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**DESERT WATER AGENCY
2005 URBAN WATER MANAGEMENT PLAN
DECEMBER 2005**

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**DESERT WATER AGENCY
Palm Springs, California**

**2005 URBAN WATER MANAGEMENT PLAN
CONTACT SHEET**

Date plan submitted to the Department of Water Resources:	December 29, 2005
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The Water supplier is a:	Public Agency
The Water supplier is a:	Retailer
Utility services provided by the water supplier include:	Domestic and municipal water (for residential and commercial development), recycled water (for municipal park and landscape irrigation), sanitary sewage (for Cathedral City area), hydroelectric power (for energy delivery to Southern California Edison Company), solar energy power (for energy delivery to Desert Water Agency Operations Center with excess to Southern California Edison Company), and ground water basin management (for ground water replenishment and assessment therefor)
Is This Agency a Bureau of Reclamation Contractor?	No
Is This Agency a State Water Project Contractor?	Yes

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SECTION I
PUBLIC PARTICIPATION

SECTION I PUBLIC PARTICIPATION

A. PUBLIC PARTICIPATION

Law 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 ... After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

1. General

Desert Water Agency (DWA or Agency) has actively encouraged community participation in its urban water management planning efforts since the first plan was developed in 1985. Public meetings were held on the 1985, 1990, 1995, 2000, and 2005 plans. For the 2005 Plan, the appropriate legal notice was published in the Desert Sun Newspaper on November 22 and 29, 2005.

DWA's Board of Directors received copies of the Draft Plan for review at its November 15, 2005 meeting. On December 6, 2005, DWA held a Public Hearing to receive comments on its 2005 Draft Urban Water Management Plan. All comments received prior to and during the Public Hearing were taken into consideration in the preparation of the final Plan.

2. Plan Adoption

DWA prepared this Urban Water Management Plan (UWMP or Plan) in 2005. This Plan was adopted by DWA's Board of Directors by Minute Order on December 6, 2005, and submitted to the California Department of Water Resources (DWR) within 30 days of Board approval. A signed copy of DWA's Minute Order of Plan Adoption is included as Appendix A of this Final Plan. This Plan includes all information necessary to meet the requirements of California Water Code Division 6, Part 2.6 (Urban Water Management Planning).

B. AGENCY COORDINATION

Law 10620 (d) (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.

1. Coordination within the Agency and Interagency Coordination

DWA staff met and coordinated the development of this plan with Coachella Valley Water District (CVWD) and Mission Springs Water District (MSWD). Historically, DWA has worked closely with local cities and other local agencies in order to serve the public's best interests; therefore, DWA has developed this plan through coordination with the public and other entities as summarized in Table 1 below. DWA's Draft UWMP was submitted to these entities for review and comment prior to final plan adoption.

Table 1 Coordination with Appropriate Agencies							
Entities	Coordination and Public Involvement Actions						
	Participated in UWMP Development	Commented on Draft	Attended Public Meetings	Contacted for Assistance	Sent Copy of Draft	Sent Notice of Intention to Adopt	Not Involved/ No Information
City of Palm Springs		✓			✓	✓	
City of Cathedral City					✓	✓	
Coachella Valley Water District	✓			✓	✓	✓	
Mission Springs Water District	✓	✓		✓	✓	✓	
County of Riverside Planning Department					✓	✓	
Coachella Valley Resource Conservation District					✓	✓	
Local Library					✓	✓	
General Public			✓		✓	✓	

C. SUPPLIER SERVICE AREA

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

10631. (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.

1. Formation, Purpose, and Service Area

DWA was formed in 1961 for the purpose of importing water into the northwesterly portion of the Upper Coachella Valley. In 1962, DWA entered into a water supply contract with the State of California through the DWR. CVWD entered into a similar contract the following year. In 1968, DWA purchased the Palm Springs and Cathedral City Water Company water systems to provide domestic and municipal water service (hereafter municipal water service) to Palm Springs and vicinity.

DWA's territory has increased from an initial 72 square miles to the current 325 square miles, and it includes the City of Palm Springs (C/PS), the southwest portion of the City of Cathedral City (C/CC), the City of Desert Hot Springs (C/DHS), essentially all of Mission Springs Water District (MSWD), and some unincorporated areas within Riverside County.

DWA's Municipal Water Service Area includes C/PS, the southwest portion of C/CC, and some unincorporated areas within Riverside County. It does not include the MSWD Service Area, which is generally northerly of Interstate 10 and includes C/DHS and its surroundings. MSWD provides municipal water service throughout its Service Area, and is preparing its own Urban Water Management Plan.

DWA provides municipal and recycled water service through two separate systems within its Service Area, which is generally southerly of Interstate 10. DWA's current Institutional Boundary and Service Area are shown on Figure 1 in Appendix F.

DWA is responsible for management of the water supply within its Institutional Boundary, as is CVWD within its Institutional Boundary, including artificial ground water recharge or replenishment to augment natural recharge or replenishment. Specifically, DWA makes imported water available to DWA and MSWD for water service within their respective municipal service areas by augmenting local ground water supplies.

