables 4.2-2 through 4.2-8 present the normal year, single dry year and multiple dry year supply and demand projections for MSWD through 2030. The supply and demand projections assume:

- No imported water is available to MSWD. Although some State Project Water can be exchanged for CRA water through the auspices of DWA and CVWD, that water is ultimately used for groundwater recharge and is thus pumped from the aquifer by MSWD. Because this water is not directly supplied to the MSWD distribution system, it is not accounted for as imported water.
- Recycled water use will begin in approximately 2015 and will begin to reduce the demand on pumped water at that time.
- Given the large capacity of the Mission Creek Sub-Basin, it is not reasonable to assume the entire 1.4 MAF will be available to MSWD in any given year (primarily because of limitations on the District's well depths and pumping capacity). A reasonably conservative assumption of 40,000 AFY, which is less than 3 percent of the estimate of total storage within the sub-basin, has therefore been assumed as the supply capability.
- Groundwater recharge will continue to occur as noted above.
- All projections are based on an assumed high growth water demand pattern.

- Groundwater demands are estimated to increase approximately 1% over normal year demands during all single and multiple dry years. This projection is based on actual demand increases typically experienced in many Southern California locales (generally in the 3% to 7% range). Most of the increased water usage during dry periods in other Southern California locales is used outside the home, primarily for irrigation. That being the case, these percentage factors have been adjusted downward to take into account the limited lawn and landscape irrigation in MSWD (a review of aerial photographs in the MSWD service area suggest that approximately 20% of single family homes have lawns as compared to approximately 95% of homes in the metropolitan Los Angeles region).
- Recycled water will be used primarily for turf irrigation. As previously noted, potable groundwater demands during dry years are estimated to increase only one percent, primarily due to the limited amount of single family residential turf irrigation. However, because recycled demands will be primarily used for turf irrigation, those demands are more likely to reflect the same pattern as recycled demands experienced during dry years in other areas of Southern California, i.e., they will be about 5 percent higher than normal during single dry years and during the first year of a three year dry cycle, about 3 percent higher during the second year and about 5 percent higher during the third year of the three year dry cycle.

Given these assumptions, the water reliability analysis suggests that MSWD will be able to meet all of its demands during all normal, single dry year and multiple dry year periods. The analysis also suggests that MSWD will have significant surpluses ranging between 40 and 177 percent during normal years, 39 and 175 percent during single dry years, and 39 and 290 percent during multiple dry years. It should be noted that these surplus percentages are significantly greater than surplus water supplies typically available to water purveyors that are primarily dependent on imported supplies.

Table 4.2-2
Mission Springs Water District
Projected Water Supply and Demand
Normal Water Year
(AFY – All projections rounded to nearest 10 AF)

Water Sources	2010	2015	2020	2025	2030
Supply	**Normal Water Years**				
Imported[1]	0	0	0	0	0
Recycled[2]	0	2,000	5,350	6,070	6,720
Local (Groundwater)[3]	40,000	40,000	40,000	40,000	4,000
Total Supply	**40,000**	**42,000**	**45,350**	**46,070**	**46,720**
% of Normal Year	100.0	100.0	100.0	100.0	100.0
Demand					
Imported[1]	0	0	0	0	0
Recycled[2]	0	2,000	5,350	6,070	6,720
Local (Groundwater)[4]	14,400	17,800	17,150	19,130	21,180
Total Demand	**14,400**	**19,800**	**22,500**	**25,200**	**27,900**
% of Year 2005 Demand (9,194 AF)[5]	156.6	215.4	244.7	274.1	303.5
Supply/ Demand Difference	**25,600**	**22,200**	**22,850**	**20,870**	**18,820**
Difference as % of Supply	**64.0**	**52.9**	**50.4**	**45.3**	**40.3**
Difference as % of Demand	**177.8**	**112.1**	**101.6**	**82.8**	**67.5**

[1] MSWD does not have direct access to imported water. Although State Project Water can be exchanged for Colorado River water, which can then be used for recharging the groundwater aquifer (via water transfers arranged through DWA and CVWD), that import water is not supplied directly to the MSWD distribution system and is therefore not counted as "imported" supply or demand.
[2] There are currently no recycled water supplies available; however, plans call for implementation of a recycled water system beginning in approximately 2015 with a minimal production capacity of 2,000 AFY ramping up to 6,720 AF in 2030. Recycled water supply and demand are assumed to be equal. Recycled water supply numbers were calculated assuming that 90% of the wastewater generated can be converted to recycled water (with the 10% balance lost in the treatment process).
[3] The current available supply in the local groundwater aquifer is estimated at 1.4 MAF. This analysis conservatively assumes that less than 3% of this supply (or 40,000 AF) will be available in any given year as groundwater supply. The analysis also assumes the water extracted by pumping will be replaced by (1) DWA's proposed groundwater recharge of imported water at its Mission Creek Spreading Facility) and by (2) a 35% return flow for all water used in MSWD.
[4] Groundwater demands obtained from Projected High Growth Water Demand data included in draft 2005 MSWD Comprehensive Water System Master Plan prepared by URS.
[5] 9,194 AF was the actual water usage in MSWD during the FY_05

Table 4.2-3
Mission Springs Water District
Projected Water Supply and Demand
Single Dry Water Year
(AFY – All projections rounded to nearest 10 AF)

Water Sources	2010	2015	2020	2025	2030
Supply	**Single Dry Years**				
Imported[1]	0	0	0	0	0
Recycled[2]	0	2,000	5,350	6,070	6,720
Local (Groundwater)[3]	40,000	40,000	40,000	40,000	40,000
Total Supply	**40,000**	**42,000**	**45,350**	**46,070**	**46,720**
Normal Year Supply[4]	40,000	42,000	45,350	46,070	46,720
% of Normal Year	100.0	100.0	100.0	100.0	100.0
Demand					
Imported[1]	0	0	0	0	0
Recycled[5]	0	2,100	5,620	6,370	7,060
Local (Groundwater)[6]	14,540	17,980	17,320	19,320	21,390
Total Demand	**14,540**	**20,080**	**22,940**	**25,690**	**28,450**
Normal Year Demand[4]	14,400	19,800	22,500	25,200	27,900
% of Normal Year demand	101.0	101.4	102.0	101.9	102.0
% of Year 2005 Demand (9,194 AF)[7]	158.1	218.4	249.5	279.4	309.4
Supply/ Demand Difference	**25,460**	**21,920**	**22,410**	**20,380**	**18,270**
Difference as % of Supply	**63.7**	**52.2**	**49.4**	**44.2**	**39.1**
Difference as % of Demand	**175.1**	**109.1**	**97.7**	**79.3**	**64.2**

[1] MSWD does not have direct access to imported water. Although State Project Water can be exchanged for Colorado River water, which can then be used for recharging the groundwater aquifer (via water transfers arranged through DWA and CVWD), that import water is not supplied directly to the MSWD distribution system and is therefore not counted as "imported" supply or demand.
[2] There are currently no recycled water supplies available; however, plans call for implementation of a recycled water system beginning in approximately 2015 with a minimal production capacity of 2,000 AFY ramping up to 6,720 AF in 2030. Recycled water supply numbers were calculated assuming that 90% of the wastewater generated can be converted to recycled water (with the 10% balance lost in the treatment process).
[3] Groundwater supplies during single dry years are assumed to equal supplies during normal years (refer to table 4.2-2)
[4] Normal Year supplies and demands obtained from Table 4.2-2
[5] Recycled water will be used primarily for turf irrigation and can therefore be expected to reflect similar usage patterns consistent with dry year demands experienced in other areas of Southern California where 5% increases (over normal years) in single dry year demands are typical.
[6] Groundwater demands are estimated to increase approximately 1% over normal year demands during single dry years. This projection is based on actual demand increases typical of many Southern California locales (generally in the 3% to 7% range) adjusted downward to take into account the limited lawn and landscape irrigation in MSWD (a review of aerial photographs in MSWD suggests that approximately 20% of single family homes have lawns as compared to approximately 95% of homes in the metropolitan Los Angeles region).
[7] 9,194 AF was the actual water usage in MSWD during the FY05

Table 4.2-4
Mission Springs Water District
Projected Water Supply and Demand
Multiple Dry Water Years 2006-2010
(AFY – All projections rounded to nearest 10 AF)

Water Sources	2006	2007	2008	2009	2010
Supply	**Normal Years**		**Dry Years**		
Imported[1]	0	0	0	0	0
Recycled[2]	0	0	0	0	0
Local (Groundwater)[3]	40,000	40,000	40,000	40,000	40,000
Total Supply	**40,000**	**40,000**	**40,000**	**40,000**	**40,000**
Normal Year Supply[4]	40,000	40,000	40,000	40,000	40,000
% of Normal Year	100.0	100.0	100.0	100.0	100.0
Demand					
Imported[1]	0	0	0	0	0
Recycled[2]	0	0	0	0	0
Local (Groundwater)[5]	10,240	11,280	12,440	13,490	14,540
Total Demand	**10,240**	**11,280**	**12,440**	**13,490**	**14,540**
Normal Year Demand[4]	10,240	11,280	12,320	13,360	14,400
% of Normal Year	100.0	100.0	101.0	101.0	101.0
% of Year 2005 Demand (9,194 AF)[6]	111.5	122.7	135.3	146.7	158.1
Supply/ Demand Difference	**29,760**	**28,720**	**27,560**	**26,510**	**25,460**
Difference as % of Supply	**74.4**	**71.8**	**68.9**	**66.3**	**63.7**
Difference as % of Demand	**290.6**	**254.6**	**221.5**	**196.5**	**175.1**

[1] MSWD does not have direct access to imported water. Although State Project Water can be exchanged for Colorado River water, which can then be used for recharging the groundwater aquifer (via water transfers arranged through DWA and CVWD), that import water is not supplied directly to the MSWD distribution system and is therefore not counted as "imported" supply or demand.
[2] There are currently no recycled water supplies available; however, plans call for implementation of a recycled water system beginning in approximately 2015 with a minimal production capacity of 2,000 AFY ramping up to 6,720 AF in 2030. Thus, recycled water supplies and demands for the years 2006-2010 are shown as zero.
[3] Groundwater supplies during multiple dry years are assumed to equal supplies during normal years (refer to table 4.2-2)
[4] Normal Year Supplies and Demands obtained from Table 4.2-2; normal year demands are interpolated between actual 2005 demand and 2010 demand obtained from Table 4.2-2
[5] Groundwater demands are estimated to increase approximately 1% over normal year demands during all multiple dry years. This projection is based on actual demand increases typical of many Southern California locales (generally in the 3% to 7% range) adjusted downward to take into account the limited lawn and landscape irrigation in MSWD (a review of aerial photographs in MSWD suggests that approximately 20% of single family homes have lawns as compared to approximately 95% of homes in the metropolitan Los Angeles region)
[6] 9,194 AF was the actual water usage in MSWD during the FY05

Table 4.2-5
Mission Springs Water District
Projected Water Supply and Demand
Multiple Dry Water Years 2011-2015
(AFY – All projections rounded to nearest 10 AF)

Water Sources	2011	2012	2013	2014	2015
Supply	**Normal Years**		**Dry Years**		
Imported[1]	0	0	0	0	0
Recycled[2]	0	0	0	0	2,000
Local (Groundwater)[3]	40,000	40,000	40,000	40,000	40,000
Total Supply	**40,000**	**40,000**	**40,000**	**40,000**	**42,000**
Normal Year Supply[4]	40,000	40,000	40,000	40,000	42,000
% of Normal Year	100.0	100.0	100.0	100.0	100.0
Demand					
Imported[1]	0	0	0	0	0
Recycled[5]	0	0	0	0	2,100
Local (Groundwater)[6]	15,480	16,560	17,820	18,910	17,980
Total Demand	**15,480**	**16,560**	**17,820**	**18,910**	**20,080**
Normal Year Demand[4]	15,480	16,560	17,640	18,720	19,800
% of Normal Year	100.0	100.0	101.0	101.0	101.4
% of Year 2005 Demand (9,194 AF)[7]	168.4	180.1	193.8	205.7	218.4
Supply/ Demand Difference	**24,520**	**23,440**	**22,180**	**21,090**	**21,920**
Difference as % of Supply	**61.3**	**58.6**	**55.5**	**52.7**	**52.2**
Difference as % of Demand	**158.4**	**141.5**	**124.5**	**111.5**	**91.6**

[1] MSWD does not have direct access to imported water. Although State Project Water can be exchanged for Colorado River water, which can then be used for recharging the groundwater aquifer (via water transfers arranged through DWA and CVWD), that import water is not supplied directly to the MSWD distribution system and is therefore not counted as "imported" supply or demand.
[2] There are currently no recycled water supplies available; however, plans call for implementation of a recycled water system beginning in approximately 2015 with a minimal production capacity of 2,000 AFY ramping up to 6,720 AF in 2030. Recycled water supplies and demands for 2006-2009 are shown as zero. Recycled water demand in 2010 is anticipated to exceed recycled water supply by 1%. Recycled water supply numbers for subsequent years were calculated assuming that 90% of the wastewater generated can be converted to recycled water (with the 10% balance lost in the treatment process).
[3] Groundwater supplies during multiple dry years are assumed to equal supplies during normal years (refer to table 4.2-2)
[4] Normal year supplies and demands are interpolated from data in Table 4.2-2
[5] Recycled water will be used primarily for turf irrigation and can therefore be expected to reflect similar usage patterns consistent with multiple dry year demands experienced in other areas of Southern California where 5%, 3% and 5% increases (over normal years) in years 1, 2, and 3, respectively, of a multiple dry year period are typical.
[6] Groundwater demands are estimated to increase approximately 1% over normal year demands during all multiple dry years (refer to footnote 5 above)
[7] 9,194 AF was the actual water usage in MSWD during the FY05

Table 4.2-6
Mission Springs Water District
Projected Water Supply and Demand
Multiple Dry Water Years 2016-2020
(AFY – All projections rounded to nearest 10 AF)

Water Sources	2016	2017	2018	2019	2020
Supply	**Normal Years**		**Dry Years**		
Imported[1]	0	0	0	0	0
Recycled[2]	2,670	3,340	4,010	4,680	5,350
Local (Groundwater)[3]	40,000	40,000	40,000	40,000	40,000
Total Supply	**42,670**	**43,340**	**44,010**	**44,680**	**45,350**
Normal Year Supply[4]	**42,670**	**43,340**	**44,010**	**44,680**	**45,350**
% of Normal Year	100.0	100.0	100.0	100.0	100.0
Demand					
Imported[1]	0	0	0	0	0
Recycled[5]	2,670	3,340	4,210	4,820	5,620
Local (Groundwater)[6]	17,670	17,540	17,580	17,450	17,320
Total Demand	**20,340**	**20,880**	**21,790**	**22,270**	**22,940**
Normal Year Demand[4]	20,340	20,880	21,420	21,960	22,500
% of Normal Year	100.0	100.0	101.7	101.4	102.0
% of Year 2005 Demand (9,194 AF)[7]	221.2	227.1	237.0	242.2	249.5
Supply/ Demand Difference	**22,330**	**22,460**	**22,220**	**22,410**	**22,410**
Difference as % of Supply	**52.3**	**51.8**	**50.5**	**50.2**	**49.4**
Difference as % of Demand	**109.8**	**107.6**	**102.0**	**100.6**	**97.7**

[1] MSWD does not have direct access to imported water. Although State Project Water can be exchanged for Colorado River water, which can then be used for recharging the groundwater aquifer (via water transfers arranged through DWA and CVWD), that import water is not supplied directly to the MSWD distribution system and is therefore not counted as "imported" supply or demand.
[2] There are currently no recycled water supplies available; however, plans call for implementation of a recycled water system beginning in approximately 2015 with a minimal production capacity of 2,000 AFY ramping up to 6,720 AF in 2030. Recycled water supply numbers were calculated assuming that 90% of the wastewater generated can be converted to recycled water (with the 10% balance lost in the treatment process).
[3] Groundwater supplies during multiple dry years are assumed to equal supplies during normal years (refer to table 4.2-2)
[4] Normal year supplies and demands are interpolated from data in Table 4.2-2
[5] Recycled water will be used primarily for turf irrigation and can therefore be expected to reflect similar patterns consistent with multiple dry year demands experienced in other areas of Southern California where 5%, 3% and 5% increases (over normal years) in years 1, 2, and 3, respectively, of a multiple dry year period are typical.
[6] Groundwater demands are estimated to increase approximately 1% over normal year demands during all multiple dry years (refer to footnote 5 above)
[7] 9,194 AF was the actual water usage in MSWD during the FY05

Table 4.2-7
Mission Springs Water District
Projected Water Supply and Demand
Multiple Dry Water Years 2021-2025
(AFY – All projections rounded to nearest 10 AF)

Water Sources	2021	2022	2023	2024	2025
Supply	**Normal Years**		**Dry Years**		
Imported[1]	0	0	0	0	0
Recycled[2]	5,490	5,640	5,780	5,930	6,070
Local (Groundwater)[3]	40,000	40,000	40,000	40,000	40,000
Total Supply	**45,490**	**45,640**	**45,780**	**45,930**	**46,070**
Normal Year Supply[4]	45,490	45,640	45,780	45,930	46,070
% of Normal Year	100.0	100.0	100.0	100.0	100.0
Demand					
Imported[1]	0	0	0	0	0
Recycled[5]	5,490	5,640	6,070	6,100	6,370
Local (Groundwater)[6]	17,550	17,940	18,520	18,920	19,320
Total Demand	**23,040**	**23,580**	**24,590**	**25,020**	**25,690**
Normal Year Demand[4]	23,040	23,580	24,120	24,660	25,200
% of Normal Year	100.0	100.0	101.9	103.7	101.9
% of Year 2005 Demand (9,194 AF)[7]	250.6	256.5	267.5	272.1	279.4
Supply/ Demand Difference	**22,450**	**22,060**	**21,190**	**20,910**	**20,380**
Difference as % of Supply	**49.4**	**48.3**	**46.3**	**45.5**	**44.2**
Difference as % of Demand	**97.4**	**93.6**	**86.2**	**83.6**	**79.3**

[1] MSWD does not have direct access to imported water. Although State Project Water can be exchanged for Colorado River water, which can then be used for recharging the groundwater aquifer (via water transfers arranged through DWA and CVWD), that import water is not supplied directly to the MSWD distribution system and is therefore not counted as "imported" supply or demand.
[2] There are currently no recycled water supplies available; however, plans call for implementation of a recycled water system beginning in approximately 2015 with a minimal production capacity of 2,000 AFY ramping up to 6,720 AF in 2030. Recycled water supply numbers were calculated assuming that 90% of the wastewater generated can be converted to recycled water (with the 10% balance lost in the treatment process).
[3] Groundwater supplies during multiple dry years are assumed to equal supplies during normal years (refer to table 4.2-2)
[4] Normal year supplies and demands are interpolated from data in Table 4.2-2
[5] Recycled water will be used primarily for turf irrigation and can therefore be expected to reflect similar patterns consistent with multiple dry year demands experienced in other areas of Southern California where 5%, 3% and 5% increases (over normal years) in years 1, 2, and 3, respectively, of a multiple dry year period are typical.
[6] Groundwater demands are estimated to increase approximately 1% over normal year demands during all multiple dry years (refer to footnote 5 above)
[7] 9,194 AF was the actual water usage in MSWD during the FY05

Table 4.2-8
Mission Springs Water District
Projected Water Supply and Demand
Multiple Dry Water Years 2026-2030
(AFY – All projections rounded to nearest 10 AF)

Water Sources	2026	2027	2028	2029	2030
Supply	**Normal Years**		**Dry Years**		
Imported[1]	0	0	0	0	0
Recycled[2]	6,200	6,330	6,460	6,590	6,720
Local (Groundwater)[3]	40,000	40,000	40,000	40,000	40,000
Total Supply	**46,200**	**46,330**	**46,460**	**46,590**	**46,720**
Normal Year Supply[4]	46,200	46,330	46,460	46,590	46,720
% of Normal Year	100.0	100.0	100.0	100.0	100.0
Demand					
Imported[1]	0	0	0	0	0
Recycled[5]	6,200	6,330	6,780	6,790	7,060
Local (Groundwater)[6]	19,540	19,950	20,560	20,980	21,390
Total Demand	**25,740**	**26,280**	**27,340**	**27,770**	**28,450**
Normal Year Demand[4]	25,740	26,280	26,820	27,360	27,900
% of Normal Year	100.0	100.0	109.3	101.5	102.0
% of Year 2005 Demand (9,194 AF)[7]	280.0	285.8	297.4	302.0	309.4
Supply/ Demand Difference	**20,460**	**20,050**	**19,120**	**18,820**	**18,270**
Difference as % of Supply	**44.3**	**43.3**	**41.2**	**40.4**	**39.1**
Difference as % of Demand	**79.5**	**76.3**	**69.9**	**67.8**	**64.2**

[1] MSWD does not have direct access to imported water. Although State Project Water can be exchanged for Colorado River water, which can then be used for recharging the groundwater aquifer (via water transfers arranged through DWA and CVWD), that import water is not supplied directly to the MSWD distribution system and is therefore not counted as "imported" supply or demand.
[2] There are currently no recycled water supplies available; however, plans call for implementation of a recycled water system beginning in approximately 2015 with a minimal production capacity of 2,000 AFY ramping up to 6,720 AF in 2030. Recycled water supply numbers were calculated assuming that 90% of the wastewater generated can be converted to recycled water (with the 10% balance lost in the treatment process).
[3] Groundwater supplies during multiple dry years are assumed to equal supplies during normal years (refer to table 4.2-2)
[4] Normal year supplies and demands are interpolated from data in Table 4.2-2
[5] Recycled water will be used primarily for turf irrigation and can therefore be expected to reflect similar patterns consistent with multiple dry year demands experienced in other areas of Southern California where 5%, 3% and 5% increases (over normal years) in years 1, 2, and 3, respectively, of a multiple dry year period are typical.
[6] Groundwater demands are estimated to increase approximately 1% over normal year demands during all multiple dry years (refer to footnote 5 above)
[7] 9,194 AF was the actual water usage in MSWD during the FY05

4.3 VULNERABILITY OF SUPPLY FOR SEASONAL OR CLIMATIC SHORTAGE

The climate in the valley is typical desert with seasonal temperatures vary from about 115 degrees Fahrenheit in the summer to below freezing in the winter. The high mountains that border the valley to the west and north are an effective barrier against easterly moving coastal storms. The average annual rainfall on the valley floor is less than 6 inches; whereas, the average annual rainfall at the crest of the mountains to the west and north of the valley ranges from 30 to 40 inches (DWR, 1964).

Climatological data in California has been recorded since the year 1858. During the twentieth century, California has experienced three periods of severe drought: 1928-34, 1976-77 and 1987-91. The year 1977 is considered to be the driest year of record in the Four Rivers Basin by the Department of Water Resources (DWR). These rivers flow into the San Francisco Bay Delta and are the source of water for the State Water Project.

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

4.4.1 *Mission Springs Water District Projects*

Groundwater

Some portions of the District's groundwater sources of supply contain minerals and salt (reflected by moderately high TDS values) which exceed the MCL for potable water. Specifically, such areas include the Desert Hot Springs basin that underlies the City north of Mission Creek Fault. Additionally, the District will examine the increases in TDS east of Palm Drive, presumably due to the influence of recharge from the Long Canyon Wash. To determine the feasibility of reclaiming highly mineralized groundwater for future beneficial uses, the District proposes to conduct a pilot study of highly mineralized water within the service area. Funding opportunities for partial or full federal grant funding for such a study would be explored. Finally, the District would contact MWD to ascertain if any aspect of its current Desalination Research and Innovation Partnership Program (DRIPP) might apply to the District's study.

4.4.2 *Regional Agency Projects*

Metropolitan Water District of Southern California

MWD is implementing water supply alternative strategies for the region and on behalf of its member agencies to insure available water in the future. Some of the strategies identified in MWD's 2005 UWMP include:

- Conservation
- Water recycling and groundwater recovery
- Storage and groundwater management programs within the Southern California region
- Storage programs related to the SWP and the Colorado River
- Other water supply management programs outside of the region

MWD has made investments in conservation, water recycling, storage, and supply that are all part of MWD's long-term water management strategy. MWD's approach to a long-term water management strategy was to develop an Integrated Resource Plan that depended on many sources of supply. MWD's implementation approach for achieving the goals of the Integrated Resource Plan Update is summarized in Table 4.4-1. A comprehensive description of MWD's implementation approach is contained in its 2003 report on MWD water supplies "A Blueprint for Water Reliability" as well as its 2005 Regional UWMP. A brief description of the various programs implemented by MWD is also included following Table 4.4-1.

Table 4.4-1
Metropolitan Integrated Resource Plan Update Resources Status

Target	Programs and Status
• **Conservation**	**Current** - Conservation Credits Program - Residential; Non-residential Landscape Water Use Efficiency; Commercial, Industrial, and Institutional Programs - Grant Programs **In Development or Identified** - Innovative Conservation Program
• **Recycling** • **GW Recovery** • **Desalination**	**Current** - LRP Program **In Development or Identified** - Additional LRP Requests for Proposals - Seawater Desalination Program - Innovative Supply Program
• **In Region Dry-Year Surface Water Storage**	**Current** - Diamond Valley Reservoir, Lake Mathews, Lake Skinner - SWP Terminal Reservoirs (Monterey Agreement)

Target	Programs and Status
• **In Region Groundwater Conjunctive Use**	**Current** - North Las Posas (Eastern Ventura County) - Cyclic Storage - Replenishment Deliveries - Proposition 13 Programs (short listed) **In Development or Identified** - Raymond Basin GSP - Proposition 13 Programs (wait listed) - Expanding existing programs - New groundwater storage programs
• **SWP**	**Current** - SWP Deliveries - San Luis Carryover Storage (Monterey Agreement) - SWP Call Back with DWCV Table A transfer **In Development or Identified** - Sacramento Valley Water Management Agreement - CALFED Delta Improvement Program (Phase 8 Agreement)
• **Colorado River Aqueduct**	**Current** - Base Apportionment - IID/Metropolitan Conservation Program - Coachella and All American Canal Lining Programs - PVID Land Management Program **In Development or Identified** - Lower Coachella Storage Program - Hayfield Storage Program - Chuckwalla Storage Program - Storage in Lake Mead
• **CVP/SWP Storage and Transfers** • **Spot Transfers and Options**	**Current** - Arvin Edison Program - Semitropic Program - San Bernardino Valley MWD Program - Kern Delta Program **In Development or Identified** - Mojave Storage Program - Other Central Valley Transfer Programs

Colorado River Aqueduct Target

MWD also receives imported water from the Colorado River Aqueduct. MWD, Imperial Irrigation District (IID) and CVWD executed the Quantification Settlement Agreement (QSA) in October 2003. The QSA established the baseline water use for each agency and facilitated the transfer agricultural water to urban uses. A number of programs have been identified to assist Metropolitan meet its target goal of 1.2 MAF per year from the Colorado River Aqueduct. These programs include the following:

- Imperial Irrigation District/MWD Conservation Program – The program originally provided funding from MWD to implement water efficiency improvements within IID. MWD in turn would reserve the right to divert the water conserved by those investments. Execution of the QSA extended the term of the program to 2078 and guaranteed MWD at least 80,000 AF per year.

- Coachella and All-American Canal Lining Project – The Coachella Canal Lining Project is scheduled to be completed in January 2007 and is expected to conserve 26,000 AFY. The All-American Canal Lining Project is scheduled to be completed in 2008 and is expected to conserve 67,700 AFY. The conserved water will be made available in Lake Havasu for diversion from MWD. In exchange, MWD will supply a like amount to the San Luis Rey Settlement Parties and San Diego County Water Authority.
- IID/San Diego County Water Authority Transfer – IID has agreed to implement a conservation program and transfer water to San Diego County Water Authority. The transfer began in 2003 with 10,000 AF and will increase yearly until 2023 where the transfer will be 200,000 AF annually. Water will be conserved through land fallowing and irrigation efficiency measures. MWD will supply the water conserved to San Diego County Water Authority in exchange for a like amount out of Lake Havasu.
- Palo Verde Land Management and Crop Rotation Program – This program offers financial incentives to farmers with Palo Verde Irrigation District to not irrigate a portion of their land. A maximum of 29 percent of lands within Palo Verde Irrigation District can be fallowed in any year. The water conserved will be available to MWD with a maximum of 111,000 AF per year expected.
- Hayfield Groundwater Storage Program – MWD will divert Colorado River water and store it in the Hayfield Groundwater Basin in east Riverside County. Currently there is 72,000 AF of water in storage. MWD expects the program to eventually develop a storage capacity of approximately 500,000 AF.
- Chuckwalla Groundwater Storage Program – MWD proposes to store water when available in the Upper Chuckwalla Groundwater Basin for future delivery to MWD.
- Lower Coachella Valley Groundwater Storage Program – MWD, Coachella Valley Water District, and the Desert Water Agency are investigating the feasibility of a conjunctive use program in the Lower Coachella Groundwater Basin. The basin has the potential to store 500,000 AF of groundwater for MWD.

CVP/SWP Storage and Transfers Target

MWD has focused on voluntary short and long-term transfer and storage programs with Central Valley Project and other SWP contractors. Currently, MWD has enough transfer and storage programs to meet its 2010 target goal of 300,000 AF. MWD has four CVP/SWP transfer and storage programs in place for a total of 317,000 AF of dry-year supply. MWD is also pursuing a new storage program with Mojave Water Agency and continues to pursue Central Valley water transfers on an as needed basis. The operational programs include:

- Semitropic – 107,000 AF dry-year supply

- Arvin-Edison – 90,000 AF dry-year supply
- San Bernardino Valley Municipal Water District – 70,000 AF dry-year supply
- Kern Delta Water District – 50,000 AF dry-year supply
- Mojave Storage Program – 35,000 AF dry-year supply
- Central Valley Transfer Program – 160,000 AF dry-year supply

State Water Project Target

The major actions MWD is completing to improve SWP reliability include the following:

- Desert Water Agency/Coachella Valley Water District (DWCV) SWP Table A Transfer – This transfer to DWCV includes 100,000 AF of MWD SWP Table A amount in exchange for other rights such as its full carryover amounts in San Luis and full use of flexible storage in Castaic and Perris Reservoirs. It is anticipated that the call-back provision of the entitlement transfer can provide between 5,000 and 26,000 AF of water depending on the water year.
- Desert Water Agency/Coachella Valley Water District (DWCV) Advance Delivery Program – Under this program MWD delivers Colorado River water to the DWCV in exchange for their SWP Contract Table A allocations. MWD can expect increases in SWP Table A deliveries of 6,000 to 18,000 AF depending on the water year.
- Delta Improvements Package – The actions outlined in this package are related to water project operations in the Delta. The actions are designed to allow the SWP to operate the Banks Pumping Plant in the Delta at 8,500 CFS. Currently Banks Pumping Plant operates at 6,680 CFS. MWD anticipates that increased diversion from the Delta will result in an increase of 130,000 AF per year that will be available for groundwater and surface water storage.
- Phase 8 Settlement – This agreement includes various recommended water supply projects that meet demand and water quality objectives within the Sacramento Valley. The various conjunctive use projects will yield approximately 185,000 AF per year in the Sacramento Valley of which approximately 55,000 AF would be available to MWD through its SWP allocation.
- Monterey Amendment – The Monterey Amendment enables MWD to use a portion of the San Luis Reservoir's capacity for carryover storage. This will increase SWP delivery to Metropolitan by 93,000 to 285,000 AF depending on supply conditions.
- SWP Terminal Storage – MWD has water rights for storage at Lake Perris and Castaic Lake. The storage provides MWD with options for managing SWP deliveries and store up to 73,000 to 219,000 AF of carryover water.

Recycled Water, Groundwater Recover, and Desalination Target

MWD supports the use of alternative water supplies such as recycled water and degraded groundwater when there is a regional benefit to offset imported water supplies. Currently 355,000 TAF of recycled water is permitted for use within MWD service area. MWD estimates that an additional 480,000 AF per year of new recycled water could be developed and used by 2025 with an additional 130,000 AF per year by 2050. Approximately 30 percent of the recycled water use within MWD's service area is for groundwater replenishment and seawater barriers. In the future it is anticipated that up to 90 percent of all water used for seawater barriers will be recycled water.

MWD recognizes the importance of member agencies developing local supplies and has implemented several programs to provide financial assistance. MWD's incentive programs include:

- Competitive Local Resources Program (LRP): Supports the development of cost-effective water recycling and groundwater recovery projects that reduce demands for imported supplies.
    - » According to MWD's 2005 UWMP, thirteen projects were selected in 2004 for implementation under the Competitive LRP.
- Seawater Desalination Program (SDP): Supports the development of seawater desalination within MWD's service area.
    - » MWD initiated the SDP in 2001. According to MWD's 2005 UWMP, five member agencies have submitted proposals for about 126,000 AF per year of desalinated seawater: San Diego County Water Authority, Long Beach Water Department, Los Angeles Department of Water and Power, West Basin Municipal Water District, and the Municipal Water District of Orange County. The MWD Board has directed MWD staff to develop contracts to pursue projects proposed under this program.
- Innovative Supply Program: Encourages investigations into alternative approaches to increasing the region's water supply.
    - » Under the Innovative Supply Program, MWD selected 10 projects for grant funding. Proposals included harvesting storm runoff, onsite recycling, and desalination. The project findings will be presented to member agencies in 2006.

Regional Groundwater Conjunctive Use Target

Other programs within MWD to maximize water supplies include storage and groundwater management programs. The Integrated Resource Plan Update identified the need for dry-year storage within surface water reservoirs and the need for groundwater storage. In 2002, Diamond Valley Lake reached its full storage capacity of 800,000 AF. Approximately 400,000 AF are dedicated for dry-year storage. MWD has developed a

number of local programs to increase storage in the groundwater basins. The programs include:

- North Las Posas – In 1995, MWD and Calleguas Municipal Water District developed facilities for groundwater storage and extraction from the North Las Posas Basin. MWD has the right to store up to 210,000 AF of water. The wellfields are expected to be fully operational in 2007 with Phases I and II already complete. It is expected the North Las Posas program will yield 47,000 AF of groundwater from the basin each year.
- Proposition 13 Projects – In 2000, DWR selected MWD to receive financial funding to help fund the Southern California Water Supply Reliability Projects Program. The program coordinates eight conjunctive use projects with a total storage capacity of 195,000 AF and a dry-year yield of 65,000 AF per year. Central Basin Municipal Water District (CBMWD) is sponsoring two of the projects with the City of Long Beach and together the projects have a storage capacity of 16,600 AF.
- Raymond Basin – In January 2000, MWD entered into agreements with the City of Pasadena and Foothill Municipal Water District to implement a groundwater storage program that is anticipated to yield 22,000 AF per year by 2010.
- Other Programs – MWD intends to expand the conjunctive use programs to add another 80,000 AF to groundwater storage. Other basins in the area are being evaluated for possible conjunctive use projects.

4.5 TRANSFER AND EXCHANGE OPPORTUNITIES

The District has not entered into any agreements for the transfer or exchange of water. However, the District cooperates with DWA and MWD for the two transfer programs discussed above: 1) Desert Water Agency/Coachella Valley Water District (DWCV) SWP Table A Transfer and 2) Desert Water Agency/Coachella Valley Water District (DWCV) Advance Delivery Program.

4.6 DESALINATED WATER OPPORTUNITIES

Desalination is viewed as a way to develop a local, reliable source of water that assists agencies reduce their demand on imported water, reduce groundwater overdraft, and in some cases make unusable groundwater available for municipal uses. Currently, there are no identified projects within the District for desalination of impaired groundwater. However, from a regional perspective, desalination projects within the region indirectly benefit the District.

Department of Water Resources Desalination Task Force

Assembly Bill 2717 (2002) called for DWR to establish a Desalination Task Force to evaluate the following: 1) Potential opportunities for desalination of seawater and brackish water in California, 2) Impediments to using desalination technology, and 3) the role of the State in furthering the use of desalination.[14] In October 2003, the task force, comprised of 27 organizations, provided a list of recommendations related to the following issues: general, energy, environment, planning, and permitting.

[14] DWR, California Water Plan Update 2005, Volume 2 – Resource Management Strategies

SECTION 5
WATER USE PROVISIONS

5.1 PAST, CURRENT AND PROJECTED WATER USE AMONG SECTORS

Residential is the largest customer class (sector) in the District's service area and is the primary water user. The residential group consists of single-family residences. The commercial class includes multi-family residences and retail businesses. Table 5.1-1 quantifies the water use per classification (sector) for the District and also shows unaccounted-for water loss.

The projected water use by sector presented in the row entitled "Subtotal" reflects the total water demand projections shown in Table 4.2-3, which do not include unaccounted-for water losses. The total water use presented in Table 5.1-1 takes unaccounted-for losses into consideration.

Table 5.1-1
Past, Current and Projected Water Use by Sector
(AF)

	2000	2005	2010	2015	2020	2025	2030
Single Family Residential	4,035	5,300	8,900	12,500	14,300	16,100	17,900
Multi Family Residential	1,591	1,500	1,500	1,600	1,600	1,600	1,600
Commercial	719	800	1,400	2,000	2,300	2,600	2,900
Other	1,094	1,600	2,600	3,700	4,300	4,900	5,500
Subtotal	**7,439**	**9,200**	**14,400**	**19,800**	**22,500**	**25,200**	**27,900**
Unaccounted-for System Losses [1]	571	1,000	1,300	1,700	2,000	2,200	2,400
Total Water Use	**8,010**	**10,200**	**15,700**	**21,400**	**24,500**	**27,400**	**30,300**

[1] Estimated on average at 8.0%; actual amounts are based on the MSWD Comprehensive Water System Master Plan, October 17, 2005 Draft.

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

- Fire department hydrant testing to monitor fire protection levels throughout the City of Desert Hot Springs and other communities. Hydrant flushing to eliminate settled sediment and ensure better water quality. Hydrant testing and flushing are not metered. However, this quantity of water is estimated and taken into consideration when calculating unaccounted-for water.

- Water used by the fire department to fight fires. This water is also not metered.
- Customer meter inaccuracies. Meters have an inherent accuracy for a specified flow range. However, flow above or below this range is usually registered at a lower rate. Meters become less accurate with time due to wear.
- Water potentially lost from system leaks, main breaks, flushing, well starts/stops, i.e. from pipes, valves, pumps, and other water system appurtenances.

Table 5.1-2 shows the past and projected number of water service customers by customer class through 2030. The number of service connections is anticipated to increase by about 290 percent through 2030 commensurate with a similar projected 290 percent increase in population.

Table 5.1-2
Number of Water Service Connections by Sector

	2000	2005	2010	2015	2020	2025	2030
Single Family Residential	6,464	8,883	13,500	18,500	21,000	23,500	26,000
Multi Family Residential	605	627	1,000	1,300	1,500	1,700	1,800
Commercial	308	284	400	600	700	750	800
Other	168	262	400	550	600	700	750
Total Connections	**7,545**	**10,056**	**15,300**	**20,950**	**23,800**	**26,650**	**29,350**

Source: 2000 and 2005 data is MSWD Comprehensive Water System Master Plan, October 2005 Draft, Table 2-1. Other years are projections based on normal year demand data presented in Table 4.2-2.

SECTION 6
WATER DEMAND MANAGEMENT MEASURES

6.1 INTRODUCTION

The District recognizes water use efficiency as an integral component of current and future water strategy for the service area. Through the California Urban Water Conservation Council's (CUWCC) Memorandum of Understanding Regarding Urban Water Conservation in California (MOU),[15] 14 BMPs have been established. These BMPs are equivalent to demand management measures (DMM) as defined in Water Code section 10631(f) and refer to policies, programs, rules, regulation and ordinances, and the use of devices, equipment and facilities that, over the long term; have been generally justified and accepted by the industry as providing a "reliable" reduction in water demand. The BMPs are technically and economically reasonable and not environmentally or socially unacceptable, and are not otherwise unreasonable for most water suppliers to carry out.

Although the District is not a signatory to the MOU, MSWD has made state-mandated BMPs (or DMMs) the cornerstone of its conservation programs and a key element in the overall regional water resource management strategy for the region.

6.2 DETERMINATION OF DEMAND MANAGEMENT MEASURES IMPLEMENTATION

The District has continued to work towards implementing the 14 cost-effective DMMs, which are incorporated in regional water agencies rate surcharges. These 14 DMMs include technologies and methodologies that have been sufficiently documented in multiple demonstration projects that result in more efficient water use and conservation.

The District's 2000 UWMP did not address planned implementation of DMMs, but focused on the existing actions contributing to the implementation of DMMs and water conservation efforts as a whole. Therefore, the following provides a thorough overview of the District's current actions.

6.3 DEMAND MANAGEMENT MEASURES

MSWD has made the State-mandated DMMs a key element in the overall water resource management strategy. The District is dedicated to implementing water conservation measures, as shown by the District's recently adopted (September 2004) Water

[15]The *Memorandum of Understanding Regarding Urban Water Conservation in California* (MOU) was adopted in September 1991 by a large number of water suppliers, public advocacy organizations and other interested groups. It created the *California Urban Water Conservation Council* and established 16 Best Management Practices (BMPs) for urban water conservation, recently refined to 14 BMPs.

Conservation Master Plan. The Water Conservation Master Plan defines a series of sensible water conservation activities that complement the unique water resource characteristics of the District's service area. The Plan represents a "first-tier" qualitative effort at identifying and screening potential conservation initiatives appropriate for implementation in the District's service areas. As program implementation proceeds, a "second tier" qualitative evaluation of the cost effectiveness of each initiative will be completed. The data will assist in establishing the performance benchmark to aid the District in determining which initiatives should be continued to meet long-term conservation objectives.

As part of the Water Conservation Master Plan, the District identified factors affecting water conservation within the District. Significant factors that are impinging upon the District include the following: Limited availability of water as a resource in Coachella Valley; the District's 100 percent dependability on groundwater as a source; lack of other potable water sources and limited emergency interconnections; high customer taxes to DWA for future imported water supply; lack of sufficient reservoir storage for water shortages and emergencies; continued new residential development in the City of Desert Hot Springs; risk of future degradation of groundwater supplies from septic tanks, and commercial and industrial development; and the need to implement costly new sources of water (reclamation/conjunctive use, etc.).

The water conservation principles identified in the District's Water Conservation Master Plan were outlined and include detailed tasks. Overall, the District aims to employ the following principles:

- Clarify and summarize the District's conservation programs, reflecting conservation commitments made through the UWMP, the 900 Zone Project EIR, and other programs.
- Ensure that the conservation measures adopted by the District treat all customers fairly and equitably.
- Identify and establish measurable conservation targets to be accomplished by the District within a reasonable period of time.
- Develop sensible approaches for practical, cost-effective and efficient conservation programs which anticipate and serve the long-term needs of District customers.
- Facilitate the District's ability to provide a dependable, reliable supply of water.

The District also developed a conceptual framework for the proposed conservation planning process throughout the service area. Four phases are envisioned as part of the process, including the formulation of conservation principles, program refinement, program implementation and program evaluation. The Plan's Conservation Action Plan seeks to implement the conceptual framework in a "dual approach," whereby regulatory and management practices are jointly utilized. In the Conservation Action Plan, the process for establishing measurable conservation targets is discussed. Three distinct

components for the process are identified as the following: establishment of measurable targets, identifying worthwhile conservation measures, and evaluating the effects of conservation activities and attainment of goals.

The District water conservation measures are discussed as follows.

DMM 1- Residential Surveys

The District's 2004 Water Conservation Master Plan proposes to conduct surveys and analyze sponsored recirculation systems to determine their effectiveness for residential use in reducing demand. This will be accomplished through analyzing historical use patterns and other data to conclude whether the cost benefit analysis proves economically beneficial. The type of rebates offered by the District will also be determined. The Water Conservation Master Plan includes an initiative to implement water audits to improve irrigation efficiency for high-volume residential and commercial water users such as multifamily residences, homeowner associations and golf courses. Audits will evaluate delivery of effectiveness and environmental factors such as soil type, salinity levels and weather conditions.

The District's website includes two links for customers interested in their home's water use calculations. They are the AWWA WaterWiser drip calculator and the CUWCC's home tour at www.h2ouse.org.

Table 6.3-1 shows the projected implementation of residential surveys based on program initiation in 2010.

Table 6.3-1
Projected Residential Surveys

Timeline	Implementation Action
First Quarter , 2010	Recruit 25 high water use customers for pilot program and provide free audit. Based on audit results, develop self-audit kits w/interior and exterior water use component.
Second Quarter, 2010	Make adjustments indicated by pilot program. Produce self-audit kits for general distribution Publicize availability of kits
Third Quarter, 2010	Distribute kits and follow up. Determine benefit of expanding program.
Total Cost	$5,500 500 = 100 kits @ $5 each $5,000 = Estimated staff time

The total costs of implementing this DMM can be calculated based on the number of self-audit kits and the price of each. The District projects that approximately 100 kits will be distributed throughout the service area at a cost of $5 each, which will result in $500 in expenditures for the kits. Also, the cost of estimated staff time to assist in the

implementation actions shown in Table 6.3-1, is approximately $5,000. Therefore, the total cost of the proposed implementation actions is estimated at $5,500, with all costs incurred in 2010.

DMM 2 – Residential Plumbing Retrofit

MSWD staff members have worked with the City of Desert Hot Springs and the County of Riverside to ensure enforcement of the state law requiring installation of ultra-low flow (ULF) plumbing fixtures in new construction. Currently, only ultra-low-flush toilets (ULFT) are sold in California for any type of construction or renovation.

The City of Desert Hot Springs and the County of Riverside are responsible for ensuring the public's compliance with plumbing fixture efficiency standards, and enforcing ULFT replacements. The District's 2004 Water Conservation Master Plan proposes to analyze sponsored recirculation systems that are appropriate for homeowners to use in order to reduce water waste. The District will also analyze available historical use patterns and other appropriate data to determine if projected water savings justify the program's implementation. In order to increase the cost effectiveness of rebate programs, the District will explore volume purchasing opportunities with other regional water agencies. The level of rebates offered by the District will also be determined.

A variety of residential plumbing retrofit programs are available and the District is investigating one offered by Resource Action Programs (RAP). The RAP residential plumbing retrofits result in the following savings: Showerheads: 5.2-5.8 gallons per day (gpd); Aerators: 1.5 gpd; Leak Detection Tablets: 8 gpd w/leak (or 0.64 gpd overall).

Table 6.3-2 provides projected number of residential plumbing retrofits and the associated projected water savings through 2010. Table 6.3-3 details the projected implementation actions that will take place in 2009.

Table 6.3-2
Projected Residential Plumbing Retrofits

MSWD	Goals (2005-2010)
# of Retrofits	2100
Water Savings	10,634,400 gallons
Expenditures	$5,000

Table 6.3-3
Projected Implementation Actions

Timeline	Implementation Action
First Quarter, 2009	Develop Water Wise retrofit program with RAP
Third Quarter, 2009	Implement Water Wise program with 5th Grade classes: 700 students x 3 fixtures each = 2100 retrofits 10,128 gals saved annually per family x 700 families x 1.5 years = 10,634,400 gallons
Total Cost	$5,000

The method to evaluate effectiveness will consist of calculating estimated water savings for each DMM and comparing historic water demand with the current water demand and then determine if an acceptable level of savings is achieved.

DMM 3 – System Water Audits, Leak Detection and Repair

MSWD is currently using a wide range of operational policies and practices to ensure the efficient use of its water supply. MSWD conducts monthly monitoring of all water services. In addition, daily inspection of all facilities such as pump stations, wells, reservoirs, valve vaults, etc, is completed. On an annual basis, visual inspection of all easements and pipeline alignments is accomplished.

The District has an aggressive meter replacement program. Meters are re-built on a multi-year cycle to ensure accuracy and proper functioning. MSWD's water system is fully metered. Therefore, MSWD completes annual checks on the accuracy and operation of production meters by either recalibrating and reinstalling or replacing meters that do not fall within the required operating range of AWWA standards.

MSWD accomplishes water audits and leak detection through various District activities focused on finding and correcting water losses. Field crews visually survey the system as they travel the throughout the district service area on a daily basis. The District's telemetry system also enhances the ability to locate and correct large leaks expeditiously. Leak monitoring is accomplished by all operations field personnel. In the event of a leak, prompt response and investigation is communicated to the District by customers and other entities.

MSWD offers dye tablets to all customers. At public outreach events, the District provides the tablets at no charge and offers a pamphlet on how to use them. The District service crew carries the tablets when making service calls, especially when responding to complaints of high water bills. Also, the District encourages landlords to make them available to tenants. Finally, the availability of the free tablets is advertised on the District website, stating that customers may come into the MSWD lobby and pick up tablets at no charge.

MSWD has recently secured a DWR grant to replace aging and leaky waterlines. The $4.4 million grant for the Dos Palmas Waterline Replacement Project will provide for replacement of 56,200 linear feet of waterlines that are responsible for 25 percent of the leaks in the District's service area. MSWD will cover at least $550,000 of expense not included in the DWR grant.

MSWD works diligently to confirm that the appropriate parties are billed for water loss resulting from damaged fire hydrants, air-vacuums, blow offs, dig-ins, etc. In addition, monthly monitoring of "unaccounted-for" water losses assists in identifying leaks. Average unaccounted-for water losses are currently at approximately 8 percent for MSWD.

To evaluate the effectiveness of these conservation measures, the District finance staff will continue to review the data records to confirm that the unaccounted-for water losses remain low and consistent. Because of the District's proactive measures, the unaccounted-for water losses are projected to be approximately 8 percent. The CUWCC has established a standard rate of water savings based on the repair of a distribution line: a 1-inch crack in a distribution main at 100 pounds per square inch (psi) can leak 57 gallons per minute. Cost and savings depend on the age of infrastructure for the water system.

The District implements programs on leak detection and repair, metering, meter replacement, system flushing, reservoir cleaning and maintenance, valve maintenance and mapping. The District proposes to review distribution system operational procedures and maintenance practices with appropriate field and administrative staff, as detailed in the 2004 Water Conservation Master Plan. These measures will ensure system reliability. The hydrant flushing program will be reviewed for its scope and timing, as well as to determine how much water is lost during flushing.

In addition, the District's 2004 Water Conservation Master Plan identifies how the District may use water audits to develop a tiered conservation rate structure. The District will establish water conservation audit programs to target the District's largest water users by contacting the Coachella Resources Conservation District to determine the steps, timeframe and cost to sponsor audits targeting the top 10-20 high water users within the District's service area.

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

The District has been fully metered since its inception in 1953. An inverted, tiered rate structure was adopted by the Board of Directors in 1985 and is still being used with the current rates. The District will continue to install and read meters on all new accounts. Metering allows the District to conserve a total of 20-30 percent of the water demand overall, and up to 40 percent savings during peak demand periods, as estimated by the CUWCC's BMP Costs and Savings Study (December 2003).

DMM 5 – Large Landscape Conservation Programs and Incentives

Large landscape irrigation surveys are offered to cost effectively achieve quantifiable water savings. The audits are performed in conjunction with the District's Efficient Landscaping Guidelines, adopted by the District board on December 20, 2004. The guidelines establish effective water efficient landscape requirements for newly installed and rehabilitated landscapes, as well as promote water conservation through climate appropriate plant material and efficient irrigation practices.

Section 0.00.040 of the Landscaping Guidelines outlines provisions for landscape water audits. All landscaped areas covered by the guidelines which exceed 1.0 acre (43,560 square feet), including golf courses, green belts, common areas, multifamily housing, schools, businesses, public works, parks, and cemeteries, may be subject to a landscape irrigation audit at the discretion of the District if the District determines that the annual maximum applied water allowance has been exceeded for a minimum of 2 consecutive years. At a minimum, the audit will be conducted by a certified landscape irrigation auditor and shall be in accordance with the California Landscape Irrigation Auditor Handbook, the entire document which is hereby incorporated by reference.

The Guidelines also require an irrigation design plan, which includes the installation of separate landscape water meters for all projects except for single-family homes or any project with a landscaped area of less than 2,500 square feet. Automatic control systems shall be required for all irrigation systems and must be able to accommodate all aspects of the design. Mechanical irrigation controllers are prohibited. Plants that require different amounts of water shall be irrigated by separate valves. If one valve is used for a given area, only plants with similar water use shall be used in that area. Anti-drain valves shall be installed in strategic points to prevent low-head drainage. Sprinkler heads shall have application rates appropriate to the plant water use requirements within each control valve circuit. Scheduling aids, including soil moisture sensing devices and ET controllers, are required and recommended, respectively. Emitters shall have applications rates appropriate to the plant water use requirements within each control valve circuit.

MSWD has a water efficient demonstration garden adjacent to its administration building. The garden is approximately 8,000 square feet in size and features a variety of drought-resistant trees, shrubs and groundcover native to the local area and the Coachella Valley. Brochures are distributed to provide explanation of each plant, specific environmental requirements, and to enable interested members of the public to take a self-guided tour of the garden.

Since early 2002, the District has been an active participant along with various Coachella area public agencies and private sector organizations to develop a standardized landscape ordinance appropriate to the arid desert climate. The resulting Coachella Valley-Wide Water Efficient Landscape Ordinance (Ordinance No.1302 adopted by the Coachella Valley Water District on March 25, 2003) is designed to ensure consistency of landscape water efficiency standards, and applies to new and rehabilitated landscapes within the Valley. A key feature of the Ordinance is a 25 percent reduction in landscape water use.

This savings is achieved by changing the plant water-use coefficient factor in the formula originally established by California Assembly Bill (AB) 325 from .8 to .6. With this ordinance, new landscaping for any parcel in the Valley can use no more than 60 percent of the water required for an equivalent sized parcel completely planted in grass.

The City of Desert Hot Springs adopted the District's Efficient Landscaping Guidelines, and incorporated them into its Ordinance No. 2005-02, which establishes a Water Efficient Landscaping Ordinance for the City's boundaries. The City's Ordinance directly adopts the District's Guidelines with minimal modifications, as applicable to the City's jurisdiction. In another jurisdiction served by MSWD, the Riverside County Planning Department stipulates compliance with the District's landscaping guidelines in order for applicants to receive building permits.

The adoption of the District's Guidelines on behalf of the City of Desert Hot Springs, and its consistency with Coachella Valley Water District and Desert Hot Springs' water conservation measures, demonstrates the District's commitment to regional collaboration and support for the implementation of large landscape conservation programs.

The District's Water Conservation Master Plan sets forth an initiative to require water efficient practices in landscape plans and irrigation systems of all new residential and commercial development projects.

In late 2003, MSWD took on a leadership role in landscape water conservation by partnering with a local builder to develop a series of cost-effective and aesthetically pleasing landscape design options for the builder's new residential tract. The landscape solutions emphasized the use of native desert and other water-conserving plants, in concert with water efficient irrigation systems. A key goal of this joint venture was to satisfy the maximum applied water allowance budget established by the Coachella Valley-Wide Water Efficient Landscape Ordinance. The landscape designs jointly developed between MSWD and the builder also reflect several factors important to homeowners, including the style of landscaping, the maintenance demands and water use of a particular design option, and cost. This collaborative effort has resulted in over 30 percent of the homes in Phase 1 of the project featuring water wise landscaping. The District's leadership and innovation was recognized by the water community when the California Association of Water Agencies (ACWA) presented MSWD with the Theodore Roosevelt Environmental Award in 2004 for the Lifestyle Landscaping Program.

Additionally, the Lifestyle Landscaping Program has drawn the attention of the Department of Geography at California State University, Northridge. A graduate student at CSUN has written a thesis for her Master of Arts degree based on the project. The thesis extends the project by contributing import primary research on homebuyer's attitudes when making the purchase decision of turf versus desert landscaping. The District will use the research in formulating conservation messages to the public.

The District is part of the Riverside County Conservation Task Force to create the Riverside County Water Use Efficiency Ordinance. MSWD is an active member of the Task Force to encourage approval and adoption of the ordinance among stakeholders, including County Supervisors, planning agencies, cities, and water districts. This Ordinance will impact the District significantly since its service area is 135 square miles, while the City of Desert Hot Springs is less than 30 square miles. To date, a water budget approach has been recommended to allow customers flexibility and does not dictate design implementation. In addition, the Task Force will evaluate the use and inclusion of Weather Based Irrigation Controllers (WBIC), enforcement of the Ordinance, support from stakeholders, and emphasis on education as a key component of the implementation. The Task Force has agreed to develop a Model (draft) Ordinance by 2006. Once the draft is complete, it will go out to the cities for review.

MSWD provides resources to assist residents in planning and implementing a desert-friendly landscape. Residents within the MSWD service area are provided with the steps for water conservation measures in their homes and businesses under the following three categories of land uses: Landscape Makeover- Residential, Landscape Planning (in-fill projects which require a building permit), and Landscape Planning (tract projects). The steps for each category are summarized below.