2. Climate

DWA's Service Area lies within the Upper Coachella Valley. Climate within the Upper Coachella Valley is characterized by low humidity, high summer temperatures, mild dry winters, an average annual precipitation of about five and one half inches (most of which occurs in January, February, or March, except for summer thundershowers), and prevailing winds which are usually gentle but occasionally increase to velocities as high as 50 to 60 miles per hour or more. Midsummer temperatures average in excess of 100°F, with about 60°F average temperatures during the winter.

The average rainfall and maximum and minimum monthly temperatures, as well as monthly average evapotranspiration rates (ET_o), are shown in Table 2 below.

Month	Average Rainfall (inches)	Average Maximum Temperature (°F)	Average Minimum Temperature (°F)	Standard Monthly Average ET_o (inches)
Jan	1.12	69.6	42.0	1.59
Feb	1.01	73.5	45.2	2.20
Mar	0.60	79.4	48.6	3.66
Apr	0.17	86.9	54.0	5.08
May	0.05	94.4	60.1	6.83
June	0.07	103.1	66.7	7.80
July	0.20	108.3	74.8	8.67
Aug	0.30	106.9	74.1	7.81
Sept	0.35	101.9	67.9	5.67
Oct	0.24	91.6	59.2	4.03
Nov	0.47	78.7	48.8	2.13
Dec	0.94	70.1	42.0	1.59
Annual	5.51	88.7	56.9	57.06

Source: National Oceanic and Atmospheric Administration website (NOAA) (<http://www.wrcc.dri.edu/CLIMATEDATA.html>)

Due to the low annual rainfall and excessively high summer temperatures, large quantities of water are required for supplemental landscape irrigation, even during the cooler winter months.

3. Population

Population within DWA's Service Area (C/PS, the southwest portion of C/CC, and several small unincorporated areas along the western boundary) has increased from approximately 18,000 persons in 1961, when DWA was formed, to more than 68,000 persons in 2005.

C/PS contains the largest population within DWA's Service Area. The Palm Springs area has experienced tremendous growth since its beginnings during the late 1800s, in particular, the period from 1970 to the present, during which time the population more than doubled. The golf and tourist industries remain paramount to the area's economy, with continued growth in these areas expected.

Table 3 shows population projections within DWA's Service Area as well as population projections within DWA's Institutional Boundary (see Figure 1 in Appendix F). Population within DWA's Institutional Boundary includes the entire DWA Service Area, essentially all of the MSWD Service Area (including C/DHS), and certain adjacent unincorporated areas within Riverside County. The population estimates within DWA's Institutional Boundary were developed based on historic population data within DWA's Service Area in addition to population projections prepared by the Southern California Association of Governments (SCAG) and the Coachella Valley Association of Governments (CVAG). Figure 2 in Appendix F shows historic and projected population within DWA's Service Area, 1970 through 2030. Figure 3 in Appendix F shows a comparison of DWA's projected population with Riverside County's projected population, 2005 through 2030.

Table 3						
Population – Current and Projected						
	2005	2010	2015	2020	2025	2030
Population within DWA's Service Area	68,450	76,000	82,100	88,300	94,400	100,600
Population within DWA's Institutional Boundary	101,350	117,100	133,150	150,450	167,650	184,200

Existing development primarily occupies the floor of the Upper Coachella Valley and is situated in Palm Springs, Cathedral City, Palm Springs Oasis (commonly known as Palm Oasis), and Snow Creek Village. Future development will consist of infill within the local communities and expansion into canyons, coves, and mountainous areas.

4. Past Drought, Water Demand, and Conservation Information

Historically, droughts have had little effect on DWA's water supply. Since DWA relies primarily on ground water and has imported water for ground water replenishment, the droughts of 1965-1967, 1976-1977, and 1989-1992 had negligible effects on DWA's ability to supply water to its customers.

DWA has pioneered water conservation. Since the early 1970s, DWA has focused its conservation efforts on long-term solutions in areas of water-efficient landscaping, consumer education, and utilization of new technologies. In the mid-1970s, DWA established numerous affirmative water reduction programs that resulted in relatively uniform consumption, and therefore, generally level per capita production.

Per capita water production increased from 0.31 acre-feet per year (AF/yr) in 1940 to 0.77 AF/yr in 1970. Water production subsequently decreased to 0.73 AF/yr in 1980 before peaking at 0.83 AF/yr in 1990. Since 1990, per capita water production has ranged from 0.62 AF/yr to 0.77 AF/yr. The general consistency in per capita water production in the 1980s and 1990s is attributable to DWA's water conservation activities and measures.

The residents within DWA have a high commitment to quality of life and are active participants in resource and planning discussions held by DWA. Water conservation is one of several high priority policies actively implemented within DWA, and programs

such as water audits for large volume water users, residential water audits, landscape water audits, and water efficient landscape gardens are encouraged and well accepted.