Landscape Makeover - Residential

MSWD recommends water-wise and desert-friendly plant materials in homes and businesses. Desert-friendly landscape styles include the following: Arid, Semi-Arid, and Lush & Efficient. Arid landscapes include slower growing, low water use plant materials and often incorporate decorative rock or mulch into the landscape design. A 2000-square foot, Arid landscape design will use about 29,000 gallons of water per year. Semi-Arid landscapes use plant materials similar to Arid, but may also include a limited turf area for pets and children, if needed. The Semi-Arid style may include a mix of low and medium water-use plants. A 2000-square foot, Semi-Arid landscape will use about 38,000 gallons of water per year. Lush & Efficient landscapes may incorporate high water use plants or a larger amount of grass. Careful, ongoing maintenance of the irrigation system is a must, as well as shaping the turf areas to conform to sprinkler patterns and avoid runoff. A 2000-square foot, Lush & Efficient landscape will use about 56,000 gallons of water per year. A Turf lawn requires heavy maintenance and uses about three times more water than the Arid landscape. Turf lawns also look out of place, and do not blend in with the desert's natural beauty. A 2000-square Foot, Turf landscape will use about 96,000 gallons of water per year.

MSWD also refers its service area residents to the following links for further information:

- The New Mexico Office of the State Engineer 5-step guide to creating a water-wise landscape, called "Xeriscape 101: A Step-by-Step Guide to Creating a Water-Wise Yard."
  http://www.ose.state.nm.us/water-info/conservation/xeriscape-101.html.

- Gallery of California Heritage Gardens: http://www.bewaterwise.com/Gardensoft/garden_gallery.aspx

- Coachella Valley Water District's guide, "Lush & Efficient: Gardening in the Coachella Valley," contains information on topics such as "The Ingredients of a Desert Garden," "Grouping Plants by Sun and Water Needs," and "How Much and When to Water." It also includes a month-to-month gardening calendar for the Coachella Valley and a vast plant database. "Lush & Efficient" can be ordered from Coachella Valley Water District or you can browse the online version at: http://cvwd.org/lush&eff.htm.

- The Southern Nevada Water Authority has useful information on general landscape tips at: http://www.snwa.com/html/ws_landscape_tips.html

- The Alliance for Water Awareness and Conservation (AWAC) provides featured plant updates at: http://www.hdawac.org/

- The Water Education Water Awareness Committee (WEWAC) provides monthly plant features at: http://www.usewaterwisely.com/potm.cfm

On its website, MSWD also provides a water budget calculator to assist residents in figuring out what their water allowance is and how the landscape alternatives fit into the allowance. MSWD provides detailed instruction on how to use the calculator, including determining square footage of landscape and annual maximum water allowance for landscape. Based on the calculations, a type of irrigation will be suggested, for example, drip irrigation (non-turf), and the recommended footage on which to use spray irrigation.

MSWD then provides a step by step process for selecting the types of plants that will meet the recommended irrigation methods and landscape size. The water use calculator will estimate the amount of water that the selected landscape and plant materials will use on an annual basis.

The next step MSWD provides includes design and installation of an efficient irrigation system. MSWD encourages public consultation of MSWD staff as a source of information.

Landscape Planning (in-fill projects which require a building permit)

The three landscape options mentioned above, Arid, Semi-Arid, and Lush & Efficient, are also available for selection by "in-fill" developers. A plant list plus other information is available from both MSWD and the City of Desert Hot Springs.

MSWD recommends beginning with a map of the project site that shows relevant structures and ground formations to estimate the square footage that needs landscaping. Builders are referred to the same links outlines above on how to create a landscaping map.

This information is crucial for new developers in the MSWD region, since Desert Hot Springs requires a building permit and compliance with water-efficient landscaping practices as outlined in the City's Landscape Ordinance and MSWD's Water Efficient Landscaping Guidelines. The Ordinance and Guidelines may also be found in the City's Building and Development Code. The Guidelines establish a water budget for the area to be landscaped and then compute the expected water use for the landscape plan. The expected water use cannot exceed the water budget.

The Guidelines also outline an inspection and sign-off process to confirm that the landscape that is installed is consistent with the approved landscape design. A landscape architect will need to make arrangements with MSWD to inspect any installed landscaping and irrigation system as part of the Certificate approval process. A building permit will also need to be obtained and MSWD will assist in the process.

Landscape Planning (tract projects)

Developers of residential tracts in Desert Hot Springs are required to comply with water-efficient landscaping practices. Water Efficient Landscaping Guidelines have been developed by MSWD and are contained in the City of Desert Hot Springs Building and Development Code. A Landscape Documentation Package is required from all tract developers in order for project plans to be approved. Once the landscaping is installed and passes inspection, a Certificate of Substantial Completion is completed as part of the escrow closing process.

The MSWD Water Efficient Landscaping Guidelines should be consulted to ensure that the expected water use cannot exceed the budget. The Guidelines also outline an inspection and sign off process to confirm that the landscape that is installed is consistent with the approved landscape design. Arrangements with MSWD are required to have the newly installed landscaping and irrigation system inspected by MSWD staff as part of the Certificate approval process.

The District is currently working with the City of Desert Hot Springs to facilitate the implementation process of the Landscaping Guidelines and the City's ordinance. Additionally, the District is looking to parlay the results of the model landscape demonstration project such that other new residential projects will incorporate similar water efficient landscaping, irrigation and maintenance programs. The measure of effectiveness for the City of Desert Hot Springs in implementing this DMM will consist of the amount of increase in class participation.

Table 6.3-4 reflects the fees projected for landscape plan check and inspection. These costs are not borne by the District, but paid by the customers using the plan check and inspection services.

Table 6.3-4
Projected Landscape Program

Implementation Action	Costs 2005-2010
Tract developments plan check	$1000 /tract x 5 tracts/yr x 6 years = $30,000
Infill plan check	$300/APN x 100/yr x 6 years = $180,000
New SFR inspections	$60/ APN x 2200 new units = $132,000
Staff time to manage program	$9000/yr x 6 years = $54,000
Total	$396,000

DMM 6 - High Efficiency Washing Machine Rebate Program

The District is aware that its customers who wish to purchase a high efficiency clothes washer (HECW) may do so at area retailers. Prices for HECWs fall into a range of $400 to $1,000, as compared to standard machines that are in a range of $300 to $1,500. Because of the price differential, certain water and electric utilities have developed rebate programs to encourage their customers' buying behavior in favor of the HECWs.

Historically, MSWD has not sponsored rebate programs. As a result, the District would take a cautious approach in initiating such programs, choosing to target customer segments with conservation products that have the highest likelihood for success.

In conjunction with DMM 9 and 14 (discussed below), the District will evaluate adding HECWs in the rebate programs being contemplated. The evaluation will include the considerations outlined by the CUWCC for a cost benefit analysis. It will also include local demographics that impact the buying decision. Such demographics include the following:

- Household income: customer's ability to pay a premium to purchase HECW, even with rebate
- Ownership of primary residence: high incidence of rental properties suggest frequent use of commercial Laundromats
- Location of primary residence: high incidence of second homes/vacation homes (snowbirds)

The implementation projection for DMM 6 will be First Quarter, 2008, which is in congruence with DMM 9 and DMM 14.

DMM 7 – Public Information Programs

MSWD informs its customers about water use efficiency in a variety of ways. The District provides new customers with a welcome packet of various publications, including conservation measures. MSWD distributes the District's water quality report, and articles on water conservation. Flyers are also provided to the public on a variety of topics including water conservation.

Another source of information is local publications such as the Chamber of Commerce Newsletter and the Valley Breeze Newspaper. The District provides a monthly column of conservation tips for publication, highlighting business conservation and residential conservation, respectively. The District also utilizes staff members to present conservation and informational programs to community organizations and businesses throughout the service area.

The District also participates in special community events including the California Desert Nature Festival and the Annual Festival of the Waters sponsored by the Chamber of Commerce. These events enable the District to provide an information booth to distribute informative water literature and related water conservation materials to the public.

Since 2001, the District has hosted a Water Information Study Group (WISG) and now boasts an alumni class of 75. This program consists of a series of about 4 to 5 informal mini-classes focusing on water conservation, water quality, water rights law and hydrogeology. The program is open to all customers in the service area.

In addition, the District has completed the development of a web site to provide conservation and other helpful public information to its customers via the Internet. The District's website www.mswd.org was launched in 2004.

Account usage history is also provided to customers on bi-monthly billing statements to help customers stay informed about their current usage, previous usage, cubic feet used per day (and last year), and the percentage of change in usage during that time.

The public education program will be extensively expanded as population growth increases in the District's service area.

The District will continue to provide public information to its customers as a tool to promote water use efficiency. The measure of effectiveness for the District in implementing this DMM will consist of monitoring the number of pieces of literature distributed and the feedback provided from the public.

Table 6.3-5 provides historic and projected number of participants, special events, and information distribution in the District's public information program through the year 2010.

Table 6.3-5
2001 – 2005 Public Information Program

Activity	# Reached	Cost
2001		
Outreach to Business and Water Industry		
Special Events, Publications, Presentations	6,840	$5,335
Public Outreach		
Special Events, Publications, Presentations	123,260	$5,700
Total	130,100	$11,035
2002		
Outreach to Business and Water Industry		
Special Events, Publications, Presentations	3,490	$735
Public Outreach		
Special Events, Publications, Presentations	123,325	$10,801
Total	126,815	$11,536
2003		
Outreach to Business and Water Industry		
Special Events, Publications, Presentations	3,110	$1,265
Public Outreach		
Special Events, Publications, Presentations	117,995	$9,290
Total	121,105	$10,555
2004		
Outreach to Business and Water Industry		
Special Events, Publications, Presentations	15,045	$1,720
Public Outreach		
Special Events, Publications, Presentations	128,605	$19,715
Total	143,650	$21,435
2005		
Outreach to Business and Water Industry		
Special Events, Publications, Presentations	15,000	$1,535
Public Outreach		
Special Events, Publications, Presentations	122,025	$13,300
Total	**137,025**	$14,835

The District plans to continue its Public Education Program through 2010 at the same rates of participation and costs presented for 2005. The method to measure effectiveness of implementing this DMM for the District will include quantifying the number of participants in the public programs, as well the number of public announcements/brochures distributed throughout the service area. An increase in

participation and distribution of materials will indicate heightened public water conservation awareness and may correlate with decreased water demand.

DMM 8 – School Education Programs

MSWD provides extensive water education opportunities to the schools throughout its service area by providing instruction about water resources to students. The following events involve educational outreach to the students on water conservation issues:

- District Funding for Natural Science Education Connection Program
- Groundwater Guardians High School Program
- Groundwater Guardians Middle School Program
- District support for Annual Science Fair program

Recently, the District initiated an innovative program called the Natural Science Education Connection (NSEC). NSEC provides a creative academic environment where students can explore and experience their community first hand. This novel approach is a joint funding effort with the City of Desert Hot Springs, the Palm Springs Natural History Museum, the Anderson Children's Foundation and the Palm Springs Unified School District. NSEC's mission is: "To nurture a student's interest in learning through creative, interactive, natural science programs resulting in a sense of competence, accomplishment and confidence both in the science classroom and in the student's life." Activities conducted by NSEC include: (1) providing instructional services in school classrooms regarding natural sciences subjects; (2) providing hands-on learning opportunities about the natural sciences in a laboratory setting; (3) conducting field study related to natural sciences instruction; and (4) interacting with others in the natural sciences education community in ways that enhance learning about the natural sciences. Each of the District's programs maintain compliance with California State Standards for science and are age-appropriate for the grade levels.

Since 1997 the District has been a Groundwater Guardian Affiliate and continues to be an active supporter of the three local Groundwater Guardian Teams. The teams are all affiliated with the Groundwater Foundation and carry out water conservation activities on the campuses of the local high school and middle school. The Desert Hot Springs team's mission is "Educating and motivating the Greater Desert Hot Springs community to care for and about their groundwater."

Table 6.3-6 shows the past and projected participation in the Groundwater Guardian Program for the District's service area. The program participation is expected to continue at the same rates through 2010.

Table 6.3-6
Groundwater Guardian Program

Classes		Number of Presentations					
Grade Level	**#classes**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006-2010 Annual Activities**
Grades 4 -6	12	2	8	8	11	11	11
Grades 7-8	NA	NA	4	6	NA	NA	NA
High School	11	9	9	9	183	183	183
Students reached (total)		604	704	820	850	1,410	1,410
Teacher workshop		7	13	10	16	25	25
Total Cost ($)		10,000	10,000	10,000	15,000	15,000	15,000

Table 6.3-7 provides the historic and projects the future number of students participating in the District's Natural Science Education Connection program. The program was started in 2004 and is anticipated to continue at the same rates of participation, including 1,700 students on an annual basis, as well as continued District funding through 2010.

Table 6.3-7
Natural Science Education Connection Program

Grades 4-6			
Activity	**2004**	**2005**	**2006-2010 Annual Activities**
# of Classes	16	16	16
# of Students Reached	1,600	1,700	1,700
# of Presentations	176	580	580
Total Cost ($)	25,000	25,000	25,000

As stated in the Water Conservation Master Plan, the District will continue to seek out opportunities to expand the District's school education program, and support teaching staff when needed.

DMM 9 – Commercial, Industrial, and Institutional Programs

Water audits are an effective way to improve irrigation efficiency for high-volume residential and commercial water users such as homeowner associations and golf courses.

Audits evaluate delivery effectiveness and environmental factors such as soil type, salinity levels and weather conditions. The District's 2004 Water Conservation Master Plan identifies how the District may use water audits to establish water conservation audit programs to target the District's largest water users. As part of implementing water audits, the District will contact the Coachella Resources Conservation District to determine the steps, timeframe and cost to sponsor audits targeting the top 10 to 20 high water users within the District's service area. This will be implemented during the first quarter of 2008.

The City of Desert Hot Springs and the County of Riverside are responsible for ensuring the public's compliance with plumbing fixture efficiency standards, and enforcing ULFT replacements. The District proposes to evaluate the feasibility of establishing a water efficient fixture rebate program to encourage commercial customers (i.e. hotel and spa resorts) to replace high water consumptive toilets, high flow showerheads and clogged faucet aerators. The District will also analyze available historical use patterns and other appropriate District data to determine if projected water savings justify the establishment of such a program. The level of rebates offered by the District will also be determined.

DMM 10 – Wholesaler Assistance

The District's wholesale water provider is the Desert Water Agency. Because MSWD is not a wholesaler, this DMM does not apply.

DMM 11 – Conservation Pricing

The District's current water rates clearly meet the definition of "conservation pricing" as defined by the CUWCC, which states that conservation pricing includes, "rates designed to recover the cost of providing service." The District rates have been designed to recover the full cost of water service. Conservation pricing has been implemented in the District's service area since 1985.

The District's bi-monthly Water Service Charge is based on meter size and covers costs associated with account maintenance, water lines, meters, and reading meters. In addition, a bi-monthly lifeline is provided to customers, which is a reasonable amount of water per meter for purely domestic purposes. The lifeline allowance is 500 cubic feet (3,740 gallons). There is no charge for the lifeline allowance for either residential or commercial class customers.

The District uses an inverted incline block, multi-level rate structure for all customer classes. Customers using 501 to 3,000 cubic feet are charged $0.76 per 100 cubic feet. A penalty is assessed to those using in excess of 3,000 cubic feet bimonthly by charging $0.82 per 100 cubic feet. The District offers commercial customers separate irrigation meters to assist in irrigation water management. Sewer service charges for commercial customers are based on water consumption and are not imposed on consumption from irrigation meters.

Over the 2001-2005 period, the District's customers have managed their water use such that more of them fall within the 501 to 3,000 cubic foot usage bracket. Table 6.3-8 shows that during 2005, 49% of MSWD customers were in the lower tier during the month of January and that 38% were in the lower tier during August. These percentages compare favorably to 2001, when 42.3% and 34.1%, respectively, were in the lower tier.

Table 6.3-8
Conservation Pricing
Percentage of Customers at Low Tier

Month	2001	2003	2005
August	34.1%	33.1%	38%
January	42.3%	42.2%	49.0%

The District's Water Conservation Master Plan (September 2004) includes targeted conservation initiatives with regard to tiered or conservation pricing. The District states that conservation pricing can serve as a strong incentive for consumers to carefully consider their daily water use. This type of pricing encourages conservation on a continuous basis. Therefore, the District continuously monitors the need for changes to its existing rate structure, with a particular focus on new development and those customers that contribute more to water system operation and maintenance (O&M) expenses. The District's Plan concludes that revenue requirements should be determined to meet water system O&M expenses. In addition, costs should be allocated equitably among different uses and users. Finally, the District evaluates on an ongoing basis whether rates provide adequate incentives for consumers to conserve water.

DMM 12 – Conservation Coordinator

The District distributes the responsibilities of a conservation coordinator among various staff members. Water conservation responsibilities are shared among three key staff members, including the Directors of Administration, Finance, and Operations. The Director of Administration focuses on public outreach, grant development, and education programs through coordinating various community events. The Director of Finance monitors the District's unaccounted-for water losses and ensures a steady rate structure and adequate revenue. The Director of Operations is responsible for distribution line repairs, i.e. leaking pipes and line replacements. Each position has a focused responsibility that allows the public to contact a specific person to mitigate problems as they arise and ensures water conservation measures are implemented from three levels of management. Collectively, they are responsible for analyzing, developing, promoting, monitoring and evaluating all MSWD conservation-related activities, including proactively cultivating customer attitudes on how reasonable and permanent changes in water use habits can be achieved.

The District's 2004 Water Conservation Master Plan identified the establishment of a full-time water efficiency coordinator position, based on the numerous conservation activities envisioned, to ensure effectiveness of conservation efforts. As the District grows, it will monitor the need for a full-time conservation coordinator who would be responsible for evaluating the District's conservation action plan and preparing an evaluation plan for analyzing effectiveness of conservation measures. The evaluation plan would include process evaluation, impact evaluation, and monitoring. Briefly, process evaluation will need to look at the effectiveness of initiative implementation methods and overall benefits. The impact evaluation phase must focus on obtaining accurate measurements of changes in customer water use that are clearly attributable to a particular conservation initiative. Finally, monitoring will need to assess specific progress toward reaching a conservation target.

The Water Conservation Master Plan recommends that the coordinator undertake an interim evaluation of each initiative following its initial implementation. The evaluation will be conducted based on studies conducted by AWWA Research Foundation information, CUWCC, and the EPA. The results of the evaluation will assist in modifying the initiative and allowing feedback to be provided to the general manager and key staff.

Conservation Coordinator functions began in earnest with development of Landscaping Guidelines in 2002 and passage in 2004. Current annual cost estimates based on time devoted to conservation functions by the District's staff members, at midpoint of salary range + 40% benefit load, are shown below in Table 6.3-9.

Table 6.3-9
Conservation Coordinator Cost

Position	Percentage	Cost
Director of Finance	5%	$7,035
Director of Operations	10%	$12,200
Director of Administration	20%	$26,800
Total		$46,035

DMM 13 – Water Waste Prohibition

The District's Board of Directors adopted Ordinance 93-3, the Water Regulation and Service Ordinance on October 18, 1993. The Ordinance details specific prohibitions on wasting water and imposes penalties if the measures are not followed by the customers.

The District's Landscape Guidelines includes Section .040 on Water Waste Prevention. The Guidelines state that water waste resulting from inefficient landscape irrigation including run-off, low-head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, or structures shall be prohibited. All broken heads and pipes must be repaired within a reasonable time following notification; within 72 hours is expected.

The District regularly visits residential land areas to monitor water waste prohibition. The cost to the District for sending out a staff member to conduct site visits is shown below in Table 6.3-10.

Table 6.3-10
Projected Water Waste Prohibition Monitoring

Year	Number of Visits	Cost per Visit	Total Cost
2005	24	$80	$1,920
2006	36	$80	$2,880
2007	48	$80	$3,840
2008	60	$80	$4,800
2009	60	$80	$4,800
2010	60	$80	$4,800
Total			$23,040

DMM 14 – Ultra-Low Flow Toilets

The District's 2004 Water Conservation Master Plan proposes to evaluate the feasibility of establishing a water efficient fixture rebate program to encourage commercial customers to replace non-ULFT toilets, showerheads, and faucet aerators. The District will pattern its program after similar regional and local rebate programs which take advantage of work already completed in the area. The level of rebates offered by the District will also be determined.

As previously stated, the City of Desert Hot Springs and the County of Riverside are currently responsible for ensuring the public's compliance with plumbing fixture efficiency standards, and enforcing ULFT replacements. The District anticipates implementation of a ULFT replacement program in 2008 for its service area, with a focus on the spa and hotel industry, as shown in Table 6.3-11 below.

Table 6.3-11
Projected ULFT Implementation
First Quarter 2008

Type of User	# of Fixtures 2008-2010
Fixtures in Service Area	900 hotel rooms = 900 fixtures
Assume 20% existing ULFTs implemented	180 units in place, 720 units need replacing.
Goal	50% penetration in 3 years
Objective	Replace 90 per year in each of 3 years.
Study cost/benefit of providing rebate at various levels	$25, $50 and $75

6.4 WATER USE EFFICIENCY AND DEMAND MANAGEMENT MEASURES SUMMARY OF IMPLEMENTATION

Water use efficiency is an integral part of water supply planning and operations. The District works to improve the understanding of costs and benefits of conservation so that investment decisions are effective at meeting program goals.

Many of the DMMs have been implemented in concert with the MOU schedule, others are being implemented, and effective DMMs will continue on an ongoing basis. The District will continue to work to implement cost-effective DMMs into the future.

Table 6.4-1 below summarizes the District's projected implementation of demand management measures, as described in Section 6.3.

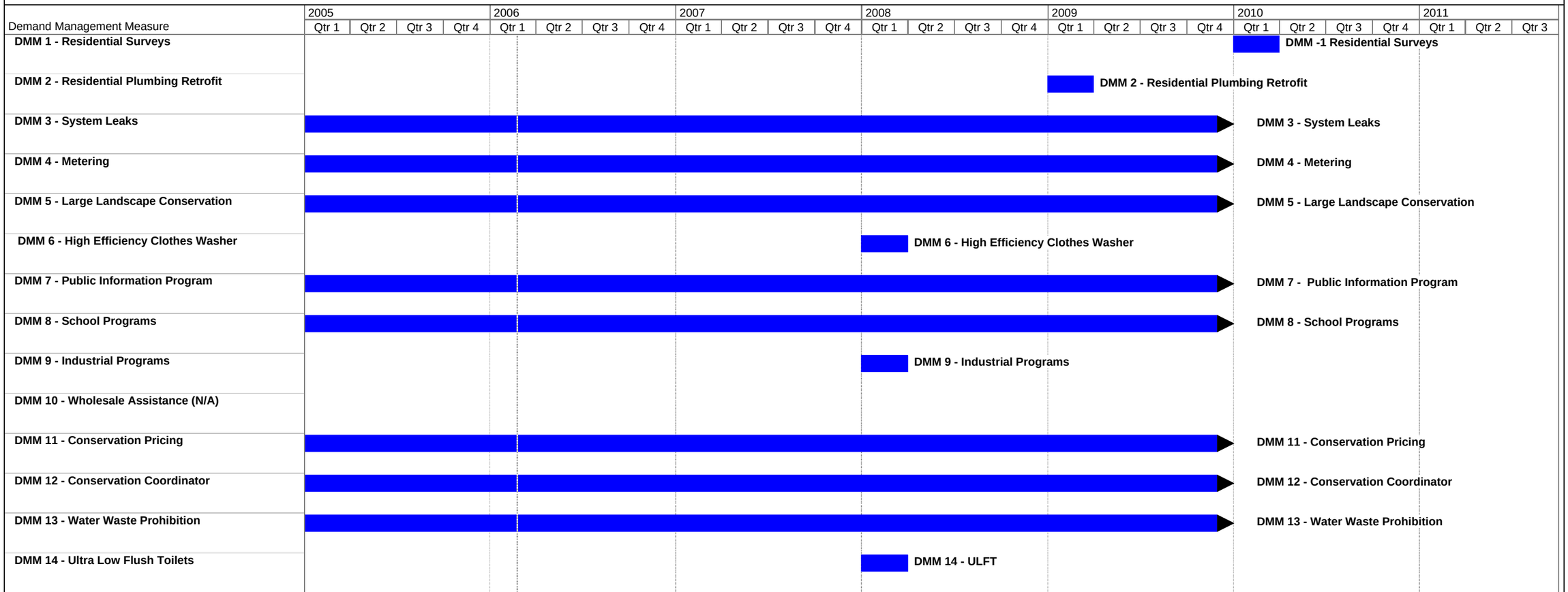
Table 6.4-1
Summary of DMM Implementation

Measure #	Activity	Summary of Implementation Activity
DMM 3	System leaks	In effect
DMM 4	Metering	In effect
DMM 5	Large Landscape Conservation	In effect
DMM 7	Public Information Program	In effect
DMM 8	School Programs	In effect
DMM 11	Conservation Pricing	In effect
DMM 12	Conservation Coordinator	Quarterly reporting to Board of Directors on relevant DMMs; tracking conservation efforts on employee time sheets.
DMM 13	Water Waste Prohibition	Began in 2005—project 2 on-site visits for water waste per month, increasing to 5 per month in 2008.
DMM 6	Washing Machine Rebate	Conduct cost benefit analysis and evaluate suitability of rebate based on customer demographics.
DMM 9	Industrial Programs	Implement Water Wise conservation program from Resource Action Programs. Use estimates from RAP.
DMM 14	ULFT	Focus effort on spa and hotel industry with 50% rebate. Explore volume purchasing arrangements with other water districts.
DMM 2	Residential Plumbing retrofit	Implement Water Wise conservation program from Resource Action Programs. Use estimates from RAP.
DMM 1	Residential Surveys	Initially make surveys available on a voluntary basis with 50% cost share between customer and the District. After first 25 surveys, evaluate cost benefit analysis. Estimated cost per survey $300.

Figure 6.1 below summarizes the DMM Implementation Schedule for the District.

2005 Urban Water Management Plan
Mission Springs Water District

Demand Management Measures Schedule



DMM Schedule

Figure 6-1

SECTION 7
WATER SHORTAGE CONTINGENCY PLAN

7.1 INTRODUCTION

California's extensive system of water supply infrastructure, its reservoirs, groundwater basins, and inter-regional conveyance facilities, mitigate the effect of short-term dry periods. Defining when a drought begins is a function of drought impacts to water users. Drought is a gradual phenomenon. Although droughts are sometimes characterized as emergencies, they differ from typical emergency events. Droughts occur slowly, over a multi-year period. Drought impacts increase with the length of a drought, as carry-over supplies in reservoirs are depleted and water levels in groundwater basins decline.

During water shortage emergencies, the District will implement water conservation stages, adopted as Section 15 of District Ordinance No. 93-3, which is included in Appendix F. The purpose of the Conservation Stages is to reduce the effect of a water shortage on District customers during water shortages and emergencies. In compliance with the Water Code requirements, this plan imposes a 50 percent reduction in the total water supply. The District will further implement both its Water Conservation Master Plan adopted in September 2004 and its Water Efficient Landscaping Guidelines, which were incorporated by reference into the City of Desert Hot Springs' Water Conservation Ordinance.

7.2 STAGES OF ACTION

Mission Springs Water District Shortage Response

The District's Water Regulations and Service Ordinance (Ordinance No. 93-3) establishes procedures and policies necessary for the orderly administration of a water conservation program to prohibit waste and restrict water during a water shortage emergency. The Ordinance also contains three stages of action for water supply shortages.

Under the existing Ordinance No. 93-3, the General Manager of the District shall monitor the supply and demand for water on a daily basis to determine the level of conservation required by the implementation or termination of the Water Conservation Stages, and shall notify the Board of Directors of the necessity for the implementation or termination of each stage. Each declaration of the Board of Directors implementing or terminating a water conservation stage will be published at least once in a newspaper of general circulation, and will then be posted at the District offices. Each declaration will remain in effect until the Board of Directors otherwise declares.

District's Stages of Action

During water shortages, the District has the ability to meet its demands by applying the Water Conservation Stages. These stages impose phases of mandatory reduction of water use up to 50 percent and consist of three stages that help reduce water use within the District's system in order to meet use-reduction targets.

As detailed in District Ordinance No. 93-3, Section 15 (Adopted October 18, 1993), the following series of water conservation stages will take place in the event of a severe water shortage:

Stage 1 – Voluntary Conservation - Normal Water Use

During this stage, customers are encouraged to continue to use water wisely, to prevent the waste or unreasonable use of water, and to reduce water consumption to that necessary for ordinary domestic and commercial purposes.

Stage 2 – Mandatory Compliance – Threatened Water Supply Shortage

In the event of a threatened water supply shortage which could affect the District's ability to provide water for ordinary domestic and commercial uses, the Board of Directors shall hold a public hearing at which customers shall have the opportunity to protest and to present their respective needs to the District. The Board may then, by Resolution, declare a water shortage condition to prevail, and the following conservation measures shall be in effect:

- Exterior Landscape Plans – Exterior landscape plans for all new commercial and industrial development shall provide for timed irrigation and shall consider the use of drought resistant varieties of flora. Such plans shall be presented to and approved by the District prior to issuance of a water service letter.
- Excessive Irrigation and Related Waste – No customer shall cause or permit the use of water for irrigation of landscaping or other outdoor vegetation, plantings, lawns or other growth, to exceed the amount required to provide reasonable irrigation and shall not cause or permit any unreasonable or excessive waste of water.
- Agricultural Irrigation – Persons receiving water from the District who are engaged in commercial agricultural practices, whether for the purpose of a crop production or growing of ornamental plants shall provide, maintain and use irrigation equipment and practices which are the most efficient possible, Upon the request of the General Manager, these persons may be required to prepare a plan describing their irrigation practices and equipment, including but not limited to the estimate of the efficiency of the use of water on their properties.
- Commercial Facilities – Commercial and industrial facilities shall, upon request of the General Manager, provide the District with a plan to conserve water at their facilities. The District will provide these facilities with information regarding the average monthly water use by the facility for the last two-year period. The facility

will be expected to provide the District with a plan to conserve or reduce water used by the percentage deemed by the Board of Directors to be necessary under the circumstances. After review and approval by the General Manager, the water conservation plan shall be considered subject to inspection and enforcement by the District.

- Parks, Golf Courses, Swimming Pools, and School Grounds – Public and private parks, golf courses, swimming pools, and school grounds shall use water for irrigation or pool filling only between the hours of 6 P.M. and 6 A.M..
- Domestic Irrigation – Upon notice and public hearing, the District may determine that the irrigation of exterior vegetation shall be conducted only during specified hours and/or days, and may impose other restrictions on the use of water for such irrigation. The irrigation of exterior vegetation at other than these times shall be considered to be a waste of water.
- Swimming Pools – All residential, public and recreational swimming pools shall use evaporation resistant covers and shall recirculate water. Any swimming pool which does not have a cover installed during periods of nonuse shall be considered a waste of water.
- Run-off and Wash-down – No water shall be used for the purposes of wash-down of impervious areas, without specific written authorization of the General Manager. Any water used on premises that is allowed to escape off the premises and runoff into gutters or storm drains shall be considered a waste of water.
- Vehicle Washing – The washing of cars, truck or other vehicles is not permitted, except with a hose equipped with an automatic shut-off device, or at a commercial facility designed and so designated on the District's billing records.
- Drinking Water Provided by Restaurants – Restaurants are requested not to provide drinking water to patrons except by request.

Stage 3 – Mandatory Conservation Measures – Water Shortage Emergency

In the event of a water shortage emergency in which the District may be prevented from meeting the water demands of its customers, the Board of Directors shall, if possible given the time and circumstances, immediately hold a public hearing at which customers of the District shall have the opportunity to protect and to present their respective needs to the Board. No public hearing shall be required in the event of a breakage or failure of a pump, pipeline, and conduit causing an immediate emergency. The General Manager is empowered to declare a water shortage emergency, subject to the ratification of the Board of Directors within 72 hours of such a declaration, and the following rules and regulations shall be in effect immediately following such declaration:

- Prohibition – Watering of parks, school grounds, golf courses, lawn watering, landscape irrigation, washing down of driveways, parking lots or other impervious surfaces, washing of vehicles, except when done by commercial car wash establishments, using only recycled or reclaimed water, filling or adding

water to swimming pools, wading pools, spas, ornamental ponds, fountains and artificial lakes are prohibited.

- Restaurants – Restaurants shall not serve drinking water to patrons except by request.
- Construction meters – No new construction meter permits shall be issued by the District. All existing construction meters shall be removed and/or locked.
- Commercial Nurseries and Livestock – Commercial nurseries shall discontinue all watering and irrigation. Watering of livestock is permitted as necessary.

The District shall determine the extent of the conservation required through implementation and/or termination of particular water conservation plans in order to plan for and supply water to its customers, including consumption reduction up to 50 percent. Table 7.2-1 shows the use reduction stages as a guideline for recommending the appropriate conservation stage and water conservation target.

Table 7.2-1
Water Use Reduction Stages

% Shortage Condition	Water Conservation Stage	Type of Use Reduction Program
Up to 10%	1	Voluntary
10% to 15%	2	Mandatory
15% to 50%	3	Mandatory

7.3 ESTIMATE OF MINIMUM SUPPLY FOR NEXT THREE YEARS

As noted in Section 4.2, it has been conservatively assumed that two percent of the capacity of the Mission Creek Sub-Basin will be available to MSWD in any given year, including multiple dry years. Given that assumption, coupled with the fact that nearly 100 percent of the District's supply comes from the basin, MSWD it is anticipated that MSWD will have a reliable source of supply during all multiple dry year periods including the 2006-2008 three year period, as shown in Table 7.3-1.

Table 7.3-1
Three Year Estimated Minimum Water Supply
(Based on Driest 3-Year Historic Sequence)
(AF)

Source	2006 Base Year	2006 Dry Year	2007 Dry Year	2008 Dry Year
Local (Groundwater)	40,000	40,000	40,000	40,000
Recycled	0	0	0	0
Import	0	0	0	0
Total	**40,000**	**40,000**	**40,000**	**40,000**

7.4 CATASTROPHIC SUPPLY INTERRUPTION PLAN

Water Shortage Emergency Response

A water shortage emergency could be the result of a catastrophic event such as result of drought, failures of transmission facilities, a regional power outage, earthquake, flooding, supply contamination from chemical spills, or other adverse conditions.

The District currently has a disaster preparedness plan in place that will be implemented during a catastrophic interruption of water supplies. The District's Emergency Handbook sets forth specific actions to implement the appropriate plan, depending on the type of disaster and describes the organizational and operational policies and procedures required to provide sufficient water supply and safe drinking water and provides a system for organizing and prioritizing water repairs. It also cites authorities and specifies the public and private organizations responsible for providing water service. In general, the General Manager of the District will be known as the Plan Director and will authorize implementation of the Plan, as necessary. In the Plan Director's absence, the Director of Operations will assume these responsibilities. The Plan Director will assign personnel to notification teams. Each special team will have specific positions and duties to carry out. Each employee has a copy of the Disaster Preparedness Emergency Handbook and is aware of his/her responsibilities depending on the type of disaster.

For all disasters, the District has established an emergency operations command, consisting of the General Manager, assisted by the Director of Operations and the Field Superintendent, who will be responsible for determining the best overall priorities and strategies to control the situation. The Public Information Officer is the individual who provides a communication link via radio between the Emergency Operations Centers, such as the City, County, or State OES. The Disaster Advisory Council includes the District's Board of Directors who will assist the District's Emergency Operation Center (EOC), if the situation warrants.

In the case of a water shortage emergency, there are two inter-connections with the Coachella Valley Water District that allow water to be conveyed between the MSWD and CVWD systems. The two connections both feed the Two Bunch Pressure Zone and are situated at the following locations:

- A 6-inch connection located at Little Morongo Road and Dillon Road
- An 8-inch connection located at Bubbling Wells Road and Camino Aventura.

The capacity of the emergency interties was estimated assuming a design flow of 5 feet per second. Estimated capacity of the 6-inch and 8-inch connections is 450 gpm and 775 gpm, respectively. In the case of an emergency water shortage, these emergency interties will be utilized to maintain water supply.

7.5 PROHIBITIONS, PENALTIES, AND CONSUMPTION REDUCTION METHODS

As detailed in District Ordinance No. 93-3, Section 15, the District is committed to implementation of the Water Conservation Stages and the resulting penalties for non-compliance. Under Water Conservation Stage 3, several activities are prohibited. The following activities are specifically prohibited, as included in further detail in the copy of Ordinance No. 93-3 in Appendix F:

- Watering of parks, school grounds, golf courses, lawn watering, landscape irrigation, washing down of driveways, parking lots or other impervious surfaces
- Washing of vehicles, except when done by commercial car wash establishments, using only recycled or reclaimed water,
- Filling or adding water to swimming pools, wading pools, spas, ornamental ponds, fountains and artificial lakes.

Any violation of the District's Water Conservation Stages including waste of water and excessive use, is a misdemeanor and upon conviction thereof, the violator shall be punished by imprisonment, fine or by both such fine and imprisonment as allowed by law. In addition to criminal penalties, violators of the mandatory provision of the Ordinance shall be subject to civil action, as follows:

(1) First Violation. A written notice containing the description of the violation will be given to the person who is suspected of the violation.

(2) Second Violation. $100.00 surcharge applied to the customer's bill if the customer commits a second violation of the Ordinance within a 12-month period, or for failure to comply with the notice of violation within the period stated.

(3) Third Violation. $200.00 surcharge applied to the customer's bill and a flow restricting device to be installed in the customer's water service line for continued failure to comply within 30 days after notice and imposition of second violation sanction. The charge to the customer for installing a flow-restricting device shall be based upon the size of the meter and the actual cost of installation.

(4) Subsequent Violations. For any subsequent violation of the Ordinance within the 24 calendar months after a first violation, a discontinuance of service and the penalty surcharge applied for the third violation shall be imposed and the District may discontinue water service to that customer at the premises or to the meter where the violation occurred. The charge for reconnection and restoration of normal service shall be as provided in the Rules and Regulations of the District. Such restoration of service shall not be made until the General Manager of the District has determined that the water user has provided reasonable assurances that future violations of the Ordinance by the user will not occur.

7.6 REVENUE AND EXPENDITURE IMPACTS AND MEASURES TO OVERCOME THOSE IMPACTS

The District has prepared stringent measures, as outlined in the plan, to effectively mitigate water supply impacts in the event of a catastrophic water shortage or drought. Such a reduction in water consumption could bring with it a loss of revenues needed to maintain and operate the water system. The District's expenditures will be greatly impacted due to the implementation of a water shortage program. The District adjusts its water rates on an annual basis. Therefore, if needed, the District will implement rate adjustments to increase revenue when demand is significantly reduced due to implementation of water conservation measures.

The District is developing a plan to implement water replenishment fees that will be levied on parcels before sub-dividing takes place. The establishment of fees is in response to the District's growth projected at approximately 10 percent annually. The goal of the District is to allow growth with water consumption equal to or less than current consumption, while requiring new development to pay for any supplemental water needed to serve its project.

7.7 WATER SHORTAGE CONTINGENCY ORDINANCE

The District's Water Regulations and Service Ordinance No. 93-3 implements several measures in order to curtail water use and is provided in Appendix F.

7.8 MECHANISMS TO DETERMINE ACTUAL REDUCTIONS IN WATER USE

Under normal conditions, potable water production figures are recorded daily. Weekly and monthly reports are prepared and monitored. This data will be used to measure the effectiveness of any water shortage contingency stage that may be implemented.

The General Manager of the District shall monitor the supply and demand for water on a daily basis to determine the level of conservation required by the implementation or termination of the Water Conservation Stages, and shall notify the Board of Directors of the necessity for the implementation or termination of each stage. As stages of water shortage are declared by the General Manager, the District will follow implementation of those stages and continue to monitor water demand levels. Subsequently, the General Manager may implement or terminate the appropriate stages of water conservation in accordance with the Ordinance. If there is further concern after Stage I of the Water Conservation, a public announcement and notification in a local newspaper will be circulated.

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SECTION 8
WATER RECYCLING

8.1 RECYCLED WATER

The Southern California region, from Ventura to San Diego, discharges over 1 billion gallons of treated wastewater to the ocean each day. This is considered a reliable and drought-proof water source and could greatly reduce the region's and the District's reliance on imported water. As technological improvements continue to reduce treatment costs, and as public perception and acceptance continue to improve, numerous reuse opportunities should develop. Recycled water is a critical part of the California water picture because of the region's high likelihood of drought. As treatment technology continues to improve, demand for recycled water will also increase.

8.2 RECYCLED WATER USE IN MISSION SPRINGS WATER DISTRICT

8.2.1 Current Recycled Water Use

Currently, treated wastewater is not being used to offset potable water demands. However, the demand for recycled water is already present and is expected to increase over time. MSWD has commissioned several studies to determine the infrastructure and economic requirements for proceeding with a recycled water program.

8.2.2 Potential for Recycled Water Use

There is considerable potential for the use of recycled water in the MSWD service area. MSWD has plans to use recycled water for the irrigation of golf courses, parks, medians and greenbelts. A summary of the wastewater effluent quantity currently being discharged is presented in Section 8.3. In order to provide recycled water for irrigation, the District's wastewater treatment plant would have to be upgraded to meet Title 22 tertiary standards. The upgrade would allow the use of activated sludge, microfiltration, and disinfection treatment processes.

MSWD's 2004 Water Conservation Master Plan outlines various planned and implemented activities to ensure water use efficiency throughout the District's service area. Under System Reliability Initiatives, Initiative #2 calls for total management of water resources to ultimately include developing recycled water for the appropriate beneficial uses, such as golf courses, parks, school playing fields, and other public grounds. To implement the use of recycled water, potential recycled water users will need to be identified to quantify the market for a cost-effective water recycling program. In addition, the feasibility and schedule for expanding the Horton Wastewater Treatment Plant to tertiary treatment will also be explored.

The District's Water Efficient Landscaping Guidelines identifies the installation of recycled water irrigation systems (dual distribution systems) as required to allow for the future use of recycled water, unless a written exemption has been granted.

8.2.3 Projected Use of Recycled Water

Recycled water can be used to meet future irrigation demand and, subsequently, offset a portion of potable water demand. Table 8.2-1 shows projected recycled water production and demand through the year 2030. Because MSWD's wastewater treatment plant overlies the Mission Creek Sub-Basin, recycled water can be used for replenishment and favorably impacts water balance calculations. By 2030, MSWD is estimated to have approximately 6,720 acre-ft/yr of available recycled water.

Table 8.2-1
Current and Projected Recycled Water Use
(AFY)

	2000	2005	2010	2015	2020	2025	2030
All Users	0	0	0	2,000	5,350	6,070	6,720

8.3 Wastewater Collection and Treatment in Mission Springs Water District

The MSWD operates two wastewater treatment plants serving a population of approximately 5,529 residential and 245 commercial connections (MSWD, 2005). The Horton Wastewater Treatment Plant (Horton WWTP), located on Verbena Drive about half mile south of Two Bunch Palms Trail, has a capacity of 2.5 million gallons per day (mgd). The Horton WWTP facility uses an extended aeration process for treatment and disposes of the undisinfected secondary wastewater in adjacent percolation/ evaporation ponds. The sludge generated from the treatment process is dried in on-site beds and then trucked offsite to proper disposal areas.

The Desert Crest Wastewater Treatment Plant, located about half mile southeast of the intersection of Dillion Road and Long Canyon Road, has a capacity of 0.18 mgd and serves a country club development and mobile home park. This treatment facility is operating with an average daily flow of 0.05 mgd. The facility operates similar to the Horton WWTP using an aeration basin for treatment and disposes of the undisinfected secondary wastewater by way of percolation/evaporation ponds. The sludge generated from the treatment process is dried in on-site beds and then trucked offsite to proper disposal areas. Table 8.3-1 shows the total population within the District and also the projected wastewater treated. It should be noted that the wastewater flow is 10% higher than the recycled water projection in years 2020 through 2030 due to the loss of some of the flow in the treatment process.

Table 8.3-1
Population and Wastewater Treatment

	2005	2010	2015	2020	2025	2030
Population	**23,000**	**35,000**	**48,000**	**54,000**	**61,000**	**67,000**
Wastewater Flow (AFY)	**1,383**	**3,246**	**5,083**	**5,940**	**6,747**	**7,465**

Sewer Systems

The existing wastewater conveyance system consists of a network of nearly 45 miles of sewer pipeline concentrated in the central portion of the study area where the majority of the populace and businesses reside. The Desert Crest Country Club community first received sewer service in the early 1960s with the outlying tracts established later in the early 1970s. Most of the MSWD sewer pipelines were constructed in the early 1970s and include lines along Ocotillo Road, Palm Drive, and Mission Lakes Boulevard. In the early 1980s, improvements to the pipeline system were added to tracts west of West Drive.

There is an ongoing program of assessment district formation to connect existing residences currently on septic systems to sewer collectors which have been constructed or are in the process of being constructed. Assessment District No. 11 has recently been completed, resulting in the addition of over 1,200 parcels to the sewer collection system.

8.4 Encouraging Recycled Water Use

Recent studies of water recycling opportunities within Southern California provide a context for promoting the development of water recycling plans. It is recognized that broad public acceptance of recycled water requires education and public involvement. As the availability of recycled water grows, the District will put focused communications efforts on public education.

8.5 Optimizing Recycled Water Use

The majority of recycled water is used for irrigating golf courses, parks, schools, business and communal landscaping. However, future recycled water use can increase by requiring dual piping in new developments, retrofitting existing landscaped areas and constructing recycled water pumping stations and transmission mains to reach areas far from the treatment plants. Gains in implementing some of these projects have been made throughout the county; however, the additional costs, large energy requirements, and facilities make such projects very expensive to pursue.

To optimize the use of recycled water, cost/benefit analysis must be conducted for each potential project. Once again, this brings about the discussion on technical and economic feasibility of a recycled water project requiring a relative comparison to alternative water supply options.

APPENDIX A

CALIFORNIA URBAN WATER MANAGEMENT PLANNING ACT OF 1983 AS AMENDED TO 2006

Established: AB 797, Klehs, 1983
Amended: AB 2661, Klehs, 1990
AB 11X, Filante, 1991
AB 1869, Speier, 1991
AB 892, Frazee, 1993
SB 1017, McCorquodale, 1994
AB 2853, Cortese, 1994
AB 1845, Cortese, 1995
SB 1011, Polanco, 1995
AB 2552, Bates, 2000
SB 553, Kelley, 2000
SB 610, Costa, 2001
AB 901, Daucher, 2001
SB 672, Machado, 2001
SB 1348, Brulte, 2002
SB 1384, Costa, 2002
SB 1518, Torlakson, 2002
AB 105, Wiggins, 2004
SB 318, Alpert, 2004

CALIFORNIA WATER CODE DIVISION 6 PART 2.6. URBAN WATER MANAGEMENT PLANNING

CHAPTER 1. GENERAL DECLARATION AND POLICY

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

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

(1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.

(2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.

(3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.

(4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years.

(5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.

(6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may

require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.
(7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.
(8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.
(9) The quality of source supplies can have a significant impact on water management strategies and supply reliability.

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

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

(a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.
(b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.
(c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

CHAPTER 2. DEFINITIONS

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

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

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

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

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

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

10616. "Public agency" means any board, commission, county, city and county, city, regional agency, district, or other public entity.

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

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

CHAPTER 3. URBAN WATER MANAGEMENT PLANS
Article 1. General Provisions

10620.

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

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

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

(d)

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

(2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.
(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.
(f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

10621.
(a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero.
(b) Every urban water supplier required to prepare a plan pursuant to this part shall notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.
(c) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

Article 2. Contents of Plans

10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.
10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:
(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.
(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a). If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:
(1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75

(commencing with Section 10750), or any other specific authorization for groundwater management.

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree.

For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

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

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

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

(1) An average water year.

(2) A single dry water year.

(3) Multiple dry water years.

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

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

(e)

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

(A) Single-family residential.

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

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

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

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

(A) Water survey programs for single-family residential and multifamily residential customers.
(B) Residential plumbing retrofit.
(C) System water audits, leak detection, and repair.
(D) Metering with commodity rates for all new connections and retrofit of existing connections.
(E) Large landscape conservation programs and incentives.
(F) High-efficiency washing machine rebate programs.
(G) Public information programs.
(H) School education programs.
(I) Conservation programs for commercial, industrial, and institutional accounts.
(J) Wholesale agency programs.
(K) Conservation pricing.
(L) Water conservation coordinator.
(M) Water waste prohibition.
(N) Residential ultra-low-flush toilet replacement programs.

(2) A schedule of implementation for all water demand management measures proposed or described in the plan.

(3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.

(4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.

(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:

(1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.
(2) Include a cost-benefit analysis, identifying total benefits and total costs.
(3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.
(4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

(h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

(i) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

(j) Urban water suppliers that are members of the California Urban Water Conservation Council and submit annual reports to that council in accordance with the ‘‘Memorandum of Understanding Regarding Urban Water Conservation in California,’’ dated September 1991, may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g).

(k) Urban water suppliers that rely upon a wholesale agency for a source of water, shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier’s plan that identifies and

quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c), including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

10631.5. The department shall take into consideration whether the urban water supplier is implementing or scheduled for implementation, the water demand management activities that the urban water supplier identified in its urban water management plan, pursuant to Section 10631, in evaluating applications for grants and loans made available pursuant to Section 79163. The urban water supplier may submit to the department copies of its annual reports and other relevant documents to assist the department in determining whether the urban water supplier is implementing or scheduling the implementation of water demand management activities.

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

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

(b) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

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

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

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

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

(g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and

expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

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

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

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

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

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

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

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

(e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

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

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

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

manner in which water quality affects water management strategies and supply reliability.

Article 2.5 Water Service Reliability

10635.

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

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

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

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

Article 3. Adoption and Implementation of Plans

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

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

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

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any

city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

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

10644.

(a) An urban water supplier shall file with the department and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be filed with the department and any city or county within which the supplier provides water supplies within 30 days after adoption.

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

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

CHAPTER 4. MISCELLANEOUS PROVISIONS

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

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

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

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

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

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

10654. An urban water supplier may recover in its rates the costs incurred in preparing its plan and implementing the reasonable water conservation measures included in the plan. Any best water management practice that is included in the plan that is identified in the "Memorandum of Understanding Regarding Urban Water Conservation in California" is deemed to be reasonable for the purposes of this section.

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

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

10657.

(a) The department shall take into consideration whether the urban water supplier has submitted an updated urban water management plan that is consistent with Section 10631, as amended by the act that adds this section, in determining whether the urban water

supplier is eligible for funds made available pursuant to any program administered by the department.

(b) This section shall remain in effect only until January 1, 2006, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2006, deletes or extends that date.

APPENDIX B

2005 URBAN WATER MANAGEMENT PLAN "REVIEW FOR COMPLETENESS" FORM

2005 Urban Water Management Plan "Review for Completeness" Form

For DWR Review Staff Use

Coordination with Appropriate Agencies		(Water Code § 10620 (d)(1)(2))
Yes		
X	Participated in area, regional, watershed or basin wide plan	Sec 1, p.1-2 Reference & Page Number
	Name of plan 2005 UWMP Lead Agency Mission Springs Water District	Sec 1, p.1-2 Reference & Page Number
	Describe the coordination of the plan preparation and anticipated benefits.	Sec 1, p.1-2 Reference & Page Number

Table 1
Coordination with Appropriate Agencies

Check at least one box on each row	Participated in developing the plan	Contacted for assistance	Was sent a copy of the Draft UWMP	Commented on Draft UWMP	Sent Notice of Public Hearing	Attended Public Hearing	Not Involved / No Information
MSWD	X	X	X	X	X	X	
City of Desert Hot Springs	X	X	X		X		
DWA		X	X		X		
CVWD		X	X		X		
MWD		X			X		
Riverside County			X		X		
City of Palm Springs			X		X		
General Public					X	X	

Describe resource maximization / import minimization plan		(Water Code §10620 (f))
X	Describe how water management tools / options maximize resources & minimize need to import water	Sec 2, p.2-8 Reference & Page Number Entire Sec 8 Reference & Page Number
Plan Updated in Years Ending in Five and Zero		**(Water Code § 10621(a))**
X	Date updated and adopted plan received 2/21/2006 (enter date)	Sec 1, p.1-2 Reference & Page Number

City and County Notification and Participation		(Water Code § 10621(b))
X	Notify any city or county within service area of UWMP of plan review & revision	Sec 1, p.1-2 Reference & Page Number
X	Consult and obtain comments from cities and counties within service area	Sec 1, p.1-2 Reference & Page Number

Service Area Information		Water Code § 10631 (a))
X	Include current and projected population	Sec 1, p.1-9 Reference & Page Number
X	Population projections were based on data from state, regional or local agency	Sec 1, p.1-9 Reference & Page Number

Table 2 Population - Current and Projected						
Population Scenario	**2005**	**2010**	**2015**	**2020**	**2025**	**2030 - opt**
High Growth	23,000	35,000	48,000	54,000	61,000	67,000

X	Describe climate characteristics that affect water management	Sec 1, p.1-4	Reference & Page Number
X	Describe other demographic factors affecting water management	Sec 1, p.1-4	Reference & Page Number

Table 3 Climate						
	January	**February**	**March**	**April**	**May**	**June**
Standard Average ETo						
Average Rainfall	1.12	1.01	0.6	0.17	0.05	0.07
Average Temperature	54	57	61	67	74	82

Table 3 (continued) Climate							
	July	**August**	**September**	**October**	**November**	**December**	**Annual**
Average ETo							**94.0**
Average Rainfall	0.2	0.3	0.35	0.24	0.47	0.94	**5.51**
Average Temperature	88	87	82	72	62	54	**70**

Water Sources		(Water Code § 10631 (b))	
X	Identify existing and planned water supply sources	Sec 4,4-6-10	Reference & Page Number
X	Provide current water supply quantities	Sec 2, p.2-13	Reference & Page Number
X	Provide planned water supply quantities	Sec 4,4-6-10	Reference & Page Number

Table 4
Current and Planned Water Supplies - AFY

Water Supply Sources	2005	2010	2015	2020	2025	2030 - opt
Water purchased from:						
Groundwater	9,194	14,400	17,800	17,150	19,130	21,180
Recycled	0	0	2,000	5,350	6,070	6,720
Total	**9,194**	**14,400**	**19,800**	**22,500**	**25,200**	**27,900**

If Groundwater identified as existing or planned source		(Water Code §10631 (b)(1-4))	
	Has management plan		Reference & Page Number
	Attached management plan (b)(1)		Reference & Page Number
X	Description of basin(s) (b)(2)	Sec 2, p.2-5	Reference & Page Number
	Basin is adjudicated		Reference & Page Number
	If adjudicated, attached order or decree (b)(2)		Reference & Page Number
	Quantified amount of legal pumping right (b)(2)		Reference & Page Number

Table 5
Groundwater Pumping Rights - AF Year

Basin Name	Pumping Right - AFY
Total	0

	DWR identified, or projected to be, in overdraft (b)(2)		Reference & Page Number
	Plan to eliminate overdraft (b)(2)	Sec 4, p.4-6	Reference & Page Number
X	Analysis of location, amount & sufficiency, last five years (b)(3)	Sec 2, p.2-13	Reference & Page Number
X	Analysis of location & amount projected, 20 years (b)(4)	Sec 2, p.2-13	Reference & Page Number

Table 6 Amount of Groundwater pumped - AFY					
Well No.	**2000**	**2001**	**2002**	**2003**	**2004**
Mission Creek Sub-Basin					
MW-22	1632.8	1684.09	1715.1	1776.16	1962.99
MW-24	718.62	985.94	610.9	875.77	1315.15
MW-27	378.88	449.41	498.23	483.78	501.45
MW-28	1210.21	1260.23	1368.26	1323.79	1506.9
MW-29	1575.24	1255.92	1664.05	1823.74	1950.23
MW-30	409.12	396.02	416.25	468.48	761.06
MW-31	1929.28	1810.98	1829.19	1815.28	2041.14
3405	321.3	119.8	436.1	470.4	731.3
3408	736.9	68.6	734.7	791.6	701.7
3409	867.1	1309.8	715.1	1012.8	956.6
3410	1251.1	925.9	1509.6	1175.5	1138.3
Total	11030.6	10266.7	11497.5	12017.3	13566.8
San Gorgonio River Sub-Basin Cabazon Unit					
MW-25	55.63	59.71	57.91	24.14	11.86
MW-25A	0	0	0	30.85	45.60
MW-26	103.48	76.8	107.3	113.78	99.24
MW-26A	0	2.03	0	0	0
Total	159.11	138.55	165.21	168.77	156.70
Total	11189.7	10405.2	11662.7	12186.1	13723.5
% of Total Water Supply	100%	100%	100%	100%	100%

Table 7 Amount of Groundwater projected to be pumped - AFY						
Basin Name(s)	**2005**	**2010**	**2015**	**2020**	**2025**	**2030 - opt**
Mission Creek Sub-Basin	9,050	14,160	19,380	16,780	20,720	20,720
SGPGWB - Cabazon Unit	150	240	320	370	410	460
Total	9,260	14,400	17,700	17,150	21,130	21,180
% of Total Water Supply	9260%	14,400	17,700	17,150	21,130	21,180
Projected Demand	9,200	14,400	19,800	22,500	25,200	27,900