Water deliveries to DWA consumers have been metered since the 1920s. In 1978, DWA constructed a new Operations Center using low water use fixtures in the building and low water use plants in the landscaping. It also developed and operated a low water use demonstration garden for public benefit. During the 1980s and 1990s, DWA constructed and expanded a water recycling plant, together with additional demonstration garden plantings. During the 1970s, 1980s, and 1990s, DWA joined with the local Resource Conservation District (Soil Conservation Service) in conducting water efficient ornamental plant research with both potable and recycled water, as well as selling low water use plants to the public. Since most water is used outdoors, up to 80 percent, DWA has concentrated in outdoor conservation measures.

SECTION II
WATER SOURCES (SUPPLY)

**SECTION II
WATER SOURCES (SUPPLY)**

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

10631(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...[to 20 years or as far as data is available.]

10631(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

10631(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.

10631(i) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and ground water, as a long-term supply.

A. WATER SUPPLY SOURCES

DWA's sources of supply include locally diverted surface water (which is diverted from streams in the San Jacinto Mountains), locally produced ground water (which is produced by potable water supply wells), imported State Water Project (SWP) water exchanged for Colorado River water pursuant to an exchange agreement among The Metropolitan Water District of Southern California (MWD), CVWD, and DWA, and recycled water (which is used only for irrigation). All imported and exchanged water is used to replenish or recharge the Upper Coachella Valley Ground Water Basin, particularly the Whitewater River and Mission Creek Subbasins.

Table 4 Current and Planned Water Supplies (AF/yr)						
Individual Water Supply Sources	2005	2010	2015	2020	2025	2030
Surface Water ⁽¹⁾	2,500	2,800	2,800	2,800	2,800	2,800
Natural Ground Water ⁽²⁾	7,250	7,250	7,250	7,250	7,250	7,250
Imported Ground Water ⁽³⁾	35,800	37,800	36,400	35,000	33,650	33,650
Non-Consumptive Return ⁽⁴⁾ :						
Ground Water	12,050	11,750	13,100	12,500	13,800	15,200
Recycled Water	2,850	6,000	6,000	8,000	8,000	8,000
Total	60,450	65,600	65,550	65,550	65,500	66,900
Grouped Water Supply Sources						
Surface Water	2,500	2,800	2,800	2,800	2,800	2,800
Ground Water	55,100	56,800	56,750	54,750	54,700	56,100
Recycled Water	2,850	6,000	6,000	8,000	8,000	8,000
Total	60,450	65,600	65,550	65,550	65,500	66,900

- (1) DWA surface diversions include diversions from Snow Creek, Falls Creek, Chino Creek North, and Chino Creek West, which are tributary to the Whitewater River.
- (2) Long term natural recharge within the Upper Whitewater River Subbasin is approximately 29,000 AF/yr (36,000 AF/yr natural inflow less 7,000 AF/yr natural outflow per USGS Water Resources Investigation 91-4142). DWA's share is approximately one-quarter of said recharge (7,250 AF/yr).
- (3) Colorado River water exchanged for SWP water. Of CVWD's and DWA's Table A allocation of SWP water, 7 percent is directed to the Mission Creek Subbasin and 93 percent is directed to the Whitewater River Subbasin. Approximately 25 percent is allocable to DWA for recharging the Upper Whitewater River Subbasin and the other 75 percent is allocable to CVWD for recharging the same Subbasin.
- (4) Non-consumptive return is approximately 35 percent of consumptive use (USGS Water Resources Investigation 91-4142). The consumptive use estimate is considered conservatively low.

B. SURFACE WATER

More than 90 percent of the source of supply for DWA's Service Area is derived from replenished ground water and recycled water, and less than 10 percent is derived from surface water. DWA secures surface water from diversions on Snow and Falls Creeks and Chino Creeks North and West. These creeks are all tributary to the Whitewater River. No other streams which are tributary to the Whitewater River are diverted for water supply.

DWA has licenses to divert 2,475 gallons per minute (5.5 cubic feet per second) from Snow Creek and 675 gallons per minute (1.5 cubic feet per second) from Falls Creek, 3,150 gallons per minute (7.0 cubic feet per second) from both streams, and an adjudicated right to divert 900 gallons per minute (2.0 cubic feet per second) from both Chino Creek North and Chino Creek West.

Table 5 Surface Water											
Source	2000	2001	2002	2003	2004	2005	2010	2015	2020	2025	2030
Surface Water ⁽¹⁾ (AF/yr)	2,470	2,403	1,986	2,366	2,639	2,500	2,800	2,800	2,800	2,800	2,800
Percent of Total Water Supply	5%	5%	4%	5%	6%	4%	4%	4%	4%	4%	4%

(1) DWA surface diversions include diversions from Snow Creek, Falls Creek, Chino Creek North, and Chino Creek West, which are tributary to the Whitewater River.