Reliability of Supply (Water Code §10631 (c) (1-3)

X	Describes the reliability of the water supply and vulnerability to seasonal or climatic shortage	Sec4,p. 4-10	Reference & Page Number

Table 8
Supply Reliability - AF Year

		Multiple Dry Water Years			
Average / Normal Water Year	**Single Dry Water Year**	**Year 1**	**Year 2**	**Year 3**	**Year 4**
40,000	40,000	40,000	40,000	40,000	
40,000	40,000	40,000	40,000	40,000	
% of Normal	100.0%	100.0%	100.0%	100.0%	

Table 9
Basis of Water Year Data

Water Year Type	Year	Source name	Source name		
Average Water Year		MSWD		Sec 1, p. 1-4	Reference & Page Number
Single-Dry Water Year	1977	MWD of SC		Sec 4, p.4-6	Reference & Page Number
Multiple-Dry Water Years	1990-1992	MWD of SC		Sec 4, p.4-6	Reference & Page Number

Water Sources Not Available on a Consistent Basis (Water Code §10631 (c))

X		Describe the reliability of the water supply due to seasonal or climatic shortages	Sec 4, p.4-17	Reference & Page Number
X		Describe the vulnerability of the water supply to seasonal or climatic shortages	Sec 4, p.4-17	Reference & Page Number
	X	No unreliable sources	Sec 4, p.4-17	Reference & Page Number

Table 10
Factors resulting in inconsistency of supply

Name of supply	**Legal**	**Environ-mental**	**Water Quality**	**Climatic**

	Describe plans to supplement or replace inconsistent sources with alternative sources or DMMs		Reference & Page Number
	No inconsistent sources		Reference & Page Number

Transfer or Exchange Opportunities (Water Code §10631 (d))

X	Describe short term and long term exchange or transfer opportunities	Sec 4, p.4-23	Reference & Page Number

☐ No transfer opportunities _____ Reference & Page Number

Table11 Transfer and Exchange Opportunities - AF Year					
Transfer Agency	**Transfer or Exchange**	**Short term**	**Proposed Quantities**	**Long term**	**Proposed Quantities**
Total			0		0

Water Use Provisions **(Water Code §10631 (e)(1)(2))**

X	Quantify past water use by sector	Sec 5, p.5-1	Reference & Page Number
X	Quantify current water use by sector	Sec 5, p.5-1	Reference & Page Number
X	Project future water use by sector	Sec 5, p.5-1	Reference & Page Number

TABLE 12 - Past, Current and Projected Water Deliveries						
	2000		**2005**		**2010**	
	metered		metered		metered	
Water Use Sectors	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY
Single family	6,464	4,035	8,883	5,300	13,500	8,900
Multi-family	605	1,591	627	1,500	1,000	1,500
Commercial	308	719	284	800	400	1,400
Other	168	1,094	262	1,600	400	2,600
Total	7,545	7,439	10,056	9,200	15,300	14,400

TABLE12 (continued) - Past, Current and Projected Water Deliveries								
	2015		2020		2025		2030 - opt	
	metered		metered		metered		metered	
Water Use Sectors	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY
Single family	18,500	12,500	21,000	14,300	23,500	16,100	26,000	17,900
Multi-family	1,300	1,600	1,500	1,600	1,700	1,600	1,800	1,600
Commercial	600	2,000	700	2,300	750	2,600	800	2,900
Other	550	3,700	600	4,300	700	4,900	750	5,500
Total	20,950	19,800	23,800	22,500	26,650	25,200	29,350	27,900

☐ Identify and quantify sales to other agencies _____ Reference & Page Number

☒ No sales to other agencies Sec 5, p.5-1 Reference & Page Number

Table 13 Sales to Other Agencies - AF Year							
Water Distributed	**2000**	**2005**	**2010**	**2015**	**2020**	**2025**	**2030 - opt**
name of agency	0	0	0	0	0	0	0
name of agency							
name of agency							
Total	0	0	0	0	0	0	0

☐ Identify and quantify additional water uses _____ Reference & Page Number

Table 14 Additional Water Uses and Losses - AF Year							
Water Use	**2000**	**2005**	**2010**	**2015**	**2020**	**2025**	**2030 - opt**
Total	0	0	0	0	0	0	0

Any recycled water was included in table 12 should not be included in table 14.

Table 15 Total Water Use - AF Year							
Water Use	**2000**	**2005**	**2010**	**2015**	**2020**	**2025**	**2030 - opt**
Total of Tables 12, 13, 14	7,439	9,200	14,400	19,800	22,500	25,200	27,900

2005 Urban Water Management Plan "Review of DMMs for Completeness" Form **(Water Code §10631 (f)**

(Water Code §10631 (f) & (g), the 2005 Urban Water Management Plan "Review of DMMs for Completeness" Form is found on Sheet 2

Planned Water Supply Projects and Programs, including non-implemented DMMs **(Water Code §10631 (g))**

X	No non-implemented / not scheduled DMMs	Sec 6, p.6-1	Reference & Page Number
	Cost-Benefit includes economic and non-economic factors (environmental, social, health, customer impact, and technological factors)		Reference & Page Number
	Cost-Benefit analysis includes total benefits and total costs		Reference & Page Number
	Identifies funding available for Projects with higher per-unit-cost than DMMs		Reference & Page Number
X	Identifies Suppliers' legal authority to implement DMMs, efforts to implement the measures and efforts to identify cost share partners	Sec 6, p.6-1	Reference & Page Number

Table 16 Evaluation of unit cost of water resulting from non-implemented / non-scheduled DMMs and planned water supply project and programs	
Non-implemented & Not Scheduled DMM / Planned Water Supply Projects (Name)	**Per-AF Cost ($)**

Planned Water Supply Projects and Programs **(Water Code §10631 (h))**

	No future water supply projects or programs		
X	Detailed description of expected future supply projects & programs	Sec 4, p.4-17	Reference & Page Number
X	Timeline for each proposed project	Table 6-1	Reference & Page Number
	Quantification of each projects normal yield (AFY)		Reference & Page Number
	Quantification of each projects single dry-year yield (AFY)		Reference & Page Number
	Quantification of each projects multiple dry-year yield (AFY)		Reference & Page Number

Table 17 Future Water Supply Projects							
Project Name	Projected Start Date	Projected Completion Date	Normal-year AF to agency	Single-dry year yield AF	Multiple-Dry-Year 1 AF	Multiple-Dry-Year 2 AF	Multiple-Dry-Year 3 AF

Opportunities for development of desalinated water **(Water Code §10631 (i))**

[X] Describes opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply — Sec 4, p.4-23 Reference & Page Number

[ ] No opportunities for development of desalinated water — _____ Reference & Page Number

Table 18 Opportunities for desalinated water	
Sources of Water	Check if yes
Ocean Water (by Metropolitan)	X
Brackish ocean water	
Brackish groundwater	

District is a CUWCC signatory **(Water Code § 10631 (j))**

Urban suppliers that are California Urban Water Conservation Council members may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g). The supplier's CUWCC Best Management Practices Report should be attached to the UWMP.

[ ] Agency is a CUWCC member — _____ Reference & Page Number

[ ] 2003-04 annual updates are attached to plan — _____ Reference & Page Number

[ ] Both annual updates are considered completed by CUWCC website — _____ Reference & Page Number

If Supplier receives or projects receiving water from a wholesale supplier **(Water Code §10631 (k))**

Yes

[ ] Agency receives, or projects receiving, wholesale water — _____ Reference & Page Number

[X] Agency provided written demand projections to wholesaler, 20 years — Sec. 4, p. 4-10 Reference & Page Number

Table 19 Agency demand projections provided to wholesale suppliers - AFY					
Wholesaler	**2010**	**2015**	**2020**	**2025**	**2030 - opt**
Desert Water Agency	14,400	17,800	17,150	19,130	27,900

*Local Groundwater is used for demand projections

☐ Wholesaler provided written water availability projections, by source, to agency, 20 years _____ Reference & Page Number
(if agency served by more than one wholesaler, duplicate this table and provide the source availability for each wholesaler)

Table 20 Wholesaler identified & quantified the existing and planned sources of water- AFY					
Wholesaler sources	**2010**	**2015**	**2020**	**2025**	**2030 - opt**

☐ Reliability of wholesale supply provided in writing by wholesale agency _____ Reference & Page Number
(if agency served by more than one wholesaler, duplicate this table and provide the source availability for each wholesaler)

Table 21 Wholesale Supply Reliability - % of normal AFY					
	Multiple Dry Water Years				
Wholesaler sources	**Single Dry**	**Year 1**	**Year 2**	**Year 3**	**Year 4**
(source 1)					
(source 2)					
(source 3)					

Table 22 Factors resulting in inconsistency of wholesaler's supply				
Name of supply	**Legal**	**Environment**	**Water Quality**	**Climatic**

Water Shortage Contingency Plan Section		(Water Code § 10632)	
Stages of Action		**(Water Code § 10632 (a))**	
X	Provide stages of action	Sec 7, p.7-2	Reference & Page Number
X	Provide the water supply conditions for each stage	Sec 7, p.7-4	Reference & Page Number
X	Includes plan for 50 percent supply shortage	Sec 7, p.7-2	Reference & Page Number

Table 23
Water Supply Shortage Stages and Conditions
RATIONING STAGES

Water Supply Conditions	Water Supply Conditions	% Shortage
Stage 1	Voluntary Conservation - Normal Water Use	Up to 10%
Stage 2	Mandatory Compliance - Threatened Water Supply Shortage	10% - 15 %
Stage 3	Mandatory Conservation Measures - Water Shortage Emergency	15% - 50%

Three-Year Minimum Water Supply		(Water Code §10632 (b))	
X	Identifies driest 3-year period	Sec 7, p.7-4	Reference & Page Number
X	Minimum water supply available by source for the next three years	Sec 7, p.7-4	Reference & Page Number

Table 24
Three-Year Estimated Minimum Water Supply - AF Year

source**	2006 Base Year	2006 Dry Year	2007 Dry Year	2008 Dry Year
Local (Groundwater)	40,000	40,000	40,000	40,000
Recycled	0	0	0	0
Import	0	0	0	0
Total	40,000	40,000	40,000	40,000

*Note: If reporting after 2005, please change the column headers (Year 1, 2, & 3) to the appropriate years

Preparation for catastrophic water supply interruption		(Water Code §10632 (c))	
X	Provided catastrophic supply interruption plan	Sec 7, p.7-5	Reference & Page Number

Table 25 Preparation Actions for a Catastrophe	
Possible Catastrophe	**Check if Discussed**
Regional power outage	X
Earthquake	X

Prohibitions **(Water Code § 10632 (d))**

X List the mandatory prohibitions against specific water use practices during water shortages Sec 7, p.7-2,3 Reference & Page Number

Table 26 Mandatory Prohibitions	
Examples of Prohibitions	**Stage When Prohibition Becomes Mandatory**
Water shall not run off landscape areas into adjacent streets, sidewalks, tennis courts, or paved areas	Stage 1, 2, 3
All leaks must be repaired immediately	Stage 1, 2, 3
Wahsing of Sidewalks, ddriveways, parking areas, paved surfaces	Stage 1, 2, 3
Lawn and landscape watering shall occur during specific times	Stage 2, 3
Washing of motor vehicles, trailer, boats shall be done with hand held bucket efficient equipment	Stage 2, 3
Over-filling of swimming pools, spas, ornamental ponds, artificial lakes is prohibitied	Stage 2, 3
Irrigation of golf courses, parks, school grounds shall occur during specific times	Stage 2, 3
Use of water form fire hydrants shlal be limited to fire fighting and related activiies, construction activies	Stage 2, 3
Restaurant water service unless requested	Stage 2, 3
Operatin of non-recirculating ornamental fountain is porhibited	Stage 2, 3

Consumption Reduction Methods (Water Code § 10632 (e))

X List the consumption reduction methods the water supplier will use to reduce water use in the most restrictive stages with up to a 50% reduction.

Sec 7, p.7-4 Reference & Page Number

Table 27 Consumption Reduction Methods		
Consumption Reduction Methods	**Stage When Method Takes Effect**	**Projected Reduction (%)**
Voluntary Conservation - Normal Water Use	Stage 1	Up to 10%
Mandatory Compliance - Threatened Water Supply Shortage	Stage 2	10% to 15%
Mandatory Conservation Measures - Water Shortage Emergency	Stage 3	15% to 50%

Penalties (Water Code § 10632 (f))

X List excessive use penalties or charges for excessive use

Sec 7, p.7-6 Reference & Page Number

Table 28 Penalties and Charges	
Penalties or Charges	**Stage When Penalty Takes Effect**
Written notice	First Violation
$100.00 surcharge applied to customer's bill	Second Violation
$200.00 surcharge applied to customer's bill and flow restricting device installed	Third Violation
Discontinuance of service and $200.00 surcharge	Subsequent Violations

Revenue and Expenditure Impacts		(Water Code § 10632 (g))	
X	Describe how actions and conditions impact revenues	Sec 7, p.7-7	Reference & Page Number
X	Describe how actions and conditions impact expenditures	Sec 7, p.7-7	Reference & Page Number
X	Describe measures to overcome the revenue and expenditure impacts	Sec 7, p.7-7	Reference & Page Number

Table 29
Proposed measures to overcome revenue impacts

Names of measures	Check if Discussed
Rate adjustment	X
Water Replenishment Fees	X

Table 30
Proposed measures to overcome expenditure impacts

Names of measures	Check if Discussed
Monitor Projected Expenditures	X

Water Shortage Contingency Ordinance/Resolution		(Water Code § 10632 (h))	
X	Attach a copy of the draft water shortage contingency resolution or ordinance.	Sec 7, p.7-7	Reference & Page Number

Reduction Measuring Mechanism (Water Code § 10632 (i))

X Provided mechanisms for determining actual reductions — Sec 7, p.7-7 Reference & Page Number

Table 31 Water Use Monitoring Mechanisms	
Mechanisms for determining actual reductions	**Type data expected (pop-up?)**
Daily/Weekly/Monthly Reports	Estimated water savings
Drought Program Stages	Monitor

Recycling Plan Agency Coordination Water Code § 10633

X Describe the coordination of the recycling plan preparation information to the extent available — Sec 8, p.8-1 Reference & Page Number

Table 32 Participating agencies	
	participated
Water agencies	DWA/CVWD
Wastewater agencies	
Groundwater agencies	
Planning Agencies	Desert Hot Springs

Wastewater System Description (Water Code § 10633 (a))

X Describe the wastewater collection and treatment systems in the supplier's service area — Sec 8, p.8-3 Reference & Page Number

X Quantify the volume of wastewater collected and treated — Sec 8, p.8-3 Reference & Page Number

Table 33 Wastewater Collection and Treatment - AF Year							
Type of Wastewater	**2000**	**2005**	**2010**	**2015**	**2020**	**2025**	**2030 - opt**
Wastewater Flow (afy)	-	1,383	3,246	5,083	5,940	6,747	7,465
Projected Volume	-	-	-	2,000	5,350	6,070	6,720

Wastewater Disposal and Recycled Water Uses		(Water Code § 10633 (a - d))	
	Describes methods of wastewater disposal		Reference & Page Number
	Describe the current type, place and use of recycled water		Reference & Page Number
X	None	Sec 8	Reference & Page Number
	Describe and quantify potential uses of recycled water		Reference & Page Number

Table 34
Disposal of wastewater (non-recycled) AF Year

Method of disposal	Treatment Level	2005	2010	2015	2020	2025	2030 - opt
Percolated/Evaporated	Primary & Secondary	1,383	3,246	3,083	590	677	745
	Total	1,383	3,246	3,083	590	677	745

Table 35
Recycled Water Uses - Actual and Potential (AFY)

User type	Treatment Level	2005	2010	2015	2020	2025	2030 - opt
Golf Courses, Parks, Etc.	Tertiary	2,000	3,000	4,000	5,350	6,070	6,720
	Total	2,000	3,000	4,000	5,350	6,070	6,720

X	Determination of technical and economic feasibility of serving the potential uses	Sec 8, p.8-1	Reference & Page Number

Projected Uses of Recycled Water **(Water Code § 10633 (e))**

[X] Projected use of recycled water, 20 years — Sec 8, p.8-2 Reference & Page Number

Table 36 Projected Future Use of Recycled Water in Service Area - AF Year							
	2000	2005	2010	2015	2020	2025	2030
Projected use of Recycled Water	0	0	0	2,000	5,350	6,070	6,720

[ ] Compare UWMP 2000 projections with UWMP 2005 actual (§ 10633 (e)) — Reference & Page Number

[X] None — Sec 8, p.8-2 Reference & Page Number

Table 37 Recycled Water Uses - 2000 Projection compared with 2005 actual - AFY		
User type	2000 Projection for 2005	2005 actual use
Agriculture		
Landscape		
Wildlife Habitat		
Wetlands		
Industrial		
Groundwater Recharge		
Other (user type)		
Other (user type)		
Total	0	0

Plan to Optimize Use of Recycled Water		(Water Code § 10633 (f))	
X	Describe actions that might be taken to encourage recycled water uses	Sec 8, p.8-3	Reference & Page Number
X	Describe projected results of these actions in terms of acre-feet of recycled water used per year	Sec 8, p.8-3	Reference & Page Number

Table 38
Methods to Encourage Recycled Water Use

Actions	AF of use projected to result from this action				
	2010	2015	2020	2025	2030 - opt
Financial incentives					
Education and Public Involvement					
Total	0	0	0	0	0

X	Provide a recycled water use optimization plan which includes actions to facilitate the use of recycled water (dual distribution systems, promote recirculating uses)	Sec 8, p.8-3	Reference & Page Number

Water quality impacts on availability of supply		(Water Code §10634)	
X	Discusses water quality impacts (by source) upon water management strategies and supply reliability	Sec 3, p.3-5	Reference & Page Number
	No water quality impacts projected		Reference & Page Number

Table 39
Current & projected water supply changes due to water quality - percentage

water source	2005	2010	2015	2020	2025	2030 - opt

Supply and Demand Comparison to 20 Years (Water Code § 10635 (a))

X Compare the projected normal water supply to projected normal water use over the next 20 years, in 5-year increments.

Sec 4, p.4-10 Reference & Page Number

Table 40 Projected Normal Water Supply - AF Year					
(from table 4)	**2010**	**2015**	**2020**	**2025**	**2030 - opt**
Supply	40,000	42,000	45,350	46,070	46,720
% of year 2005	100%	100%	100%	100%	100%

Table 41 Projected Normal Water Demand - AF Year					
(from table 15)	**2010**	**2015**	**2020**	**2025**	**2030 - opt**
Demand	14,400	19,800	22,500	25,200	27,900
% of year 2005	156.6%	215.4%	244.7%	274.1%	303.5%

Table 42 Projected Supply and Demand Comparison - AF Year					
	2010	**2015**	**2020**	**2025**	**2030 - opt**
Supply totals	40,000	42,000	45,350	46,070	46,720
Demand totals	14,400	19,800	22,500	25,200	27,900
Difference	25,600	22,200	22,850	20,870	18,820
Difference as % of Supply	64%	53%	50%	45%	40%
Difference as % of Demand	178%	112%	102%	83%	67%

Supply and Demand Comparison: Single-dry Year Scenario **(Water Code § 10635 (a))**

X Compare the projected single-dry year water supply to projected single-dry year water use over the next 20 years, in 5-year increments. Sec 4, p.4-11 Reference & Page Number

Table 43 Projected single dry year Water Supply - AF Year					
	2010	2015	2020	2025	2030 - opt
Supply	40,000	42,000	45,350	46,070	46,720
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

Table 44 Projected single dry year Water Demand - AF Year					
	2010	2015	2020	2025	2030 - opt
Demand	14,540	20,080	22,940	25,690	28,450
% of projected normal	101.0%	101.4%	102.0%	101.9%	102.0%

Table 45 Projected single dry year Supply and Demand Comparison - AF Year					
	2010	2015	2020	2025	2030 - opt
Supply totals	40,000	42,000	45,350	46,070	46,720
Demand totals	14,540	20,080	22,940	25,690	28,450
Difference	25,460	21,920	22,410	20,380	18,270
Difference as % of Supply	63.7%	52.2%	49.4%	44.2%	39.1%
Difference as % of Demand	175.1%	109.2%	97.7%	79.3%	64.2%

Supply and Demand Comparison: Multiple-dry Year Scenario (Water Code § 10635 (a))

[X] Project a multiple-dry year period (as identified in Table 9) occurring between 2006-2010 and compare projected supply and demand during those years

Sec 4, p.4-12 Reference & Page Number

Table 46 Projected supply during multiple dry year period ending in 2010 - AF Year					
	2006	2007	2008	2009	2010
Supply	40,000	40,000	40,000	40,000	40,000
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

Table 47 Projected demand multiple dry year period ending in 2010 - AFY					
	2006	2007	2008	2009	2010
Demand	10,240	11,280	12,440	13,490	14,540
% of projected normal	100.0%	100.0%	101.0%	101.0%	101.0%

Table 48 Projected Supply and Demand Comparison during multiple dry year period ending in 2010- AF Year					
	2006	2007	2008	2009	2010
Supply totals	40,000	40,000	40,000	40,000	40,000
Demand totals	10,240	11,280	12,440	13,490	14,540
Difference	29,760	28,720	27,560	26,510	25,460
Difference as % of Supply	74.4%	71.8%	68.9%	66.3%	63.7%
Difference as % of Demand	290.6%	254.6%	221.5%	196.5%	175.1%

[X] Project a multiple-dry year period (as identified in Table 9) occurring between 2011-2015 and compare projected supply and demand during those years

Sec 4, p.4-13 Reference & Page Number

Table 49 Projected supply during multiple dry year period ending in 2015 - AF Year					
	2011	2012	2013	2014	2015
Supply	42,000	40,000	40,000	40,000	42,000
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

Table 50 Projected demand multiple dry year period ending in 2015 - AFY					
	2011	2012	2013	2014	2015
Demand	15,480	16,560	17,820	18,910	20,080
% of projected normal	100.0%	100.0%	101.0%	101.0%	101.4%

Table 51 Projected Supply and Demand Comparison during multiple dry year period ending in 2015- AF Year					
	2011	2012	2013	2014	2015
Supply totals	42,000	40,000	40,000	40,000	42,000
Demand totals	15,480	16,560	17,820	18,910	20,080
Difference	26,520	23,440	22,180	21,090	21,920
Difference as % of Supply	63.1%	58.6%	55.5%	52.7%	52.2%
Difference as % of Demand	171.3%	141.5%	124.5%	111.5%	109.2%

[X] Project a multiple-dry year period (as identified in Table 9) occurring between 2016-2020 and compare projected supply and demand during those years

Sec 4, p.4-14 Reference & Page Number

Table 52 Projected supply during multiple dry year period ending in 2020 - AF Year					
	2016	2017	2018	2019	2020
Supply	42,670	43,340	44,010	44,680	45,350
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

Table 53 Projected demand multiple dry year period ending in 2020 - AFY					
	2016	2017	2018	2019	2020
Demand	20,340	20,880	21,790	22,270	22,940
% of projected normal	100.0%	100.0%	101.7%	101.4%	102.0%

Table 54 Projected Supply and Demand Comparison during multiple dry year period ending in 2020- AF Year					
	2016	**2017**	**2018**	**2019**	**2020**
Supply totals	42,670	43,340	44,010	44,680	45,350
Demand totals	20,340	20,880	21,790	22,270	22,940
Difference	22,330	22,460	22,220	22,410	22,410
Difference as % of Supply	52.3%	51.8%	50.5%	50.2%	49.4%
Difference as % of Demand	109.8%	107.6%	102.0%	100.6%	97.7%

[X] Project a multiple-dry year period (as identified in Table 9) occurring between 2021-2025 and compare projected supply and demand during those years

Sec 4, p.4-15 Reference & Page Number

Table 55 Projected supply during multiple dry year period ending in 2025 - AF Year					
	2021	**2022**	**2023**	**2024**	**2025**
Supply	45,490	45,640	45,780	45,930	46,070
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

Table 56 Projected demand multiple dry year period ending in 2025 - AFY					
	2021	**2022**	**2023**	**2024**	**2025**
Demand	23,040	23,580	24,590	25,020	25,690
% of projected normal	100.0%	100.0%	101.9%	103.7%	101.9%

Table 57 Projected Supply and Demand Comparison during multiple dry year period ending in 2025- AF Year					
	2021	**2022**	**2023**	**2024**	**2025**
Supply totals	45,490	45,640	45,780	45,930	46,070
Demand totals	23,040	23,580	24,590	25,020	25,690
Difference	22,450	22,060	21,190	20,910	20,380
Difference as % of Supply	49.4%	48.3%	46.3%	45.5%	44.2%
Difference as % of Demand	97.4%	93.6%	86.2%	83.6%	79.3%

Provision of Water Service Reliability section to cities/counties within service area		(Water Code § 10635(b))	
X	Provided Water Service Reliability section of UWMP to cities and counties within which it provides water supplies within 60 days of UWMP submission to DWR	Sec 1, p.1-2	Reference & Page Number

Does the Plan Include Public Participation and Plan Adoption		(Water Code § 10642)	
X	Attach a copy of adoption resolution	Sec 1, p.1-2	Reference & Page Number
X	Encourage involvement of social, cultural & economic community groups	Sec 1, p.1-2	Reference & Page Number
X	Plan available for public inspection	Sec 1, p.1-2	Reference & Page Number
X	Provide proof of public hearing	Sec 1, p.1-2	Reference & Page Number
X	Provided meeting notice to local governments	Sec 1, p.1-2	Reference & Page Number

Review of implementation of 2000 UWMP		(Water Code § 10643)	
X	Reviewed implementation plan and schedule of 2000 UWMP	throughout	Reference & Page Number
X	Implemented in accordance with the schedule set forth in plan	throughout	Reference & Page Number
	2000 UWMP not required		Reference & Page Number

Provision of 2005 UWMP to local governments		(Water Code § 10644 (a))	
X	Provide 2005 UWMP to DWR, and cities and counties within 30 days of adoption	Sec 1, p.1-2	Reference & Page Number

Does the plan or correspondence accompanying it show where it is available for public review		(Water Code § 10645)	
X	Does UWMP or correspondence accompanying it show where it is available for public review	Back Cover	Reference & Page Number

APPENDIX C

2005 URBAN WATER MANAGEMENT PLAN "REVIEW FOR DMM COMPLETENESS" FORM

2005 Urban Water Management Plan "Review of DMMs for Completeness" Form

For DWR Review Staff Use

Water Survey Programs for Single-Family and Multi-Family Residential Customers (10631 f(1)(a))

Implementation **(Section 10631 (f))**

[X] Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — Sec 6, p.6-3 — Reference & Page Number

Year program started _____ or Year program scheduled to start 2010

[X] Describes steps necessary to implement measure — Sec 6, p.6-3 — Reference & Page Number

Table A1					
Actual	2001	2002	2003	2004	2005
# of kits					
cost of kits					
actual water savings - AFY					
Estimated Staff time					

Table A2	
Planned Timeline	Implmentation Action
First Quarter 2010	Recruit 25 high water use customers for pilot program and provide free audit. Based on audit results, develop self-audit kits w/ interior & exterior water use component.
Second Quarter 2010	Make adjustments indicated by pilot program. Produce self-audit kits for general distribution. Publicize availability of kits.
Third Quarter 2010	Distribute kits and follow up. Determine benefit of expanding program.
Total Cost	$5500 500 = 100 kits @ $5 each $5,000 = Estimated staff time

[X] Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3)) — Sec 6, p.6-3 — Reference & Page Number

[X] Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4)) — Sec 6, p.6-3 — Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

- [ ] Evaluate legal authority (10631 (g)(4))
- [ ] Evaluate economic and non-economic factors (10631 (g)(1))
- [ ] Evaluate environmental, social, health factors (10631 (g)(1))
- [ ] Evaluate customer impact & technological factors (10631 (g)(1))

Table A3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water ($ per AF)	
Water Savings (AFY)	

- [X] Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- [X] Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

- [ ] If another Agency is implementing (10631 (g)(4))

Agency Name

Residential Plumbing Retrofit (10631 (f)(1)(b))

Implementation **(Section 10631 (f) & (h))**

- [X] Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — Sec 6, p.6-4 Reference & Page Number

Year program started _____ or Year program scheduled to start 2009

- [X] Describes steps necessary to implement measure — Sec 6, p.6-4 Reference & Page Number

# of pre-1992 SF accounts _____ # of pre-1992 MF accounts _____

Table B1					
Actual	1992-2001	2002	2003	2004	2005/2006
# of Retrofits					2100
expenditures ($)					$5,000
water savings (gallons)					10,634,400

Table B2					
Planned	2006/2007	2007/2008	2008/2009	2009/2010	2010
# of Retrofits	2100	2100	2100	2100	2100
expenditures ($)	$5,000	$5,000	$5,000	$5,000	$5,000
water savings (gallons)	10,634,400	10,634,400	10,634,400	10,634,400	10,634,400

[X] Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3)) — Sec 6, p.6-4 Reference & Page Number

[X] Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4)) — Sec 6, p.6-5 Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

[ ] Evaluate legal authority (10631 (g)(4))

[ ] Evaluate economic and non-economic factors (10631 (g)(1))

[ ] Evaluate environmental, social, health factors (10631 (g)(1))

[ ] Evaluate customer impact & technological factors (10631 (g)(1))

Table B3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

[ ] Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))

[ ] Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

[ ] If another Agency is implementing (10631 (g)(4))

Agency Name

System Water Audits, Leak Detection and Repair (10631 (f)(1)(c))

Implementation **(Section 10631 (f) & (h))**

[X] Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — Sec 6, p.6-5 Reference & Page Number

Year program started _____ or Year program scheduled to start _____

[X] Describes steps necessary to implement measure — Sec 6, p.6-5 Reference & Page Number

Year of last complete audit _____ Year of next complete audit Accomplished through various District activities

Table C1					
Actual	2001	2002	2003	2004	2005
% of unaccounted water					
miles of mains surveyed					
miles of lines repaired					
actual expenditures - $					
actual water savings - AFY					

Table C2					
Planned	2006	2007	2008	2009	2010
% of unaccounted water					
miles of mains surveyed					
miles of lines repaired					
projected expenditures - $					
projected water savings - AFY					

[X] Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3)) — Sec 6, p.6-6 Reference & Page Number

[X] Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4)) — Sec 6, p.6-6 Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

- [ ] Evaluate legal authority (10631 (g)(4))
- [ ] Evaluate economic and non-economic factors (10631 (g)(1))
- [ ] Evaluate environmental, social, health factors (10631 (g)(1))
- [ ] Evaluate customer impact & technological factors (10631 (g)(1))

Table C3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- [ ] Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- [ ] Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

- [ ] If another Agency is implementing (10631 (g)(4))

Agency Name

Metering with Commodity Rates (10631 (f)(1)(d))

Implementation **(Section 10631 (f) & (h))**

- [X] Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — Sec 6, p.6-6 Reference & Page Number

Year program started 1953 or Year program scheduled to start _____

- [X] Describes steps necessary to implement measure — Sec 6, p.6-6 Reference & Page Number

Total number of accounts _____ # of accounts w/o commodity rates _____

Table D1					
Actual	2001	2002	2003	2004	2005
# of unmetered accounts					
# of retrofit meters installed					
# of accounts w/o commodity rates					
actual expenditures - $					
actual water savings - AFY					

Table D2					
Planned	2006	2007	2008	2009	2010
# of unmetered accounts					
# of retrofit meters installed					
# of accounts w/o commodity rates					
projected expenditures - $					
projected water savings - AFY					

[X] Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3)) — Sec 6, p.6-6 Reference & Page Number

[X] Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4)) — Sec 6, p.6-6 Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

[ ] Evaluate legal authority (10631 (g)(4))

[ ] Evaluate economic and non-economic factors (10631 (g)(1))

[ ] Evaluate environmental, social, health factors (10631 (g)(1))

[ ] Evaluate customer impact & technological factors (10631 (g)(1))

Table D3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

[ ] Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))

[ ] Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

[ ] If another Agency is implementing (10631 (g)(4))

Agency Name

Large Landscape Conservation Programs and Incentives (10631 (f)(1)(e))

Implementation **(Section 10631 (f) & (h))**

[X] Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — Sec 6, p.6-7 Reference & Page Number

Year program started 2004 or Year program scheduled to start _____

[X] Describes steps necessary to implement measure — Sec 6, p.6-7 Reference & Page Number

# of landscape accounts _____ # of landscape accounts with budgets _____

# of CII accounts _____ # of CII accounts w/ landscape surveys (CII mixed use meters) _____

Table E1

Implementation Action	2001	2002	2003	2004	2005
Tract developments plan check					$1000/tract x 5 tracts/yr x 6 yrs = $30,000
Infill Plan check					$300/APN x 100/yr x 6 yrs = $180,000
New SFR inspections					$60/APN x 2200 new units = $132,000
Staff time to manage program					$9000/yr x 6 yrs= $54,000
Total					$396,000

Table E2					
Implementation Action	2006	2007	2008	2009	2010
Tract developments plan check	$1000/tract x 5 tracts/yr x 6 yrs = $30,000	$1000/tract x 5 tracts/yr x 6 yrs = $30,000	$1000/tract x 5 tracts/yr x 6 yrs = $30,000	$1000/tract x 5 tracts/yr x 6 yrs = $30,000	$1000/tract x 5 tracts/yr x 6 yrs = $30,000
Infill Plan check	$300/APN x 100/yr x 6 yrs = $180,000	$300/APN x 100/yr x 6 yrs = $180,000	$300/APN x 100/yr x 6 yrs = $180,000	$300/APN x 100/yr x 6 yrs = $180,000	$300/APN x 100/yr x 6 yrs = $180,000
New SFR inspections	$60/APN x 2200 new units = $132,000	$60/APN x 2200 new units = $132,000	$60/APN x 2200 new units = $132,000	$60/APN x 2200 new units = $132,000	$60/APN x 2200 new units = $132,000
Staff time to manage program	$9000/yr x 6 yrs= $54,000	$9000/yr x 6 yrs= $54,000	$9000/yr x 6 yrs= $54,000	$9000/yr x 6 yrs= $54,000	$9000/yr x 6 yrs= $54,000
Total	$396,000	$396,000	$396,000	$396,000	$396,000

X	Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3))	Sec 6, p.6-7-12	Reference & Page Number
X	Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))	Sec 6, p.6-7-12	Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

- [ ] Evaluate legal authority (10631 (g)(4))
- [ ] Evaluate economic and non-economic factors (10631 (g)(1))
- [ ] Evaluate environmental, social, health factors (10631 (g)(1))
- [ ] Evaluate customer impact & technological factors (10631 (g)(1))

Table E3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- [ ] Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- [ ] Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

- [ ] If another Agency is implementing (10631 (g)(4))

Agency Name

High-Efficiency Washing Machine Rebate Programs (10631 (f)(1)(f))

Implementation **(Section 10631 (f) & (h))**

- [x] Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — Sec 6, p.6-12 — Reference & Page Number

Year program started _____ or Year program scheduled to start First qtr. 2008

Other agencies offer rebates _____ Cost-effectiveness calcs attached _____

- [ ] Describes steps necessary to implement measure _____ Reference & Page Number

Table F1					
Actual	2001	2002	2003	2004	2005
$ per rebate					
# of rebates paid					
actual expenditures - $					
actual water savings - AFY					

Table F2					
Planned	2006	2007	2008	2009	2010
$ per rebate					
# of rebates paid					
projected expenditures - $					
projected water savings - AFY					

[X] Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3)) — Sec 6, p.6-12 Reference & Page Number

[X] Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4)) — Sec 6, p.6-12 Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

[ ] Evaluate legal authority (10631 (g)(4))

[ ] Evaluate economic and non-economic factors (10631 (g)(1))

[ ] Evaluate environmental, social, health factors (10631 (g)(1))

[ ] Evaluate customer impact & technological factors (10631 (g)(1))

Table F3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

[ ] Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))

[ ] Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

[ ] If another Agency is implementing (10631 (g)(4))

Agency Name

Public Information Programs (10631 (f)(1)(g))

Implementation **(Section 10631 (f))**

[X] Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — Sec 6, p.6-13 Reference & Page Number

Year program started _____ or Year program scheduled to start _____

[X] Describes steps necessary to implement measure — Sec 6, p.6-13 Reference & Page Number

Table G1					
Actual	2001	2002	2003	2004	2005
a. paid advertising					
b. Public Service Announcement	X	X	X	X	X
c. Bill Inserts / Newsletters / Brochures	X	X	X	X	X
d. Bill showing water usage in comparison to previous year's usage	X	X	X	X	X
e. Demonstration Gardens	X	X	X	X	X
f. Special Events, Media Events	X	X	X	X	X
g. Speaker's Bureau	X	X	X	X	X
h. Program to coordinate with other government agencies, industry and public interest groups and media, website	X	X	X	X	X
actual expenditures - $	$11,035	$18,036	$10,555	$21,435	$12,335

Table G2					
Planned	2006	2007	2008	2009	2010
a. paid advertising					
b. Public Service Announcement	X	X	X	X	X
c. Bill Inserts / Newsletters / Brochures	X	X	X	X	X
d. Bill showing water usage in comparison to previous year's usage	X	X	X	X	X
e. Demonstration Gardens	X	X	X	X	X
f. Special Events, Media Events	X	X	X	X	X
g. Speaker's Bureau	X	X	X	X	X
h. Program to coordinate with other government agencies, industry and public interest groups and media, website	X	X	X	X	X
Projected expenditures - $					

[X] Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3)) — Sec 6, p.6-13 Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

[ ] Evaluate legal authority (10631 (g)(4))

[ ] Evaluate economic and non-economic factors (10631 (g)(1))

[ ] Evaluate environmental, social, health factors (10631 (g)(1))

[ ] Evaluate customer impact & technological factors (10631 (g)(1))

Table G3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

[ ] Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))

[ ] Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

[ ] If another Agency is implementing (10631 (g)(4))

Agency Name

School Education Programs (10631 (f)(1)(h))

Implementation **(Section 10631 (f) & (h))**

[X] Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — Sec 6, p.6-15 Reference & Page Number

Year program started _____ or Year program scheduled to start _____

[X] Describes steps necessary to implement measure — Sec 6, p.6-16 Reference & Page Number

Table H1		No. of class presentations - Groundwater Guardian Program				
Actual	# of classes	2001	2002	2003	2004	2005
Grades 4-6	12	2	8	8	11	11
Grades 7-8	N/A	N/A	4	6	N/A	N/A
High School	11	9	9	9	183	183
Students reached (total)		604	704	820	850	1,410
Teacher workshop		7	13	10	16	25
Total Cost ($)		$10,000	$10,000	$10,000	$15,000	$15,000

Table H2		No. of class presentations - Groundwater Guardian Program				
Actual	# of classes	2006	2007	2008	2009	2010
Grades 4-6	12	11	11	11	11	11
Grades 7-8	N/A	N/A	N/A	N/A	N/A	N/A
High School	11	183	183	183	183	183
Students reached (total)		1,410	1,410	1,410	1,410	1,410
Teacher workshop		25	25	25	25	25
Total Cost ($)		$15,000	$15,000	$15,000	$15,000	$15,000

		Natural Science Education Connection Program					
Activity	2004	2005	2006	2007	2008	2009	2010
# of Classes	16	16	16	16	16	16	16
# of Students Reached	1600	1700	1700	1700	1700	1700	1700
# of Presentations	176	580	580	580	580	580	580
Total Cost ($)	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000

[X] Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3)) — Sec 6, p.6-15 — Reference & Page Number

[ ] Did your agency's material meet state education framework requirements? _____ Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

[ ] Evaluate legal authority (10631 (g)(4))

[ ] Evaluate economic and non-economic factors (10631 (g)(1))

[ ] Evaluate environmental, social, health factors (10631 (g)(1))

[ ] Evaluate customer impact & technological factors (10631 (g)(1))

Table H3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))

☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

☐ If another Agency is implementing (10631 (g)(4))

Agency Name

Conservation Programs for Commercial, Industrial and Institutional (10631 (f)(1)(i))

Implementation **(Section 10631 (f) & (h))**

☒ Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) Sec 6, p.6-16 Reference & Page Number

Year program started _____ or Year program scheduled to start First qtr. 2008

☒ Describes steps necessary to implement measure Sec 6, p.6-17 Reference & Page Number

# of Commercial accounts _____ # of Industrial accounts _____ # of Institutional accounts _____

Table I1					
Actual	2001	2002	2003	2004	2005
# of surveys completed					
Were incentives provided?					
# of follow-up visits					
actual expenditures - $					
actual water savings - AFY					

Table I2					
Planned	2006	2007	2008	2009	2010
# of surveys completed					
Were incentives provided?					
# of follow-up visits					
projected expenditures - $					
projected water savings - AFY					

X	Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3))	Sec 6, p.6-17	Reference & Page Number
	Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))		Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

- ☐ Evaluate legal authority (10631 (g)(4))
- ☐ Evaluate economic and non-economic factors (10631 (g)(1))
- ☐ Evaluate environmental, social, health factors (10631 (g)(1))
- ☐ Evaluate customer impact & technological factors (10631 (g)(1))

Table I3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- ☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

- ☐ If another Agency is implementing (10631 (g)(4))

Agency Name

Conservation Programs for Commercial, Industrial & Institutional - Toilet Replacement (10631 (f)(1)(i))

(this data is part of the Council Annual Report but is not specifically requested in the UWMP Act) change

Implementation **(Section 10631 (f) & (h))**

	Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2))		Reference & Page Number
	Year program started _____ or Year program scheduled to start _____		
	Describes steps necessary to implement measure		Reference & Page Number

Table I4					
Actual	2001	2002	2003	2004	2005
# of commercial replacements					
# of industrial replacements					
# of institutional replacements					
actual expenditures - $					
actual water savings - AFY					

Table I5					
Planned	2006	2007	2008	2009	2010
# of commercial replacements					
# of industrial replacements					
# of institutional replacements					
projected expenditures - $					
projected water savings - AFY					

☐ Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3)) _____ Reference & Page Number

☐ Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4)) _____ Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

☐ Evaluate legal authority (10631 (g)(4))

☐ Evaluate economic and non-economic factors (10631 (g)(1))

☐ Evaluate environmental, social, health factors (10631 (g)(1))

☐ Evaluate customer impact & technological factors (10631 (g)(1))

Table I6 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))

☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

☐ If another Agency is implementing (10631 (g)(4))

Agency Name

Wholesale Agency Programs (10631 (f)(1)(j))

☒ Not a wholesale agency - Desert Water Agency is District's Wholesale

Implementation **(Section 10631 (f) & (h))**

☐ Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) _____ Reference & Page Number

Year program started _____ or Year program scheduled to start _____

# of suppliers you serve _____

☐ Describes steps necessary to implement measure _____ Reference & Page Number

Table J1	Number of agencies assisted				
program activities	2001	2002	2003	2004	2005
Water Surveys					
Residential Retrofit					
System Audits					
Metering-Commodity Rates					
Landscape Programs					
Washing Machines					
Public Information					
School Education					
CII WC					
CII ULF					
Water Waste					
Pricing					
WC Coordinator					
Water Waste					
UFLT Replacement					
actual expenditures - $					

Table J2	Number of agencies to be assisted				
program activities	2006	2007	2008	2009	2010
Water Surveys					
Residential Retrofit					
System Audits					
Metering-Commodity Rates					
Landscape Programs					
Washing Machines					
Public Information					
School Education					
CII WC					
CII ULF					
Water Waste					
Pricing					
WC Coordinator					
Water Waste					
UFLT Replacement					
projected expenditures - $					

☐ Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3)) _____ Reference & Page Number

☐ Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4)) _____ Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

☐ Evaluate legal authority (10631 (g)(4))

☐ Evaluate economic and non-economic factors (10631 (g)(1))

☐ Evaluate environmental, social, health factors (10631 (g)(1))

☐ Evaluate customer impact & technological factors (10631 (g)(1))

Table J3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))

☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

☒ If another Agency is implementing (10631 (g)(4))

Agency Name
Desert Water Agency

Conservation Pricing (10631 (f)(1)(k))

Implementation **(Section 10631 (f) & (h))**

☒ Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — Sec 6, p.6-17 Reference & Page Number

Year program started 1985 or Year program scheduled to start

☐ Agency provides sewer service

☒ Describes steps necessary to implement measure — Sec 6, p.6-17 Reference & Page Number

Table K1			
RETAILERS			
Residential			
Water Rate Structure	pop-up list	Sewer Rate Structure	pop-up list
Year rate effective		Year rate effective	
Commercial			
Water Rate Structure	pop-up list	Sewer Rate Structure	pop-up list
Year rate effective		Year rate effective	
Industrial			
Water Rate Structure	pop-up list	Sewer Rate Structure	pop-up list
Year rate effective		Year rate effective	
Institutional/Government			
Water Rate Structure	pop-up list	Sewer Rate Structure	pop-up list
Year rate effective		Year rate effective	
Irrigation			
Water Rate Structure	pop-up list		
Year rate effective			
Other			
Water Rate Structure	pop-up list	Sewer Rate Structure	pop-up list
Year rate effective		Year rate effective	

Table K2		
WHOLESALERS		
Water Rate Structure	pop-up list	
Year rate effective		

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

- [ ] Evaluate legal authority (10631 (g)(4))
- [ ] Evaluate economic and non-economic factors (10631 (g)(1))
- [ ] Evaluate environmental, social, health factors (10631 (g)(1))
- [ ] Evaluate customer impact & technological factors (10631 (g)(1))

Table K3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- [X] Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- [X] Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

- [ ] If another Agency is implementing (10631 (g)(4))

Agency Name

Water Conservation Coordinator (10631 (f)(1)(l))

Implementation **(Section 10631 (f) & (h))**

- [X] Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — Sec 6, p.6-18 Reference & Page Number

  Year program started _____ or Year program scheduled to start _____

- [X] Describes steps necessary to implement measure — Sec 6, p.6-19 Reference & Page Number

Table L1						
Actual	Percentage	2001	2002	2003	2004	2005
Director of Finance - Percentage 5% - Cost $7,035	5%	1	1	1	1	1
Director of Operations - Percentage 10% - Cost $12,200	10%	1	1	1	1	1
Director of Administration - Percentage 20% - Cost $26,800	20%	1	1	1	1	1
actual expenditures - $		$46,035	$46,035	$46,035	$46,035	$46,035

Table L2						
Planned	Percentage	2006	2007	2008	2009	2010
Director of Finance - Percentage 5% - Cost $7,035	5%	1	1	1	1	1
Director of Operations - Percentage 10% - Cost $12,200	10%	1	1	1	1	1
Director of Administration - Percentage 20% - Cost $26,800	20%	1	1	1	1	1
projected expenditures - $		$46,035	$46,035	$46,035	$46,035	$46,035

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

- ☐ Evaluate legal authority (10631 (g)(4))
- ☐ Evaluate economic and non-economic factors (10631 (g)(1))
- ☐ Evaluate environmental, social, health factors (10631 (g)(1))
- ☐ Evaluate customer impact & technological factors (10631 (g)(1))

Table L3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))

☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

☐ If another Agency is implementing (10631 (g)(4))

Agency Name

Waste Water Prohibition (10631 (f)(1)(m))

Implementation **(Section 10631 (f) & (h))**

☒ Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) Sec 6, p.6-19 Reference & Page Number

Year program started 1993 or Year program scheduled to start

☒ Describes steps necessary to implement measure Sec 6, p.6-19 Reference & Page Number

Table M1					
Actual	2001	2002	2003	2004	2005
# of on-site visits					24
Cost per visit					$80
Total Cost - $					$1,920

Table M2					
Planned	2006	2007	2008	2009	2010
# of on-site visits	36	48	60	60	60
Cost per visit	$80	$80	$80	$80	$80
Total Cost - $	$2,880	$3,840	$4,800	$4,800	$4,800

☒ Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f) (3)) Sec 6, p.6-19 Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

- [ ] Evaluate legal authority (10631 (g)(4))
- [ ] Evaluate economic and non-economic factors (10631 (g)(1))
- [ ] Evaluate environmental, social, health factors (10631 (g)(1))
- [ ] Evaluate customer impact & technological factors (10631 (g)(1))

Table M3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- [ ] Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- [ ] Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

- [ ] If another Agency is implementing (10631 (g)(4))

Agency Name

Residential Ultra-Low-Flush Toilet Replacement Programs (10631 (f)(1)(n))

Implementation **(Section 10631 (f) & (h))**

- [X] Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — Sec 6, p.6-20 Reference & Page Number

Year program started _____ or Year program scheduled to start First qtr. 2008

# of SF pre-1992 accounts _____

- [X] Describes steps necessary to implement measure — Sec 6, p.6-20 Reference & Page Number

Table N1	Single-Family				
Actual	2001	2002	2003	2004	2005
# of ULF rebates					
# of ULF direct installs					
# of ULF CBO installs					
actual expenditures - $					
actual water savings - AFY					

Table N2	Projected ULFT Implementation (1st Qtr. 2008)				
Planned - Type of User	2006	2007	2008	2009	2010
Spa & Hotel Industry			900 hotel rooms = 900 fixtures	900 hotel rooms = 900 fixtures	900 hotel rooms = 900 fixtures
Assume 20% existing ULFTs implemented			720 units need replacing	720 units need replacing	720 units need replacing
Goal is to achieve 50% total penetration			270 to replace in 3 years	270 to replace in 3 years	270 to replace in 3 years
Replace 90/yr with $50 rebate			$4,500/yr for each of 3 years	$4,500/yr for each of 3 years	$4,500/yr for each of 3 years
Study cost/benefit of providing rebate at various levels			$25, $50, and $75	$25, $50, and $75	$25, $50, and $75

# of MF pre-1992 units _____

Table N3	Multi-Family				
Actual	2001	2002	2003	2004	2005
# of ULF rebates					
# of ULF direct installs					
# of ULF CBO installs					
actual expenditures - $					
actual water savings - AFY					

Table N4	Multi-Family				
Planned	2006	2007	2008	2009	2010
# of ULF rebates					
# of ULF direct installs					
# of ULF CBO installs					
projected expenditures - $					
projected water savings - AFY					

☐ Is a toilet retrofit on resale ordinance in effect for your service area?

☒ Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631 (f)(4)) — Sec 6, p.6-20 Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

☐ Evaluate legal authority (10631 (g)(4))

☐ Evaluate economic and non-economic factors (10631 (g)(1))

☐ Evaluate environmental, social, health factors (10631 (g)(1))

☐ Evaluate customer impact & technological factors (10631 (g)(1))

Table N5 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

☒ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))

☒ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

☐ If another Agency is implementing (10631 (g)(4))

Agency Name

2005 Urban Water Management Plan Review for Completeness Form **(Water Code §10620 (d)(1)(2) - 10645**

(Water Code §10620 (d)(1)(2) - 10645, the 2005 Urban Water Management Plan Review for Completeness Form is found on Sheet 1

APPENDIX D

NOTICE OF PUBLIC HEARING AND RESOLUTION FOR PLAN ADOPTION

PROOF OF PUBLICATION
(2015.5.C.C.P)

This is space for County Clerk's Filing Stamp

STATE OF CALIFORNIA
County of Riverside

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter. I am the principal clerk of a printer of the, DESERT SUN PUBLISHING COMPANY a newspaper of general circulation, printed and published in the city of Palm Springs, County of Riverside, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Riverside, State of California under the date of March 24, 1988. Case Number 191236; that the notice, of which the annexed is a printed copy (set in type not smaller than non pariel, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

February 7th, 14th, 2006

All in the year 2006

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

Dated at Palm Springs, California this ----14th, ---- day of--------- February----------, 2006

Signature

Proof of Publication of

No 0419

MISSION SPRINGS WATER DISTRICT
NOTICE OF PUBLIC HEARING ON DRAFT
2005 URBAN WATER MANAGEMENT PLAN

Notice is hereby given that Mission Springs Water District will conduct a public hearing on Tuesday, February 21, 2006 at 3:00 p.m. at 66575 Second Street, Desert Hot Springs.

The Board of Directors will consider adoption of the draft 2005 Urban Water Management Plan (UWMP) as prepared in accordance with the California Urban Water Management Planning Act.

All interested parties are invited to attend the public hearing and be heard in support of, or in opposition to, the draft Plan, or may submit written comments to the District.

A copy of the draft 2005 UWMP is available for inspection at the office of the District located at 66575 Second Street Desert Hot Springs, CA.

Dated: February 2, 2006

/s/ Arden Wallum
General Manager
Mission Springs Water District

Published in the Desert Sun: Tuesday, February 7, 2006 & Tuesday February 14, 2006

RESOLUTION NO. 2006-01

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE MISSION SPRINGS WATER DISTRICT ADOPTING, AND DIRECTING FILING AND IMPLEMENTATION OF THE URBAN WATER MANAGEMENT PLAN PURSUANT TO CALIFORNIA WATER CODE 10610 TO 10657

WHEREAS, the waters of the state are a limited and renewable resource subject to ever-increasing demands, and the conservation and efficient use of urban water supplies are of statewide concern; and

WHEREAS, a long-term, reliable supply of water is essential and urban water management plans are required to actively pursue the efficient use of available supplies; and

WHEREAS, the Mission Springs Water District has completed an update to its 2000 Urban Water Management Plan (2005 Plan) pursuant to the requirements of the Urban Water Management Planning Act of 1983; and

WHEREAS, the 2005 Plan is a general information document and complements other regional planning documents; and

WHEREAS, the purpose of the 2005 Plan is to provide a local perspective and analysis of the current and alternative water demand, supplies and conservation activities of the District; and

WHEREAS, the 2005 Plan also addressed the effects and measures of coping with short-term and chronic water shortages within the District boundaries; and

WHEREAS, the 2005 Plan was circulated for public review and a properly noticed public hearing regarding the 2005 Plan was held by the Board of Directors on February 21, 2006.

NOW THEREFORE, BE IT HEREBY RESOLVED that the Board of Directors of the Mission Springs Water District

1. Adopts the 2005 Plan.
2. Orders its filing with the California Department of Water Resources within 30 days after this date, and made available to other government jurisdictions as required by the UWMP Act.
3. Directs the implementation of the 2005 Plan.

ADOPTED this 21st day of February, 2006

President, Mission Springs Water District
and its Board of Directors

ATTEST:

Secretary, Mission Springs Water District
and its Board of Directors

CERTIFICATION OF ADOPTION

STATE OF CALIFORNIA)
)
COUNTY OF RIVERSIDE)

I, Barbara Carr, Secretary of the Board of Directors of Mission Springs Water District, certify that the foregoing is a full, true and correct copy of **RESOLUTION NO. 2006-01** which was adopted by the Board of Directors of said district at its regular meeting held, February 21, 2006.

This resolution was adopted by the following vote:

AYES:	Duncan, Gibson, Glass, Villines, Wright
NOES:	None
ABSTAIN:	None
ABSENT:	None

It has not been amended or repealed.

Dated: February 21, 2006

Barbara Carr

Secretary of Mission Springs Water District and its Board of Directors

(SEAL)

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APPENDIX E

REFERENCES

Mission Springs Water District

2005 Urban Water Management Plan

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APPENDIX F

WATER REGULATIONS AND SERVICE ORDINANCE No. 93 - 3

Mission Springs Water District's

Water Regulations and Service Ordinance

Ordinance No. 93-3

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Ordinance No. 93-3

An Ordinance of the Board of Directors of Mission Springs Water District Establishing a Water Department, Providing for Installation of and Connection to District Water Mains, and Regulating the Use of Cross Connection and Rescinding Ordinance No. 78-2 Entitled, "Ordinance Establishing Rules and Regulations for Water Service" and Ordinance No. 90-1 Entitled "Adopting a Program of Voluntary Water Conservation and Restricting Water Use During Water Supply Shortages and Emergencies"

Be it Ordained by the Board of Directors of the Mission Springs Water District, that Ordinance No. 78-2 and Ordinance No 90-1 are hereby rescinded.

Be it also Ordained that the following rules and regulations shall hereafter be effective as the rules and regulations of Mission Springs Water District regarding its water service, and shall also provide for the establishment of its water department, provide for installation of and connection to district water mains, and regulate the use of cross connection.

Section 2 - General Provisions

2.01 **Short Title** - This Ordinance may be cited as the "Mission Springs Water District's Water Regulations and Service Ordinance".

2.02 **Intent** - This Ordinance is intended to provide rules and regulations applicable to the administration and operational activities of the district. It may be amended from time to time by action of the Board of Directors of Mission Springs Water District.

2.03 **Enabling Statutes** - This Ordinance is adopted pursuant to the applicable provisions of Division 12 of the Water Code and Division 5, Chapter 7, Title 5, Division 2 of the Government Code, and further pursuant to the Constitution of the State of California. The district is further authorized by Water Code Section 31027 to prescribe and define by ordinance those restrictions, prohibitions and exclusions it may determine to be necessary pursuant to the California Constitution Article X, Section 2 and Water Code Sections 31026, 375-277 and 1009 to restrict the use of district water during threatened or existing water shortages. It is also the intent of the Board of Directors to establish by this Ordinance those procedures and policies necessary for the orderly administration of a water conservation program to prohibit waste and to restrict water use during a water shortage emergency.