Surface water projections for 2010 through 2030 are based on DWA's average surface water diverted from 1977 through 2004. As noted in Table 5, surface water diverted from Snow Creek, Falls Creek, Chino Creek North, and Chino Creek West constitutes 100 percent of DWA's surface water supply, but it constitutes only 4 to 6 percent of DWA's entire municipal water supply.

C. GROUND WATER

1. Ground Water Production

DWA and CVWD both extract naturally and artificially replenished ground water from the Whitewater River Subbasin. DWA extracts water from the northerly portion of the Subbasin and CVWD extracts water from the mid and southerly portions of the Subbasin. CVWD and DWA jointly replenish the Subbasin.

Except for DWA's surface water diversions, all water produced within the Whitewater River Subbasin is ground water. Imported water is artificially recharged to augment natural ground water replenishment. The Whitewater River Subbasin (Fingal Point to Point Happy) contains an estimated 10 million AF in storage (USGS 1971 Open-File Report "Analog Model Study of the Ground-Water Basin of the Upper Coachella Valley, California"). CVWD's and DWA's annual ground water extractions approximate two percent of ground water in storage.

Combined CVWD and DWA ground water extractions and surface water diversions within the Whitewater River Subbasin increased from approximately 93,000 AF in 1966 (1965 through 1967 averaged) to 187,000 AF in 1990, then decreased to approximately 174,000 AF in 1991 before increasing again to approximately 187,000 AF in 1997 and then increasing to 208,285 AF in 1999.

Annual production within the Whitewater River Subbasin (ground water extractions plus surface water diversions) has averaged 210,000 AF/yr for the past five years (2000-2004). Based on past ground water production or extractions, approximately 25 percent of annual water production within the Whitewater River Subbasin occurs within DWA and the remaining 75 percent occurs within CVWD. For projection purposes through 2030, this relationship has been assumed to remain constant.

Table 6											
Ground Water											
Source	2000	2001	2002	2003	2004	2005⁽¹⁾	2010	2015	2020	2025	2030
Whitewater River Subbasin (AF/yr)	40,011	39,911	41,457	39,895	41,244	55,100	56,800	56,750	54,750	54,700	56,100
Percent of Total Water Supply	88%	88%	90%	89%	88%	91%	87%	87%	84%	84%	84%

⁽¹⁾ The increase in ground water for 2005 is attributable to higher SWP water deliveries in 2005 than in 2004.

2. Ground Water Recharge

The Whitewater River Subbasin is recharged naturally with runoff from the San Jacinto, Santa Rosa, and San Bernardino Mountains. Per USGS Water Resources Investigation 91-4142, long-term natural recharge (natural inflow less natural outflow) to the Whitewater River Subbasin is approximately 29,000AF/yr. Since the 1950s (if not earlier), groundwater extractions in the Whitewater River Subbasin have exceeded the long-term natural recharge, a condition termed *overdraft*, resulting in declining ground water levels.

In recognition of the overdraft conditions in the Whitewater River Subbasin and to arrest or offset these conditions, DWA and CVWD secured SWP entitlements (now known as "allocations") in 1962 and 1963, respectively. To delay costly aqueduct facilities needed to convey SWP water from the California Aqueduct to the Coachella Valley, DWA and CVWD entered into water exchange contracts with MWD in 1967, which were amended in 1972, to deliver through 1990 Colorado River water to the Upper Coachella Valley in exchange for SWP water delivered to MWD at San Bernardino. In 1973, they jointly commenced a program of artificial recharge of the Subbasin using imported water. The imported water is infiltrated in the Whitewater River spreading grounds (recharge basins) near Windy Point, from which it percolates to the ground water basin underlying the spreading area.

DWA and CVWD entered a water management agreement in 1976, which was amended in 1992, to jointly manage the Whitewater River Subbasin, importing sufficient SWP or Colorado River water to jointly recharge or replenish the Whitewater River Subbasin. In 1983, DWA and CVWD extended their water exchange agreements with MWD to 2035 and, in 1984, they entered advance delivery agreements with MWD to permit MWD to

store excess Colorado River water within the Whitewater River Subbasin for later exchange for DWA and CVWD SWP allocations. In 2003, DWA, CVWD, and MWD entered into the 2003 exchange agreement which clarifies and augments the earlier exchange and advance delivery agreements and transfers, with certain callback provisions, a portion of MWD's SWP allocation.

From 1978 through 1980, the ground water table underlying the spreading basins reached its lowest levels. The ground water table reached its highest levels during 1986 as a result of artificial recharge from both exchange and advance deliveries of Colorado River water pursuant to exchange and advance delivery agreements with MWD. As a result of continuing ground water recharge, the water table underlying DWA's Service Area has been maintained at relatively stable levels.

In addition to natural and artificial recharge, ground water production is offset by *non-consumptive return*, which is water returned to the aquifer after use (for example, irrigation water percolating into the ground, and treated wastewater discharged to percolation ponds). Per USGS Water Resources Investigation 91-4142, consumptive use in the Whitewater River Subbasin is estimated to be approximately 65 percent of annual water production, which results in non-consumptive return of approximately 35 percent.