2.04 **Application** - This Ordinance shall apply to all water facilities constructed, maintained, and operated by the district.

2.05 **Enterprise** - The district will furnish and/or make available, a system, works, and undertakings used for and useful in, the delivery of water for the district's service area, including all annexations thereto, lands, easements, rights in land, contract rights, and franchises.

2.06 **Separability** - If any section, subsection, sentence, clause, phrase, or portion of this Ordinance or the application thereof to any person or circumstances are for any reason held to be unconstitutional or invalid by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Ordinance or the application of such provision to other persons or circumstances. The Board of Directors hereby declares that it would have passed this Ordinance or any section, subsection, sentence, clause or phrase hereof irrespective of the fact that any one or more section, subsection, sentences, clauses or phrases be declared to be unconstitutional.

2.07 **Words and Phrases** - For the purpose of this Ordinance all words using the present tense shall include the future; all words in the plural number shall include the singular number; and all words in the singular number shall include the plural number.

2.08 **Publication** - Upon adoption, this Ordinance shall be entered in the minutes of the Board of Directors and published in a newspaper of general circulation in the district's service area within ten (10) days following its adoption.

2.09 **Means of Enforcement** - The district hereby declares that the procedures contained herein are established as a means of enforcement of the terms and conditions of their ordinances, rules and regulations and not as a penalty.

2.10 **Notices** - Whenever a notice is required to be given under this Ordinance, unless different provisions are specifically made herein, such notice may be made either by

personal delivery thereof to the person to be notified or by deposit in the U.S. Mail in a sealed envelope, postage prepaid, addressed to such person at his last known business or residence address as the name appears on public records or other records pertaining to the matter to which the notice is directed. Service by mail shall be deemed to have been completed at the time of deposit in the post office.

Proof of giving any notice may be made by the certification of any officer or employee of the district or by affidavit of any person over the age of eighteen years, which shows service in conformity with this Ordinance or other provisions of law applicable to the subject matter concerned.

2.11 **Effect of Heading** - The title, division or section headings contained in this Ordinance shall not be deemed to govern, limit or modify in any manner, the scope, meaning or intent of any section or subsection of this Ordinance.

Section 3 - Definitions

3.01 **Applicant** - The person making application hereunder shall be the owner of the premises involved, or his authorized agents, so authorized in writing to the district, or a licensed plumber or contractor.

3.02 **Board** - The Board of Directors of Mission Springs Water District.

3.03 **Board of Directors** - The Governing Body of Mission Springs Water District.

3.04 **Connection** - The pipe line and appurtenant facilities such as the curb stop, meter and meter box, all used to extend water service from the main to premises, the laying thereof and the tapping of the main. Where services are divided at the curb or property line to serve several customers, each such branch service shall be deemed a separate service.

3.05 **Contractor** - Contractor shall mean an individual, firm, corporation, partnership, or association duly licensed by the State of California to perform the type of work to be done under a permit, contract or agreement.

3.06 **Controller** - Equivalent to Auditor of the district under Water Code Section 30540.

3.07 **Cost** - The cost of labor, materials, transportation, supervision, engineering, and all other necessary overhead expenses.

3.08 **County** - The County of Riverside, California.

3.09 **Cross-Connection** - Any physical connection between the piping system from the district service and that of any other water supply that is not, or cannot be, approved as safe and potable for human consumption, whereby water from the unapproved source may be forced or drawn into the district's distribution mains.

3.10 **Customer** - Any person supplied or entitled to be supplied with water service by the district.

3.11 **Customer's Service Valve** - A valve independent of the district's facilities located in the customer's piping as close to the meter as practical, the operation of which will control the entire water supply from the meter.

3.12 **Developer** - Shall mean any person commencing proceedings under applicable city or county ordinances to effect a land development.

3.13 **District** - Mission Springs Water District, Riverside County, California.

3.14 **District Engineer** - Shall mean the Engineer or Engineering Firm appointed by the Board and acting for the district.

3.15 **Equivalent Fixture Units (EFU)** - The number of Equivalent Fixture Units (EFUs) by the Uniform Plumbing Code or by provisions adopted by the Board.

3.16 **General Manager** - The General Manager of the district.

3.17 **Inspector** - The person who shall perform the work of inspecting water facilities under the jurisdiction or control of the district.

3.18 **Main** - A water line in a street, highway, alley or easement used for public and private fire protection and for the general distribution of water.

3.19 **Owner** - The person owning in fee title, or in whose name the legal title to the property appears, by deed duly recorded in the County Recorder's office, or the person in possession of the property or buildings under claim of, or exercising acts of

ownership over same for himself, or as executor, administrator, guardian or trustee of the owner.

3.20 **Permit** - Any written authorization required pursuant to this or any other regulation of the district.

3.21 **Person** - Any human being, individual, firm, company, partnership, association and private, public or municipal corporation, the United States of America, the State of California, a district and any political subdivision, governmental agency.

3.22 **Premises** - A lot or parcel of real property under one ownership, except where there are well-defined boundaries or partitions such as fences, hedges or other restrictions preventing the common use of the property by several tenants, in which case each portion shall be deemed a separate premise. Components of apartment houses and office buildings may be classified as single premises.

3.23 **Private Fire Protection Service** - Water service and facilities for building sprinkler systems, hydrants, hose reels and other facilities installed on private property for fire protection and the water available therefore.

3.24 **Public Fire Protection Service** - The service and facilities of the entire water supply, storage and distribution system of the district, including the fire hydrants affixed thereto, and the water available for fire protection, excepting house service connections and appurtenances thereto.

3.25 **Regular Water Service** - Water service and facilities rendered for normal domestic, commercial and industrial purposes on a permanent basis, and the water available therefore.

3.26 **Residential** - Any single-family unit, any duplex or triplex family unit not requiring licensing for occupancy and operation.

3.27 **Secretary** - The Secretary to the Board of Directors.

3.28 **Service Connection** - Shall mean the pipeline extending from the main, whether located in a public thoroughfare or private right-of-way, to the curb line or property line of the water user's premises, together with the valves, meter and fittings and appurtenances necessary to connect to the water user's private pipeline.

3.29 **Temporary Water Service** - Water service and facilities rendered for construction work and other uses of limited duration, and the water available therefore.

3.30 **Uniform Plumbing Code** - Shall be the most recent edition of the Code published by the International Association of Plumbing and Mechanical Officials.

3.31 **Waste** - Shall mean any unreasonable or nonbeneficial use of water, or any unreasonable method of use of water, including, but not limited to, the specific uses prohibited and restricted by this ordinance as hereinafter set forth.

3.32 **Water** - Shall mean the water supplied by Mission Springs Water District.

3.33 **Water Department** - The Board of Directors of the district performing functions related to the district's water service, together with the General Manager, district Engineer, Controller, and any other duly authorized representatives.

3.34 **Water Supply Shortage** - Shall mean any water shortage caused by drought or any other threatened or existing water shortage, earthquake, disaster or facility failure, loss of electrical power, pipe line breakage, or other condition which results in, or threatens to result in, the district's inability to meet the water demands of its customers.

3.35 **Water User** - Shall mean any person, firm, partnership, association, corporation or political entity using water obtained from the water system of the district.

Section 4 - Water Department

4.01 **Creation** - A Water Department is hereby created comprised of the Directors, the General Manager, the Controller and such other employees and assistants as may be hired.

4.02 **General Manager** - The General Manager, as provided for in Water Code Section 30580, shall have full charge and control of the maintenance, operation and construction of the water works and water distribution system of the district.

4.03 **Violation, Repairs** - The Director of Operations shall promptly report any violation or disrepair to the General Manager. If the work required is in the nature of an emergency, he shall take whatever steps are necessary to maintain service to customers pending action by the General Manager.

4.04 **Supervision** - The Director of Operations shall supervise all repair or construction work authorized by the General Manager, and perform any other duties prescribed by the General Manager.

4.05 **The Controller** - The Controller shall install and maintain a system of auditing and accounting that shall completely and at all times show the financial condition of the district. The Controller shall furthermore, compute, prepare, and mail bills as hereinafter prescribed, make and deposit collections, maintain proper books of account, collect, account for, and refund deposits, and do whatever else is necessary or directed by the General Manager to set up and maintain an efficient and economical bookkeeping system, and perform any other duties now and hereafter prescribed by General Manager.

Section 5 - General Rules

5.01 **Standards** - The Board of Directors may, from time to time, adopt standard requirements for the design, construction, repair and maintenance, or connection to district water system.

5.02 **Violation Unlawful** - Following the effective date of this Ordinance, it shall be unlawful for any person to connect to, construct, install, provide, maintain or use any other means of water facilities from any building in the area serviced with water by said district except by connection to water facilities in the manner as provided for in this Ordinance. Any violation of this Ordinance will be subject to the provisions of this section, at the discretion of the General Manager.

5.03 **Notice of Violation** - Wherever or whenever practical under the particular circumstances and pursuant to the discretion of the General Manager, any person found to be violating any provision of this or any other ordinance, resolution, rule or regulation of the district shall be served, by the Inspector or other authorized person, with written notice stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. Said time limit shall be not less than two, nor more than seven working days unless otherwise specified. The offender shall, within the period of time stated in such notice, permanently cease all violations. Upon being notified by an authorized representative of the district of any defect arising in any water facility or of any violation of this ordinance, the person or persons having charge of said work shall immediately correct the same. All persons shall be held strictly responsible for any and all acts of agents or employees done under the provisions of this or any other ordinance, resolution, rule or regulation of the district.

5.04 **Protection from Damage** - No unauthorized person shall maliciously, willfully, or negligently break, damage, destroy, uncover, deface or tamper with any structure, appurtenance or equipment which is a part of the district's water works. Any person violating this provision shall be subject to the penalties provided by law.

5.05 **Investigation Powers** - The officers, inspectors, manager and any duly authorized employees of the district shall carry evidence establishing his position as an authorized representative of the district and upon exhibiting the proper credentials and identification shall be permitted to enter in and upon any and all building, industrial facilities and properties to which the district is furnishing water or has been requested to furnish water for the purpose of inspecting, reinspecting, observing, measuring, sampling, testing or otherwise performing such duties as may be necessary in the enforcement of the provisions of the ordinances, resolutions, rules and regulations of the district pursuant to the authorization contained in the required application for water service.

5.06 **Noncompliance with Regulations** - As an alternative method of enforcing the provisions of this or any other ordinance, resolution rule or regulation of the district, the district shall have the power to disconnect the user or subdivision water service from the water mains of the district. Upon disconnection, an authorized representative of the district shall estimate the cost of disconnection from and reconnection to the

system, and such user shall deposit the cost, as estimated, of disconnection and reconnection before such user is reconnected to the system.

5.07 **Liability for Violation** - Any person violating any of the provisions of the ordinances, rules or regulations of the district shall become liable to the district for any expense, loss or damage, occasioned by the district by reason of such violation.

5.08 **Relief on Appeal** - When any person, by reason of special circumstances, is of the opinion that any provision of the ordinances, rules or regulations of the district is unjust or inequitable as applied to the person or premises, they may file a written appeal to the Board of Directors stating the special circumstances, citing the provision complained of, and requesting suspension or modification of that provision as applied to a particular premises. If such appeal is approved, the Board of Directors may suspend or modify the provision complained of, as applied to such person or premises, to be effective as of the date of the appeal and continuing during the period of the special circumstances. All decisions of the Board of Directors regarding such appeal are final.

5.09 **Relief on Own Motion** - The Board of Directors may, on its own motion, find that by reason of special circumstances, any provisions of its ordinances, rules or regulations should be suspended or modified as applied to a particular person or premises and may order such suspension or modification for such premises during the period of such special circumstances or any part thereof. All decisions of the Board of Directors regarding such relief are final.

5.10 **Maintenance of Water Pressure and Pressure Conditions** - The district shall not accept any responsibility for the maintenance of pressure. The district also reserves the right to discontinue service while making emergency repairs, or other work required on the water system as determined by the General Manager. Customers dependent upon a continuous supply should provide emergency storage. All applicants for service connections or water service shall be required to accept such conditions of pressure and service as are provided by the distribution system at the location of the proposed service connection, and to hold the district harmless for any damages arising out of low pressure or high pressure conditions or interruptions of service.

5.11 **Water Pressure Conditions** - Due to topography and other causes, the pressure is not uniform over the territory the system serves. The district reserves the right to change to different pressure in various areas served. However, it shall be the aim and attempted function of the district to maintain adequate pressure at all existing services. Water users dependent upon a continuous water supply should provide adequate storage for emergencies; however, the district assumes no obligation to serve water to elevations higher than its existing facilities serve.

Water users having water heaters, boilers, or other devices requiring a continuous water supply, should take all necessary action to prevent damage or injury to such devices as a result of the shutting off of the water supply.

5.12 **Tampering with District Property** - Except as otherwise specifically authorized by the General Manager, no one, except an employee or representative of the district, shall at any time in any manner operate the curb stops or valves, main stops, gate valves of

the district's system; or interfer with meters or their connections, street mains or other parts of the water system.

5.13 **Charge for Violation** - Failure of a customer to comply with all or any parts of this ordinance, or any other ordinance, resolution or order fixing rates and charges of this district's water service, shall result in said service being discontinued and water shall not be supplied such customer until the customer is in full compliance with the rules and regulations, rates or charges which have been violated.

5.14 **Water System** - The district will furnish a system, works and undertakings used for and useful in obtaining, conserving, and dispensing of water for public and private uses, including all parts of the district, all appurtenances to it, all lands, easements, rights in land, water rights, contract rights, franchises, and other water supply, storage and distribution facilities and equipment.

5.15 **Number of Services per Premise** - The applicant may apply for as many services as may be reasonably required for his premises provided that the pipe line system for each service be independent of the others and that they not be interconnected.

5.16 **Waste of Water** - No customer shall knowingly permit leaks or waste of water. Where water is wastefully or negligently used on a customer's premises, the district may discontinue the service if such conditions are not corrected after giving notice of violation as provided in Section 5.03 herein.

5.17 **Responsibility for Equipment on Customer's Premises** - The district's responsibility ends at the beginning of the water user's side of the meter, or in the case of an unmetered or other special installation, at the point where the district's facilities end. All services, valves and water meters installed by the district shall at all times remain the property of the district and shall be maintained, repaired and removed by the district whenever rendered unserviceable through normal wear and tear. Where replacements, repairs or adjustments of any meter are rendered necessary by the act, negligence or carelessness of the water user or any member of his family or person in his employ, the district shall be reimbursed by the customer for any such damage promptly on presentation of a bill.

5.18 **Damage to Water System Facilities** - The customer shall be liable for any damage to the service facilities when such damage is from causes originating on the premises by an act of the customer or his tenants, agents, employees, contractors, licensees or permittees, including the breaking or destruction of locks by the customer or others on or near a meter, and any damage to a meter that may result from hot water or steam from a boiler or heater on the customer's premises. The district shall be reimbursed by the customer for any such damage promptly on presentation of a bill.

5.19 **Ground-Wire Attachments** - All individuals or business organizations are forbidden to attach any ground-wire or wires to any plumbing which is or may be connected to a service connection or main belonging to the district. The district will hold the owner liable for any damage to its property occasioned by such ground-wire attachments.

5.20 **Control Valve on the Customer's Property** - The customer shall provide a valve on his side of the service installation, as close to the meter location as practical, to control the flow of water to the piping on his premises. The customer shall not use the service curb stop to turn water on and off for his convenience.

5.21 **Unsafe Apparatus** - Water service may be refused or discontinued to any premises where apparatus or appliances are in use which might endanger or disturb the service to other customers.

5.22 **Cross-Connections** - Water service may be refused or discontinued to any premises where there exists a cross-connection as defined in Section 9 of this Ordinance.

5.23 **Fraud or Abuse** - If necessary, service may be discontinued to protect the district against fraud or abuse.

5.24 **Interruptions in Service** - The district shall not be liable for damage which may result from an interruption in service from a cause beyond the control of the district.

5.25 **Ingress and Egress** - District representatives shall have the right of ingress and egress to the customer's premises at reasonable hours for any purpose reasonably connected with the furnishing of water service.

5.26 **Installation of Services** - Only duly authorized employees or agents of the district shall be authorized to install service connections. All service connections shall comply with the specifications of the district, including automatic meter reading devices. Meters will be installed in easements and right of ways, and shall be owned by the district. No rent or other charge will be paid by the district for a meter or other facilities, including connections. All meters will be sealed by the district at the time of installation, and no seal shall be altered or broken except by one of its authorized employees or agents.

5.27 **Change in Location of Meters** - Meters moved for the convenience of the customer will be relocated at the customer's expense. Meters moved for the convenience of the district will be moved at the district's expense.

5.28 **Service Size and Location** - Where practical, the district will install the service connection at a location selected by the applicant. However, the district reserves the right to determine the size of the service connection and its location in relation to boundaries of the premises to be served. Customarily, a service connection will terminate at a point behind and adjacent to the curb in streets or adjacent to the property line in alleys or other utility right-of-way.

In locations where the applicant's premises do not directly abut a public thoroughfare, the district, at its option, may provide a service connection of conventional length terminating at some practical location on public property, and applicant shall be responsible for providing a connection thereto. The applicant's pipe to connect to the district's service connection shall not be laid until the service connection is installed.

In the event the applicant's pipe is laid prior to the time the service connection is installed, and this location does not correspond with that of the service connection, then applicant shall bear the additional cost of connecting the service connection pipe with the applicant's pipe.

5.29 **Curb Stop** - Each service connection installed by the district shall be equipped with a curb stop or gate valve on the inlet side of the meter. Such valve or curb stop is intended for the exclusive use of the district in controlling the water supply through the service connection pipe. If the curb stop or gate valve is damaged by the customer's use, the replacement shall be at the customer's expense.

5.30 **Access to Meters** - The district reserves the right to enter upon the applicant's premises for the purpose of reading, repairing or replacing the water service meter. The applicant shall be solely responsible for the control of all animals which may pose a potential threat to district employees and shall be liable for any injury to district employee resulting from unrestrained animals. Should an applicant for new service fail to properly restrain animals present on his property, the district may, upon written notice, refuse to install or turn on service until such time as the district determines that a threat to its employees no longer exists. In the case of existing customers, where district employees may encounter some personal risk in attempting to read a meter (due to the presence of unrestrained animals, or otherwise), the employee is not required to read the meter, and the customer's bill will be estimated based upon the last year's consumption plus the average increase in consumption in the district. The meter will be read quarterly in the presence of the customer or someone of his choosing, so that over estimates and under estimates of use may be rectified on the bill.

Section 6 - Application for Water Service

6.01 **Application for Water Service** - The property owner or his agent designated in writing, shall make application for regular water service by personally signing an "Application For Water Service" form provided by the district and paying the necessary fee for connection to district facilities, as prescribed in the latest resolution on fees adopted by the Board of Directors.

6.02 **Water Service to Customers Other Than Property Owners** - Service to other than property owners shall be made as follows:

6.02.01 **Property Owner's Signature** - Water service is to be in the name of the property owner. If a property owner rents the premises, the owner or owner's agent designated in writing must complete and sign the application for service.

6.02.02 **Temporary Service** - A tenant may be given temporary service for fifteen (15) days upon payment of a security deposit and furnishing the district with the owner's name, mailing address and telephone number. The security deposit will be refunded to the tenant upon receipt of the signed application for service from the owner.

6.02.03 **Inability to Secure Property Owner's Signature** - The district will mail the application for service to the owner for signature. If the application for water service, signed by the owner, is not returned to the district within fifteen (15) days, service will be terminated, pursuant to the district's rules, regulation, ordinances and resolutions.

6.02.04 **Owner's Responsibility** - Whether or not a property owner has signed the district's application for service form, the property owner is not relieved of his or her responsibility for unpaid water charges for the subject property as provided in this ordinance and pursuant to California Water Code Section 31701 et. seq.

6.03 **Security Deposits**

6.03.01 **Security Deposit Residential** - A security deposit for a single family residential unit shall not be required except upon the determination by the district that the person requesting service is not creditworthy or as specified in Section 6.02.02. The determination of credit worthiness shall be upon criteria determined by the Controller, and may be appealed as provided in Section 11.

6.03.02 **Security Deposit Commercial** - A security deposit for each commercial unit, retail unit, or multi-unit complex shall be deposited at the time application is made.

6.04 **Security Deposit Refund** - The district shall refund each security deposit to the residential customer when funds have been on deposit for one year in a customer's account and there has been no more than one delinquent payment on that account during the year; within thirty (30) days after the date of termination of the account provided the applicant gives the district written notice to terminate water services; or when a new property owner makes a deposit for the same property. The district shall refund the security deposit for commercial, retail, or industrial connections within thirty (30) days after the date of termination of the account provided the customer gives the district written notice to terminate water service; or when a new property owner makes a deposit for the same property.

6.05 **Change In Customer's Equipment** - Customers who make any material change in the size, character, or extent of the equipment or operations utilizing water service, or

whose change in operations results in a significant increase in the use of water shall immediately give the district written notice of the nature of the change and, if necessary, amend their application. The district at its discretion may change the size of the service and charge the customer according to current fee resolution.

6.06 **Domestic, Commercial and Industrial Service Connections** - It shall be unlawful to maintain a connection except in conformity with the following:

6.06.01 **Multiple Units** - Multiple units shall include separate houses, buildings, condominiums, living or business quarters on the same premises or on adjoining premises under single control or management. The district may determine the size of the service connections and their locations in relation to boundaries of the premises to be served and the point of connection to the water user's facilities. The district may limit the number of houses, units, buildings or area of land under one ownership to be supplied by one service connection.

6.06.02 **Single Connection** - Not more than one service connection for domestic or commercial supply shall be installed for a building, except under special conditions as provide in Section 8 (Fire Protection).

6.06.03 **Service Connection** - A service connection shall not be used to supply any adjoining property, or property across a street, alley or easement.

6.06.04 **Divided Property** - When property provided with a service connection is divided, the service connection shall be considered as belonging to the lot or parcel of land which it directly enters.

6.07 **Service Connection Maintenance** - The service connection extending from the water main to the meter, meter box, and curb stop shall be maintained by the district. All pipes and fixtures extending or lying beyond the meter box shall be installed and maintained by the owner of the property, with the exception of the backflow prevention devices, if required. Installation and maintenance of such devices shall be in accordance with Section 9.

6.08 **Damages Through Leaking Pipes and Fixtures** - When turning on the water supply as requested to a vacant house or property, the district will make a reasonable attempt to determine if water is running inside of the building. If such is found to be the case, the water will be left shut off at the curb stop or the private shutoff. The district's jurisdiction and responsibility ends at the property line and the district will in no case be liable for damages occasioned by water running from open or faulty fixtures, or from broken or damaged pipes inside the property line.

6.09 **Damage to Meters** - The district reserves the right to set and maintain a meter on any service connection. The water customer shall be held liable for any damage to the meter due to his negligence or carelessness.

6.10 **Main Extension Required** - The district will provide for all main extensions upon application for service and payment of required charges.

6.10.01 **Application** - Any owner of one or more lots, parcels, or subdivider of a tract of land desiring the extension of one or more water mains to serve such property, shall make written application to the district. Said application shall contain the legal description of the property to be served, tract number, and any additional information

which may be required by the district, and may be accompanied by a map showing the location of the proposed connections.

6.10.02 **Investigation** - Upon receipt of the application, the district shall make an investigation and survey of the proposed extension and estimate the cost thereof.

6.10.03 **Dead-End Lines** - No dead-end lines shall be permitted, except at the discretion of the General Manager. In cases where circulation lines are necessary they shall be designed and installed by the district as a part of the main extension.

6.10.04 **Specifications and Construction** - The size, type and quality of materials and location of the lines shall be specified by the district. Actual construction will be performed by the district or a contractor acceptable to the district.

6.10.05 **Property of District** - Upon completion of such installation, the facilities shall be dedicated to and become property of the district.

6.10.06 **Connections** - The applicant shall, at his cost, provide all connections to buildings and private water systems, as herein provided.

Section 7 - Temporary Service

7.01 **General Provisions** - Upon application to the district, water may be procured from fire hydrants if in the opinion of the General Manager or his authorized representative such excess water is available. The applicant must complete and sign an appropriate permit and deposit with the district an amount established pursuant to the current fee resolution.

Temporary services, whether from a fire hydrant or otherwise, are installed for the convenience and use of persons doing construction work. Temporary services are not limited to construction purposes but may be installed for any use. Any temporary service may be discontinued during any emergency for the duration of the emergency. Temporary services are not transferable except to the successors in interest of the applicants by operation of law.

7.02 **Duration of Service** - Temporary service connections shall be disconnected and terminated within four (4) months after installation unless an extension of time is granted in writing by the General Manager.

7.03 **Security Deposit** - The applicant shall deposit, in advance, the estimated cost of the temporary service. Upon discontinuance of service, the actual cost shall be determined and an adjustment made as an additional charge, refund or credit.

7.04 **Installation and Operation** - All facilities for temporary service to the customer shall be installed and operated in accordance with district instructions.

7.05 **Responsibility for Meters and Installations** - The customer shall use all possible care to prevent damage to the meter or to any other loaned facilities of the district which are involved in furnishing the temporary service from the time they are installed until they are removed. If the meter or other facilities are damaged, the cost of making repairs shall be paid by the customer. The customer shall give notice to the district in writing at least forty-eight (48) hours prior to the time the customer or other person is finished with the meter or meters and the installation.

7.06 **Unauthorized Use of Hydrants** - Tampering with any fire hydrant for the unauthorized use of water therefrom, or for any other purpose, is subject to a penalty charge for each occurrence as may be set by the Board.

7.07 **Meter Availability** - The applicant shall make the hydrant meter available as prescribed by the district for reading on a monthly or bimonthly basis.

7.08 **Pools and Tanks** - When an abnormally large quantity of water is desired for filling a swimming pool or for other purposes, arrangements must be made with the district prior to taking such water. Permission to take water in unusual quantities will be given only if it can be safely delivered through the district's facilities and if other customers are not inconvenienced thereby.

7.09 **Responsibility for Equipment** - The customer shall, at his own risk and expense, furnish, install and keep in good and safe condition all equipment that may be required for receiving, controlling, applying and utilizing water. The district shall not be responsible for any loss or damage caused by the improper installation of such equipment, or the negligence or wrongful act of the customer or any of his tenants, agents, employees, contractors, licensees or permittees in installing, maintaining,

operating or interfering with such equipment. The district shall not be responsible for damage to property caused by faucets, valves and other equipment, which are open when water is turned on at the meter, either originally or when turned on after a temporary shutdown.

Section 8 - Fire Protection

8.01 **Public Fire Protection** - The following pertains to the use of district facilities for public fire protection:

8.01.01 **Use of Fire Hydrants** - Fire hydrants are for use by the district or by organized fire protection agencies pursuant to contract with the district. Other parties desiring to use fire hydrants for any purpose must first obtain written permission from the district prior to use and shall operate the hydrant in accordance with instructions issued by the Water Department. Unauthorized use of hydrants will be prosecuted according to law.

8.01.02 **Moving of Fire Hydrants** - When a fire hydrant has been installed in a location specified by the proper authority, the district has fulfilled its obligation. If a property owner or other party desire a change in the size, type or location of the hydrant, they shall bear all costs of such charges, without refund. Any change in a location of fire hydrant must be approved by the proper authority.

8.02 **Private Fire Protection Service** - The following pertains to the use of district facilities for private fire protection systems with the exception of single-family residences:

8.02.01 **Payment of Cost** - The applicant for private fire protection service shall pay the total actual cost of installation of the service from the distribution main to the service location including the cost of a detector check meter or other suitable and equivalent device, valve and meter box, said installation to become the property of the district.

8.02.02 **No Connection to Other System** - There shall be no connection between this fire protection system and any other water distribution system on the premises.

8.02.03 **Use** - There shall be no water used through the fire protection service except to extinguish fires and for testing the fire fighting equipment.

8.02.04 **Charges for Water Used** - Any consumption recorded on the meter will be charged as provided in district resolution except that no charge will be made for water used to extinguish fires where such fires have been reported to the fire department.

8.02.05 **Monthly Rates** - The monthly rates for private fire protection shall be established from time to time by resolution of the Board of Directors.

8.02.06 **Water for Fire Storage Tanks** - Occasionally water may be obtained from a private fire service for filling a tank connected with the fire service, but only if written permission is secured from the district in advance and an approved means of measurement is available.

8.02.07 **Violation of Agreement** - If water is used from a private fire service in violation of the agreement or this ordinance, the district may, at its option, discontinue and remove the service.