The Whitewater River and Mission Creek Subbasins are capable of meeting the demands that will be placed on them, provided they continue to be replenished with sufficient quantities of imported water to meet future needs. Pursuant to the above agreements, ground water recharge of the Upper Coachella Valley Ground Water Basin, from 1973 through 2005, has approximated 1,867,000 AF, about 1,830,000 AF in the Whitewater River Subbasin and about 37,000 AF in the Mission Creek Subbasin.

D. IMPORTED WATER

As stated in the previous section, DWA and CVWD have been importing water to replenish the Whitewater River Subbasin since 1973. The two agencies entered into a joint Water Management Agreement in 1976 (amended 1992), which formalized the replenishment program and provided a mechanism for benefit assessment. The program was implemented in 1978. A similar agreement was implemented in 2002 for the Mission Creek Subbasin.

The Water Management Agreement calls for maximum importation of SWP Contract Table A water allocations (formerly known as "entitlements") by DWA and CVWD for replenishment of ground water basins or subbasins within defined Water Management Areas. The Agreement also requires collection of data necessary for sound management of all water resources within the same Water Management Areas.

CVWD and DWA are State Water Contractors with a combined maximum Table A allocation of SWP water of 171,100 AF/yr through 2010 (CVWD's allocation is 121,100 AF/yr and DWA's allocation is 50,000 AF/yr) and 187,100 AF/yr thereafter through 2035 (CVWD's allocation is 133,100 AF/yr and DWA's allocation is 54,000 AF/yr). In addition, CVWD and DWA have and continue to secure surplus water in addition to their Table A allocations, when available.

E. WATER EXCHANGES/TRANSFERS

CVWD and DWA do not currently have facilities which would permit direct delivery of SWP water to the Upper Coachella Valley. To avoid the multi-million dollar cost of constructing an aqueduct from the SWP to the Upper Coachella Valley, CVWD and DWA entered into water exchange agreements with MWD to deliver Colorado River Aqueduct water to the Upper Coachella Valley Ground Water Basin.

Since 1973, MWD has taken CVWD's and DWA's SWP allocations in exchange for equivalent quantities of Colorado River water. The exchanged Colorado River water is delivered to ground water recharge facilities as described above.

In addition, CVWD and DWA entered into advance delivery agreements with MWD allowing MWD to deliver and store ("bank") excess Colorado River water in the Upper Coachella Valley Ground Water Basin during periods of surplus water in the Colorado River Basin for subsequent exchange for SWP water when needed by MWD.

To further offset overdraft conditions, since 1996, CVWD and DWA have secured surplus SWP water, whenever available, to supplement the exchange deliveries of Table A water. From 1996 through 2004, CVWD and DWA jointly obtained 288,060 AF of surplus water under the DWR/SWP Turn-Back Water Pool Program, which was exchanged for a like quantity of Colorado River water delivered to the ground water basin. These additional supplies are not expected to be consistently available in the future and therefore cannot be relied upon to provide a

reliable long-term source of water to the Upper Coachella Valley, at least in the quantities formerly available.

Artificial recharge of Colorado River water, equivalent to SWP Table A and surplus water deliveries (exchange and advance deliveries), has approximated 1,867,000 AF, (approximately 1,830,000 AF delivered to the Whitewater River Subbasin from 1973 through 2005 and approximately 37,000 AF delivered to the Mission Creek Subbasin from 2002 through 2005).

F. RECYCLED WATER

Part of DWA's irrigation supply formerly derived from stream water or ground water is now being derived from recycled water. Recycled water use reduces demands on the municipal water supply to the extent that irrigation deliveries are diverted from the municipal water supply to the recycled water system. Recycled water used for irrigation water deliveries is currently equal to slightly more than 5 percent of the municipal water supply. Recycled water use is projected to equal approximately 9 percent of the municipal water supply by the year 2006.

The use of recycled water plays a key role in DWA's Basin Management Program as it conserves and protects the valuable ground water supply. To further expand the use of recycled water, DWA is actively pursuing the expansion of its existing recycled water customer base. Refer to the Section VIII: Water Recycling for a detailed discussion regarding DWA's water recycling facilities.

Table 7 Recycled Water											
Source	2000	2001	2002	2003	2004	2005⁽¹⁾	2010	2015	2020	2025	2030
Recycled Water (AF/yr)	2,900	3,018	2,875	2,797	2,922	2,850	6,000	6,000	8,000	8,000	8,000
Percent of Total Water Supply	7%	7%	6%	6%	6%	5%	9%	9%	12%	12%	12%

⁽¹⁾ The increase in ground water for 2005 is attributable to higher SWP water deliveries in 2005 than in 2004.