8.02.08 **Valve** - When a fire service connection is installed, the valve governing same will be closed and sealed and remain so until a written order is received from the owner of the premises to have the water turned on.

8.02.09 **Meter** - If the district does not require a meter, and if water is used through a fire service connection for any other purpose than extinguishing of fires, the district shall have the right to place a meter on the fire service connection at the owner's expense, or shut off the entire water supply from such premises.

8.02.10 **Additional Service** - The district shall have the right to take a domestic, commercial or industrial meter service connection from the fire service connection at the curb to supply the same premises as those to which the fire service connection belongs. The district shall also have the right to determine the proportion of the installation costs properly chargeable to each service connection, if such segregation of costs shall become necessary.

8.02.11 **Check Valve** - The district reserves the right to install on all fire service connections a check valve of a type approved by the National Board of Fire Underwriters and/or the most recent edition of the Manual of Cross-Connection Control published by the Foundation for Cross-Connection Control Research, University of Southern California, and to equip the same with a bypass meter at the expense of the owner of the property.

Section 9 - Cross-Connection Control

9.01 **Cross Connections** - The purpose of this Section is to protect the public potable water supply system of Mission Springs Water District by establishing a Cross Connection Control Program to effect the control of cross connections, actual or potential, thereby isolating within the customer's private water system or internal piping, contaminants or pollutants which could backflow or back siphon into the district's water supply system.

The regulations relating to cross connections as established in the California Administrative Code, Title 17, as amended from time to time and the most recent edition of Cross-Connection Control published by the Foundation for Cross-Connection Control Research, University of Southern California, insofar as these regulations are applicable to the protection of water supply of this district are hereby adopted, incorporated herein by reference and made a part hereof.

9.02 **Determination of Cross-Connection** - Upon the determination by the district that a backflow prevention device is required in the customer's private piping system for the safety of the public water supply system, the district shall immediately install such a device in the manner and location prescribed in Section 9.06.03. All costs for such installation will be paid by the customer.

9.03 **Discontinuance of Service** - Failure to install said device as prescribed shall constitute grounds for discontinuance of water service to the premise. No water service shall be installed or maintained by the district to any premises on which there exists or there is suspected to exist cross-connection between the public water supply and other piping, fixtures, appliances, equipment, drains or any system which might cause contamination or pollution through backflow or back-siphonage, unless such service is protected by the installation of a backflow prevention device.

9.04 **Degree of Hazard** - The type or kind of device installed shall depend on the degree of hazard involved. The degree of hazard shall be determined by the most recent edition of the Manual of Cross-Connection Control published by the Foundation for Cross-Connection Control Research, University of Southern California.

9.05 **Approved Devices** - The district shall maintain and make available a list of approved backflow prevention devices which may be installed for the protection of the public water supply system.

9.06 **Inspection, Testing and Maintenance** - All backflow prevention devices shall be inspected and tested at least annually for proper operation. Inspection and testing shall be performed by the district's certified inspector or a district approved private inspector. The results of each test, including repairs, shall be recorded on a form maintained by the district.

9.06.01 **Repair of Defective Devices** - In the event that the device is found to be defective, the district shall make the necessary repairs and/or replacement and bill the customer for the repair and/or replacement. All annual inspections, testing, and acceptance tests after installation, repair and/or replacement shall be at the expense of the owner.

9.06.02 **No Service Unless Properly Protected** - A water service connection to any premise shall not be installed or maintained unless the public water supply system is protected in accordance with the laws of the State of California and this ordinance. If a backflow prevention device has not been installed, tested and maintained in accordance with the provisions of this ordinance, or if a backflow prevention device has been removed or bypassed, or if an unprotected cross connection exists on the premise, water service shall be discontinued immediately and not restored until such condition or defect have been corrected.

9.06.03 **Installation Required** - Upon the determination by the district that a backflow prevention device is required on a customer's water service line, it shall be installed immediately behind the meter and before the first branch line leading off the service line.

9.07 **Cross-Connection Control Criteria** - Criteria examined to determine whether a backflow prevention device is required shall include, but not be limited to, the following:

9.07.01 **Auxiliary Water Supply** - A premise being or to be served with water by the district having an auxiliary water supply of a quality which is not acceptable to the district as an additional source.

9.07.02 **Industrial Hazards** - A premise on which industrial fluids or other objectionable substances are being handled in a manner as to create an actual or potential hazard to the public water supply.

9.07.03 **Inspection Not Possible** - A premise whose internal piping system has cross-connections that cannot be corrected or controlled, or the system is not accessible for inspection to make a determination of the existence of a cross connection.

9.08 **Enforcement** - Service of water to any premise shall be discontinued by the district if a backflow prevention device required by the rules and regulations of the district is not installed, tested and maintained or if defects are found in the installed backflow prevention device or if it is found that a backflow prevention device has been removed or bypassed or if unprotected cross-connections exist on the premises. Service will not be restored until such condition or defects are corrected. The district representative assigned to inspect premises relative to possible cross connection hazards, shall carry proper credential of his office, upon exhibition of which, he shall have the right of entry during usual business hours to inspect any and all buildings and premises in the performance of his duty. This right of entry shall be a condition of water service in order to provide assurance that the continuation of service to the premises will not constitute a menace to health, safety and welfare to the people throughout the district's water system.

Section 10 - Customer Billing Procedures

10.01 **Establishment of Rates and Charges** - The Board of Directors shall from time to time by resolution, establish rates and charges for water and other service provided by the Mission Springs Water District.

10.02 **Charges** - Water charges shall begin when a water service connection is installed and the meter is set or an existing service is requested to be turned on, unless the water is ordered to be left shut off when the service connection is ordered or installed.

10.03 **Liability for Water Used** - The property owner shall be held liable for water used until the district is notified in writing to discontinue service or to transfer the account to another property owner.

10.04 **Liens for Unpaid Bills** - All unpaid bills will be made a lien against the property pursuant to California Water Code Section 31701 et. seq. and to these rules and regulations.

10.05 **Owner Liability** - The property owner remains responsible for all charges owed to the district whether or not the property owner actually lives on the premises, or signs the application for water service form.

10.06 **Billing Period** - The regular billing period will be monthly or bimonthly at the option of the district.

10.07 **Opening and Closing Bills** - Opening and closing bills for less than the normal billing period shall not be pro-rated. Closing bills may be estimated by the district for the final period as an expediency to permit the customer to pay the closing bill at the time service is discontinued.

10.08 **Payment of Bills** - Bills for metered water service shall be rendered at the end of each billing period and are due and payable upon presentation. If full payment is not received at the business office of the district on or before the final payment date, the bill shall become past due and delinquent.

10.09 **Delinquency Notice** - A delinquency notice shall be mailed to customers whose accounts are delinquent, warning that service will be disconnnected unless payment is made within seven (7) calendar days from the date of preparation of the delinquency notice. The delinquency notice shall indicate amount due, including delinquent charges, and the total amount which must be paid. Notice of any delinquency in a tenant's account shall also be sent to the owner of the property with indication of the owner's liability.

10.10 **Suit** - All unpaid rates, charges and penalties herein provided may be collected by suit.

10.11 **Costs** - Defendant shall pay all costs of suit in any judgment rendered in favor of district, including reasonable attorney's fees.

10.12 **Upon Vacating Premises** - Customers desiring to discontinue service should so notify the district in writing at least two (2) days prior to vacating the premises. Unless discontinuance of service is ordered in this manner, the customer shall be liable for ongoing charges whether or not any water is used, up until time of requested discontinuance of service.

Section 11 - Complaints and Disputed Bills

11.01 **Right to Meet** - Should a customer have a complaint with regard to water service, the district rules, regulations, resolutions, ordinances, or dispute the accuracy of a bill for water service or other charges, for any reason whatsoever, the customer has the right to meet first with the Controller and then the General Manager to discuss the dispute and present any evidence the customer has to support their position.

11.02 **Arrangement of Meeting** - To arrange such a meeting the customer shall contact the district office, either in writing or by telephone, during normal business hours as may be set by the Board.

11.03 **Presentation of Evidence** - The customer may be accompanied by a friend, attorney, or other representative to meet with the Controller or General Manager and may present any evidence they may have to support their position.

11.04 **Unresolved Disputes** - If the customer is unable to resolve his dispute with the Controller or General Manager he may submit the complaint in writing, along with a full and detailed explanation to the Public Affairs Committee of the Board of Directors for resolution or referral to the Board of Directors pursuant to Section 5.08 (Relief on Appeal).

11.05 **Discontinuance of Service** - No water or other service shall be discontinued pending the final resolution of a dispute.

11.06 **Meter Test Deposit** - Should a customer desire to have the water meter service serving their premises tested, he shall first deposit an amount as specified in district resolutions, for testing of meters up to one inch (1") in size, and shall be present when the meter is tested in the meter shop of the Water Department. Should the meter register more than two percent (2%) fast, the deposit will be refunded, but should the meter register less than two (2%) fast, the deposit will be retained by the district.

11.07 **Adjustment for Fast Meter Errors** - If a meter tested at the request of a customer is found to be more than two percent (2%) fast, the excess charges for the time service was rendered the customer requesting the test, or for a period of six months, whichever shall be the lesser, shall be refunded to the customer.

11.08 **Adjustment for Slow Meter Errors** - If a meter tested at the request of a customer is found to be more than ten percent (10%) slow, the district may bill the customer for the amount of the undercharge based upon corrected meter readings for the period, not exceeding six months, that the meter was in use.

11.09 **Non-Registering Meters** - If a meter is found to be not registering, the charges for service shall be based on estimated consumption using previous consumption for a comparable period or by such other method as is determined appropriate. Such estimates shall be made by the general manager, subject to the right of appeal under Section 5.08.

Section 12 - Disconnection for Non-payment

12.01 **Disconnection for Non-payment** - Water service shall be discontinued if payment for water service is not made within seven (7) calendar days of the date of mailing the delinquent notice. At lease forty-eight (48) hours prior to termination, the district will make a reasonable attempt to notify the resident of the affected property by telephone or by personal contact.

12.02 **Complaint Procedures for Disconnection** - Service disconnection for non-payment of bills or violation of any of the district's rules, regulations, ordinances or resolutions is subject to the complaint procedures specified in Section 11 herein.

12.03 **Refusal or Neglect to Pay Debt** - Any amount due is a debt to the district and any person, firm or corporation failing, neglecting, or refusing to pay this debt may be subject to a civil action for the amount due in a court of competent jurisdiction.

12.04 **Lien Against Property for Non-Payment** - Any unpaid debt will be deemed a lien against the real property to which service is rendered as specified herein and California Water Code Section 31701 et seq.

12.05 **Service Charges for Violations** - If water service is disconnected for violation of any of the district's rules, regulations, resolutions or ordinances, service shall not be reinstated until the violations have been corrected and all applicable service charges and fees as provided for herein are paid.

12.06 **Partial Payments** - A partial payment of a delinquent account may be accepted and credited to a customer's account, but such partial payment shall not be cause for removing the account from a delinquent status and shall not preclude the meter from being turned off for delinquency.

12.07 **Authorization for Continuance of Service for Delinquent Accounts** - The General Manager, or his designee, may authorize continuation of service to a delinquent account if financial arrangements satisfactory to the district are established.

Section 13 - Adding Delinquent Charges to Tax Roll

13.01 **Report of Delinquent and Unpaid Charges** - A report of delinquent and unpaid charges for water and other services which remain unpaid and delinquent for sixty (60) days or more on July 1 of each year shall be prepared and submitted to the Board for consideration as tax liens. The unpaid and delinquent charges listed in said report for each parcel of property shall be fixed at the amount listed in said report.

13.02 **Adoption and Filing of Report** - The secretary shall file with the Riverside County Assessor and Board of Supervisors, in the time and manner specified by the County Assessor and Board of Supervisors, a copy of such written report with a statement endorsed thereon over the signature of the secretary, that such a report has been adopted and approved by the Board of Directors and that the County Assessor shall enter the amount of such charges against the respective lots or parcels of land as they appear on the current assessment roll.

13.03 **Collection of Delinquent and Unpaid Charges** - The County Assessor shall include the amount of charges on bills for taxes levied against their respective lots and parcels of land and thereafter, the amount of such unpaid and delinquent charges shall be collected at the same time and in the same manner by the same person as, together with and not separately from, the general taxes, if any, for the district or the County and shall be delinquent at the same time and thereafter be subject to the same delinquency penalties.

Section 14 - Charges

14.01 **Charges** - All charges described herein shall be adopted by board resolution.

14.02 **Adjustment of Connection Charges** - To reflect the changing cost of construction, the charges contained herein may be adjusted annually by the district in accordance with its actual costs for connections from the previous year.

14.03 **Consumption Charge** - The charge per hundred cubic feet for all water registered by the customer's water service meter.

14.04 **Delinquency Charge** - A charge added to each delinquent account at the time any amount becomes delinquent with the exception of an account that has had no delinquencies in the prior 12-month period. When a delinquency charge is made, such charge shall be added to the delinquent account as of the date the account becomes delinquent. This charge shall become an inseparable part of the amount due as of that time.

14.05 **Disconnect/Reconnect Charge** - The charge which covers reasonable district costs for disconnection and reconnection of service connections which are in violation of the provisions contained herein.

14.06 **Fire Hydrant Installation Charge** - The charge for installation of fire hydrants as may be required.

14.07 **Fire Service Standby Charge** - The standby charge per diameter inch of the district fire service meter. Water use through this service is limited to emergency fire requirements only.

14.08 **Inspection Charge** - The charge to a customer when a service connection or facility requires inspection by district personnel.

14.09 **Meter Test Charge** - The charge which covers district costs for pulling, testing, and reinstalling the water meter to be tested.

14.10 **Security Deposit Charge** - The charge which insures payment of minimum district charges. Upon discontinuance of service, the Security Deposit shall be applied to reduce any unpaid charges outstanding on the customer's account. The amount of deposit required shall be established by the Board of Directors in the Resolution on Fees. The Security Deposit shall be refunded to the customer as provided in Section 6.04 herein.

14.11 **Special Facilities Charge** - A charge required for development of limited service areas whenever special facilities, including, but not limited to, booster stations, hydropneumatic stations and pressure regulators, are required. The charge to be made to a developer or owner of land that is considered by the district to be within a limited service area shall be based upon the developer's or landowner's proportionate share of the cost for the installation of such special facility. Such proportionate share to be borne by the developer or landowner shall be based on the percentage of such development to the entire limited service area to be served by the special facilities; and the difference between the cost of facilities to serve the same number of acres or area under normal conditions and the cost of facilities to serve the acreage or area under special conditions at a higher cost.

14.12 **Service Charge** - The monthly service charge applicable to all metered services.

14.13 **Unauthorized Use of Water Charge** - The charge to any person, organization or agency for each unauthorized use of district water, or for tampering in any manner with any meter belonging to the district, in which tampering shall affect the accuracy of such meter.

14.14 **Water Main Extension Charge** - The charge for the replacement or construction of the water main fronting on the property to be served.

14.15 **Water Service Connection Charge** - The charge for the type and size of water service connection desired. Such regular charge shall be paid in advance by the applicant. Where there is no regular charge, the district reserves the right to require the applicant to deposit an amount equal to the estimated cost of such service connection.

14.16 **Water System Design Charge** - A non-refundable charge which shall be required for all main extensions, service connections and/or special facilities requiring the preparation of engineering plans and drawings.

14.17 **Construction Water Charge** - A charge for temporary water service. It is a monthly billing and includes a service charge and a consumption charge billed at the highest rate for consumption.

Section 15 - Water Conservation

15.01 **Waste or Nuisance Water and Other Substances** - It is unlawful for any person, firm or corporation, to deposit, drain, wash, allow to run or divert into or upon any public road, highway, street or alley, drainage ditch, storm drain, or flood control channel owned by or controlled by any public agency within the district, any water, mud, or sand except that, upon written application of any person filed with the district and approved by the General Manager, which the district may, upon such terms and conditions as it may deem advisable to impose, including the charging of a fee therefore, grant a permit to such person to do any of the acts prohibited by this section, provided the same shall not be detrimental to public health, safety or welfare. For purposes of enforcement of this Section, the owner of the meter or property which is the source of the waste or nuisance water or other substance as defined herein is considered the party responsible for any violations cited hereunder.

15.02 **Conservation Measures Stage No. 1** - Normal Conditions: Voluntary Conservation Measures - Normal conditions shall be in effect when the district is able to meet all the water demands of its customers in the immediate future. During normal conditions, all water users should continue to use water wisely, to prevent the waste or unreasonable use of water, and to reduce water consumption to that necessary for ordinary domestic and commercial purposes.

15.03 **Threatened Water Supply Shortage Stage No. 2** - In the event of a threatened water supply shortage which could affect the district's ability to provide water for ordinary domestic and commercial uses, the Board of Directors shall hold a public hearing at which customers of the water supply shall have the opportunity to protest and to present their respective needs to the district. The Board may then, by Resolution, declare a water shortage condition to prevail, and the following conservation measures shall be in effect:

15.03.01 **Exterior Landscape Plans** - Exterior landscape plans for all new commercial and industrial development shall provide for timed irrigation and shall consider the use of drought resistant varieties of flora. Such plans shall be presented to and approved by the district prior to issuance of a water service letter.

15.03.02 **Excessive Irrigation and Related Waste** - No customer of the district or other person acting on behalf of or under the direction of a customer shall cause or permit the use of water for irrigation of landscaping or other outdoor vegetation, plantings, lawns or other growth, to exceed the amount required to provide reasonable irrigation of same, and shall not cause or permit any unreasonable or excessive waste of water from said irrigation activities or from watering devices or systems. The free flow of water away from an irrigated site shall be presumptively considered excessive irrigation and waste as defined in Section 3.26 herein.

15.03.03 **Agricultural Irrigation** - Persons receiving water from the district who are engaged in commercial agricultural practices, whether for the purpose of crop production or growing of ornamental plants shall provide, maintain and use irrigation equipment and practices which are the most efficient possible. Upon the request of the General Manager, these persons may be required to prepare a plan describing their

irrigation practices and equipment, including but not limited to, an estimate of the efficiency of the use of water on their properties.

15.03.04 **Commercial Facilities** - Commercial and industrial facilities shall, upon request of the General Manager, provide the district with a plan to conserve water at their facilities. The district will provide these facilities with information regarding the average monthly water use by the facility for the last two-year period. The facility will be expected to provide the district with a plan to conserve or reduce the amount of water used by that percentage deemed by the Board of Directors to be necessary under the circumstances. After review and approval by the General Manager, the water conservation plan shall be considered subject to inspection and enforcement by the district.

15.03.05 **Parks, Golf Courses, Swimming Pools, and School Grounds** - Public and private parks, golf courses, swimming pools, and school grounds which use water provided by the district shall use water for irrigation and pool filling between the hours of 6:00 p.m. and 6:00 a.m.

15.03.06 **Domestic Irrigation** - Upon notice and public hearing, the district may determine that the irrigation of exterior vegetation shall be conducted only during specified hours and/or days, and may impose other restrictions on the use of water for such irrigation. The irrigation of exterior vegetation at other than these times shall be considered to be a waste of water.

15.03.07 **Swimming Pools** - All residential, public and recreational swimming pools, of all sizes, shall use evaporation resistant covers and shall recirculate water. Any swimming pool which does not have a cover installed during periods of nonuse shall be considered a waste of water.

15.03.08 **Run-off and Wash-down** - No water provided by the district shall be used for the purposes of wash-down of impervious areas, without specific written authorization of the General Manager. Any water used on a premises that is allowed to escape the premises and run off into gutters or storm drains shall be considered a waste of water.

15.03.09 **Vehicle Washing** - The washing of cars, truck or other vehicles is not permitted, except with a hose equipped with an automatic shut-off device, or at a commercial facility designed and so designated on the district's billing records.

15.03.10 **Drinking Water Provided by Restaurants** - Restaurants are requested not to provide drinking water to patrons except by request.

15.04 **Water Shortage Emergency Stage No. 3** - Mandatory Conservation Measures - In the event of a water shortage emergency in which the district may be prevented from meeting the water demands of its customers, the Board of Directors shall, if possible given the time and circumstances, immediately hold a public hearing at which customers of the district shall have the opportunity to protest and to present their respective needs to the Board. No public hearing shall be required in the event of a breakage or failure of a pump, pipeline, conduit causing an immediate emergency. The General Manager is empowered to declare a water shortage emergency, subject to the ratification of the Board of Directors within 72 hours of such declaration, and the following rules and regulations shall be in effect immediately following such declaration:

15.04.01 **Prohibition** - Watering of parks, school grounds, golf courses, lawn watering, landscape irrigation, washing down of driveways, parking lots or other impervious surfaces, washing of vehicles, except when done by commercial car wash establishments using only recycled or reclaimed water, filling or adding water to swimming pools, wading pools, spas, ornamental ponds, fountains and artificial lakes are prohibited.

15.04.02 **Restaurants** - Restaurants shall not serve drinking water to patrons except by request.

15.04.03 **Construction Meters** - No new construction meter permits shall be issued by the district. All existing construction meters shall be removed and/or locked.

15.04.04 **Commercial Nurseries and Livestock** - Commercial nurseries shall discontinue all watering and irrigation. Watering of livestock is permitted as necessary.

15.05 **Implementation and Termination of Mandatory Compliance Stages** - The General Manager of the district shall monitor the supply and demand for water on a daily basis to determine the level of conservation required by the implementation or termination of the Water Conservation Plan Stages, and shall notify the Board of Directors of the necessity for the implementation or termination of each stage. Each declaration of the Board of Directors implementing or terminating a water conservation stage shall be published at least once in a newspaper of general circulation, and shall be posted at the district offices. Each declaration shall remain in effect until the Board of Directors otherwise declares, as provided herein.

15.06 **Exceptions** - Application for Exception Permit - The General Manager may grant permits for uses of water otherwise prohibited under the provisions of this Ordinance if he finds and determines that restrictions herein would either:

15.06.01 **Hardship** - Cause an unnecessary and undue hardship to the water user or the public; or

15.06.02 **Emergency** - Cause an emergency condition affecting the health, sanitation, fire protection or safety of the water use or of the public.

15.06.03 **Exemptions Granted** - Such exceptions may be granted only upon written application therefore. Upon granting such exception permit, the General Manager may impose any conditions he determines to be just and proper.

15.07 **Enforcement, Inspection** - Authorized employees of the district, after proper identification may, during reasonable hours, inspect any facility having a water conservation plan, and may enter onto private property for the purpose of observing the operation of any water conservation device, irrigation equipment or water facility. Employees of the district may also observe the use of water or irrigation equipment within the district from public rights-of-way and as alleged violations are reported to the district.

15.08 **Criminal Penalties for Violation** - Water Code Section 31029 makes any violation of this Ordinance a misdemeanor, and upon conviction thereof, the violator shall be punished by imprisonment, fine or by both such fine and imprisonment as may be allowed by law.

15.09 Civil Penalties for Violation - In addition to criminal penalties, violators of the mandatory provisions of this Ordinance shall be subject to civil action initiated by the district, as follows:

15.09.01 First Violation - For a first violation, the district shall issue a written notice of violation to the water user violating the provisions of this Ordinance. The notice shall be given pursuant to the requirements of Section 15.10 below.

15.09.02 Second Violation - $100.00 Surcharge - For a second violation of this Ordinance within a 12-month period, or for failure to comply with the notice of violation within the period stated, a one-month penalty surcharge of $100.00 is hereby imposed for the meter through which the wasted water was supplied.

15.09.03 Third Violation - $200.00 Surcharge and/or Installation of Flow Restrictor - For a third violation of this Ordinance within a 12-month period, or for continued failure to comply within 30 days after notice and imposition of second violation sanctions, a one-month penalty surcharge in the amount of $200.00 is hereby imposed for the meter through which the wasted water was supplied. In addition to the surcharge, the district may, at its discretion, install a flow-restricting device at such meter with a one-eighth inch orifice for services up to one and one-half inch size, and comparatively sized restrictors for larger services, on the service of the customer at the premises at which the violation occurred for a period of not less than 48 hours. The charge to the customer for installing a flow-restricting device shall be based upon the size of the meter and the actual cost of installation but shall not be less than that provided in the district's Rules and Regulations. The charge for removal of the flow-restricting device and restoration of normal service shall be as provided in the district's Rules and Regulations.

15.09.04 Subsequent Violations - Discontinuance of Service - For any subsequent violation of this Ordinance within the 24 calendar months after a first violation as provided in Section 15.09.02 hereof, the penalty surcharge provided in Section 15.09.03 hereof shall be imposed and the district may discontinue water service to that customer at the premises or to the meter where the violation occurred. The charge for reconnection and restoration of normal service shall be as provided in the Rules and Regulations of the district. Such restoration of service shall not be made until the General Manager of the district has determined that the water user has provided reasonable assurances that future violations of this Ordinance by such user will not occur.

15.10 Notice of First Violation - For a first violation, written notice shall be given to the customer and/or property owner personally or by regular mail.

15.10.01 Subsequent Violations - If the penalty assessed is a surcharge for a second or third violation, notice may be given by regular mail.

15.10.02 Violations Involving Flow Restrictor Installation or Discontinuance of Water Service - If the penalty assessed is, or includes, the installation of a flow restrictor or the discontinuance of water service to the customer for any period of time, notice of the violation shall be given in the following manner:

15.10.02.01 Personal Service - By giving written notice thereof to the occupant and/or property owner personally; or if the occupant and/or property owner is absent from

his/her place of residence and from his/her assumed place of business, by leaving a copy with some person of suitable age and discretion at either place, and sending a copy through the United States Mail addressed to the occupant and/or owner at his/her place of business or residence; or

15.10.02.02 **Posting** - If such place of residence and business cannot be ascertained, or a person of suitable age or discretion cannot be located, then by affixing a copy in a conspicuous place on the property where the failure to comply is occurring and also by delivering a copy to a person there residing, if such person can be found, and also sending a copy through the United States Mail addressed to the occupant at the place where the property is situated and to the owner, if different.

15.10.03 **Form of Notice** - All notices provided for in this Section shall contain, in addition to the facts of the violation, a statement of the possible penalties for each violation and a statement informing the occupant/owner of his/her right to a hearing on the violation.

15.11 **Hearing** - Any customer or property owner against whom a penalty is levied pursuant to this Ordinance shall have a right to a hearing, in the first instance by the General Manager, with the right of appeal to the Public Affairs Committee of the Board of Directors, on the merits of the alleged violation upon the written request of that customer within fifteen (15) days of the date of alleged violation. At the next regularly scheduled meeting, the customer may then appear and present any evidence in support of his position and ask for a decision by the Public Affairs Committee.

15.12 **Delays on Action** - The Public Affairs Committee shall act promptly to resolve the dispute, but may delay a resolution of the dispute to the time of its next regular meeting in order to investigate the dispute or receive special reports related to the dispute.

15.13 **Decision of the Public Affairs Committee** - The decision of the Public Affairs Committee of the Board of Directors shall be final. Should the Committee not render a decision within sixty (60) days of appeal to the Committee, this failure to act shall be deemed a denial of the requested action, unless both parties have agreed to extend the resolution period.

Section 16 - Effective Date

This Ordinance shall become effective upon adoption.

APPROVED AND ADOPTED this 18th day of October, 1993.

Ayes: Gibson, Glass, Warner, Webb, Wright
Noes: None
Absent: None

John R. Warner
President of Mission Springs Water District
and the Board of Directors thereof.

ATTEST:

John L. Morgan
Secretary of Mission Springs Water District
and the Board of Directors thereof.

STATE OF CALIFORNIA)
)
COUNTY OF RIVERSIDE)

I, JOHN L. MORGAN, Secretary of the Board of Directors of Mission Springs Water District, HEREBY CERTIFY that the foregoing Ordinance was duly adopted by the Board of Directors of said district at a regular meeting held on the 18th day of October 1993 and that it was so adopted by the following vote:

AYES: Directors Warner, Webb, Gibson, Glass, Wright

NOES: None

ABSENT: None

I ALSO CERTIFY that the foregoing is a full, true and correct copy of Ordinance No. 93-3 of said Board, and that it has not been amended or repealed.

DATED this 18th day of October, 1993.

John L. Morgan
Secretary of Mission Springs Water District
and the Board of Directors thereof.

(SEAL)

Mission Springs Water District

Water Regulations and Service Ordinance

Ordinance No. 93-3

Amendments and Revisions

Amended by Ordinance 97-1:

6.10.7 Added Recapture Agreement
14.18 Added Lien Release Fee
14.19 Added Returned Check Charge

Rescinds Ordinance 90-1

Rescinds Ordinance 78-2

Mission Springs Water District

6657 Second Street, Desert Hot Springs, CA 92240

(760) 329-6448