G. OPPORTUNITIES FOR DESALINATED WATER

DWA does not currently have direct access to ocean water or a significant quantity of brackish ground water. There is a limited and questionable supply of brackish water at the downstream (lower or southeasterly) end of the Mission Creek Subbasin; however, extraction of such brackish

ground water would deplete the same ground water subbasin from which usable ground water is extracted. At this time, DWA has no plans to extract and treat any brackish water. Therefore, at this time, desalinated water is not a probable source of water supply for DWA.

H. FUTURE WATER SUPPLY PROJECTS

CVWD and DWA are exploring possible future joint water supply projects to increase water supply for the Upper Coachella Valley; however, none have advanced beyond the concept stage. An aqueduct from the California Aqueduct to the Upper Coachella Valley is now under consideration.

In order to meet increasing water system demands, DWA's existing potable water system will have to be expanded and improved. Additional well pumping plants will need to be constructed for water supply purposes as demands increase, and additional recycling facilities will have to be constructed to satisfy projected increases in recycled water demand. Routinely, these facilities will continue to be constructed as needed pursuant to DWA's Domestic Water System General Plan dated 1998.

SECTION III
RELIABILITY PLANNING

**SECTION III
RELIABILITY PLANNING**

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

10631 (c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable.

10631 (c) 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 replace that source with alternative sources or water demand management measures, to the extent practicable.

10631 (c) Provide data for each of the following:

(1) An average water year, (2) A single dry water year, (3) Multiple dry water years.

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:

10632 (b) An estimate of the minimum water supply available during each of the next three-water years based on driest three-year historic sequence for the agency's water supply.

A. RELIABILITY

DWA recognizes that throughout history, water availability and quality have been the principal factors in dictating a population's survival, and that a reliable, high-quality source of water is essential for survival and well-being.

DWA is acutely aware of the vital role water has had in the development of the Palm Springs area as a world renowned destination resort. Clearly, a reliable, abundant, high-quality water supply has been the most important factor in the success of the Palm Springs area. DWA's goal is to provide its customers with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible manner.

DWA relies on local water sources augmented by imported water and recycled water to meet the needs of its customers. As discussed in the preceding section, more than 90 percent of the water supply is derived from ground water replenished by imported water together with recycled water derived from the municipal wastewater treatment plant.

Due to DWA's reliance on local water sources and its ability to secure imported water and store it within the Whitewater River Subbasin, short-term drought situations have historically had a negligible effect on DWA's ability to supply water to its customers. Since the surface water sources are fed with water originating in the local mountains, they are inherently more susceptible to seasonal variation and drought situations.

The majority of DWA's Service Area depends exclusively on ground water, while the northwest portion is supplied by a mix of ground water and surface water. A small group of relatively isolated single-family, minimally landscaped residences (Snow Creek Village) are supplied solely with surface water. If delivery of surface water to these residences were interrupted or reduced, demand could be met in the interim through stored water in reservoirs dedicated to that area. In the unlikely event that water were to become unavailable, a supply would have to be trucked in from the remainder of DWA's water system.

As with any water system, reliability has the potential to be affected by earthquakes, power outages, floods, and other potentially devastating occurrences. Emergency preparedness planning is therefore a key part of DWA's operations. DWA has coordinated internally with all departments and with local entities to formulate an Emergency Preparedness Plan. The Plan outlines specific courses of action DWA personnel will follow in the event of a natural disaster or breach in facility security. In the Plan, all areas of emergency preparedness are addressed, with emphasis on employee response and delivering safe water to DWA's customers as quickly as possible.

Additionally, earthquake valves have been installed on approximately half of DWA's 21 above-ground steel reservoirs to conserve stored water supply in the event of a pipeline break resulting from an earthquake. Additional earthquake valve installations will be constructed as funds become available. Aging pipelines are also replaced as part of an ongoing mainline replacement program to further enhance the reliability of the system. All new facilities are designed taking into consideration the potential for earthquakes, power shortages, and flooding potential. In the event of an interruption in the ability to serve recycled water customers, potable water is made available to all recycled water users.

DWA has adopted an ordinance detailing restrictions in water supply use during emergencies.

On October 18, 1988, DWA adopted Ordinance No. 45, An Ordinance of the Board of Directors of the Desert Water Agency Restricting Water Use During Water Supply Emergencies (refer to Appendix B). This Ordinance provides a water supply plan for four stages of water supply emergencies.

Stage No. 1	Normal Conditions: Voluntary conservation measures.
Stage No. 2	Water Shortage Alert: Mandatory conservation measures.
Stage No. 3	Water Shortage Warning: Stronger mandatory conservation measures.
Stage No. 4	Mandatory Compliance-Water Shortage Emergency: Severe water use prohibitions.

B. FREQUENCY AND MAGNITUDE OF SUPPLY DEFICIENCIES

Although Southern California has experienced serious droughts during the past twenty years, DWA has not experienced any actual supply deficiency. Droughts have historically had a negligible effect on DWA's ability to supply water to customers, since DWA relies on local water sources and has imported and stored water within the Whitewater River Subbasin to meet expected demands.

C. PLANS TO ASSURE A RELIABLE WATER SUPPLY

DWA is taking the following actions to ensure overall water supply reliability for its customers:

1. Ground Water Replenishment and Assessment Program

DWA has implemented Ground Water Replenishment and Assessment Programs for the Whitewater River and Mission Creek Subbasins (see Section II). These programs were established to augment ground water supplies and arrest or retard declining water table conditions within the Upper Coachella Valley, specifically the Whitewater River Subbasin within DWA's Service Area and the Mission Creek Subbasin within DWA's boundary and MSWD's Service Area. The intention of these programs is to optimize and protect the use of ground water in addition to providing sound management of the ground water supplies.

2. Water Recycling

DWA will continue to increase recycling efforts, with major environmental and municipal reuse projects planned for implementation in the next five (5) years.

These efforts, in combination with continuing work to improve planning for imported water supply development will ensure DWA's ability to meet the projected water demands of its customers.

D. RELIABILITY COMPARISON

Table 7 details estimated water supply projections associated with the Whitewater River Subbasin, which includes surface water diversions, ground water recharge, non-consumptive return, and recycled water. For further information on the data, refer to Three-year Minimum Supply and Water Shortage Contingency Plan sections.

As previously stated, the majority of the water supply is obtained from local ground water stored in a large aquifer, the Whitewater River Subbasin. In addition, the aquifer is artificially recharged with imported water from MWD pursuant to the 2003 Exchange Agreement among CVWD, DWA, and MWD (refer to Transfer or Exchange Opportunities, Part F. herein). Historical well level data supports DWA's ability to supply water to its customers in the event of a short-term drought or short-term discontinuance of the imported water supply.

The Urban Water Management Planning Act requires a description of a water provider's supply reliability and vulnerability for an average (normal) water year, a single dry year, or multiple dry years. Such analysis is clearly relevant to water systems that rely on and are supplied primarily by surface water. DWA's system, however, is supplied primarily by ground water. Therefore, in Tables 7 and 8, average/normal, single, and multiple dry water year data primarily applies to surface water. The following tables address supply reliability during a normal water year, a single dry water year, and multiple dry water years. For purposes of this section, a normal water

year, single dry water year, and multiple dry year period are defined below:

- **Normal Water Year** is defined as a year in the historical sequence that most closely represents median runoff levels and patterns.
- **Single Dry Water Year** is defined as the lowest annual runoff for a watershed.
- **Multiple Dry Water Year Period** is defined as the lowest average runoff for a consecutive multiple year period (three years or more).

Table 8 Supply Reliability (AF/yr)						
Source	Normal Water Year	Single Dry Water Year	Multiple Dry Water Years			
			Year 1	Year 2	Year 3	Year 4
Surface Water ⁽¹⁾	2,800	1,350	1,500	1,500	1,500	1,500
Natural Ground Water ⁽²⁾	7,250	6,000	6,000	5,500	5,000	4,500
Imported Water for Ground Water ⁽³⁾	35,600	800	8,100	8,100	6,700	6,700
Non-Consumptive Return ⁽⁴⁾ :						
Ground Water	13,000	13,000	10,650	10,900	11,200	11,450
Recycled Water	6,000	6,000	6,000	6,000	6,000	6,000
Ground Water Storage		37,500	32,400	32,650	34,250	34,500
Total	64,650	64,650	64,650	64,650	64,650	64,650
Percent of Normal	100%	100%	100%	100%	100%	100%

⁽¹⁾ DWA surface diversions include diversions from Snow Creek, Falls Creek, Chino Creek North, and Chino Creek West, which are tributary to the Whitewater River.

⁽²⁾ Long term natural recharge within the Upper Whitewater River Subbasin is approximately 29,000 AF/yr (36,000 AF/yr natural inflow less 7,000 AF/yr natural outflow per USGS Water Resources Investigation 91-4142). DWA's share is approximately one-quarter of said recharge (7,250 AF/yr).

⁽³⁾ Colorado River water exchanged for SWP water. Of CVWD's and DWA's Table A allocation of SWP water, 7 percent is directed to the Mission Creek Subbasin and 93 percent is directed to the Whitewater River Subbasin. Approximately 25 percent is allocable to DWA for recharging the Upper Whitewater River Subbasin and the other 75 percent is allocable to CVWD for recharging the same Subbasin.

⁽⁴⁾ Non-consumptive return is approximately 35 percent of consumptive use (USGS Water Resources Investigation 91-4142). The consumptive use estimate is considered conservatively low.

Table 9 Basis of Water Year Data		
Water Year Type	Base Year(s) ⁽¹⁾	Historic Sequence
Normal Water Year	1996	1977-2004
Single-Dry Water Year	1988	
Multiple-Dry Water Years	1989-1992	

⁽¹⁾ Base year(s) identified and defined using USGS gauging station data and DWA's historic surface water diversion data.

The water supply within DWA is not directly affected by short-term fluctuations in hydrology (i.e. drought conditions), since more than 90 percent of DWA's water supply is from ground water and recycled water. Due to DWA's reliance on local water sources and its ability to import water and store it within the Whitewater River Subbasin, short-term drought situations have historically had a negligible effect on the ability to supply water to customers. Since the surface water sources are fed with water originating in the local mountains, they are inherently more susceptible to seasonal variation and drought situations. These variations are presented above in Table 8.

The challenges that DWA faces are long-term in nature, as opposed to short-term shortage situations, due to the large supply of stored ("banked") ground water. While there is sufficient ground water in storage to weather short-term droughts, it will not sustain the current population indefinitely due to the limited quantity of natural recharge. Continued water importation, water recycling, water conservation, and long-range planning are necessary to meet current and future population requirements without depleting the ground water in storage.

E. 2005 THROUGH 2008 WATER SUPPLY

DWA has never experienced an actual water supply deficiency since more than 90 percent of DWA's domestic water supply is derived from ground water and DWA has the ability to import water and store it within the Whitewater River Subbasin. Short-term droughts have historically had negligible effects on DWA's ability to supply water to its customers since DWA can secure needed water supplies from ground water in storage, if necessary.

DWA's annual water supply available in 2005 together with minimum water supply available for the three subsequent years based on multiple dry year history is set forth in Table 10. The 2005 year supply, which excludes ground water from storage, is about 60,450 AF, about 13,000 AF more than demand, estimated to be 45,400 AF (Table 14). In contrast, the 2006 through 2008 multiple dry year supplies require ground water extractions of about 21,000 AF, 22,000 AF, and 25,000 AF, respectively, from ground water in storage to meet demands. Such ground water extractions would reduce ground water in storage about one-half of one percent when offset by excess supplies in 2005.

Table 10				
Three-Year Estimated Minimum Water Supply				
(AF/yr)				
Source	2005	2006	2007	2008
Surface Water ⁽¹⁾	2,500	1,500	1,500	1,500
Natural Ground Water ⁽²⁾	7,250	6,000	5,500	5,000
Imported Ground Water ⁽³⁾	35,800	8,100	8,100	6,700
Non-Consumptive Return ⁽⁴⁾ :				
Ground Water	12,050	10,650	10,900	11,200
Recycled Water	2,850	6,000	6,000	6,000
Ground Water in Storage		21,300	22,300	24,700
Total	60,450	53,550	54,300	55,100

⁽¹⁾ DWA surface diversions include diversions from Snow Creek, Falls Creek, Chino Creek North, and Chino Creek West, which are tributary to the Whitewater River.

⁽²⁾ Long term natural recharge within the Upper Whitewater River Subbasin is approximately 29,000 AF/yr (36,000 AF/yr natural inflow less 7,000 AF/yr natural outflow per USGS Water Resources Investigation 91-4142). DWA's share is approximately one-quarter of said recharge (7,250 AF/yr).

⁽³⁾ Colorado River water exchanged for SWP water. Of CVWD's and DWA's Table A allocation of SWP water, 7 percent is directed to the Mission Creek Subbasin and 93 percent is directed to the Whitewater River Subbasin. Approximately 25 percent is allocable to DWA for recharging the Upper Whitewater River Subbasin and the other 75 percent is allocable to CVWD for recharging the same Subbasin.

⁽⁴⁾ Non-consumptive return is approximately 35 percent of consumptive use (USGS Water Resources Investigation 91-4142). The consumptive use estimate is considered conservatively low.

Since DWA's goal is to provide its customers with adequate and reliable supplies of high-quality water to meet present and future needs, DWA strives to ensure that customer demand can be met at all times. CVWD and DWA jointly recharge the Whitewater River Subbasin in years of surplus water supplies to prepare or recover from dry years. Therefore, in the event that the next three years are not dry, surplus water supplies will be stored within the ground water basin for future use.

F. TRANSFER OR EXCHANGE OPPORTUNITIES

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

10631 (d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

Currently, DWA does not have facilities to take direct delivery of SWP water. Since the conveyance facilities needed to convey SWP water to DWA and CVWD have not been constructed, DWA and CVWD exchange their SWP water allocations for Colorado River water

delivered by MWD through the Colorado River Aqueduct. MWD accepts DWA and CVWD SWP allocations from the California Aqueduct, East Branch, in San Bernardino.

The water discharged from the Colorado River Aqueduct flows along the Whitewater River channel to recharge basins to augment the Whitewater River Subbasin, and by pipeline to recharge basins to augment the Mission Creek Subbasin. Since 1973, DWA and CVWD have imported Colorado River water to recharge the Whitewater River Subbasin, and since 2002, DWA and CVWD have imported Colorado River water to recharge the Mission Creek Subbasin, both for the purpose of augmenting natural recharge.

In 2003, CVWD and DWA available Table A allocations were 33,000 AF and 38,100 AF, respectively, or 71,200 AF combined.

Pursuant to the 2003 Exchange Agreement among CVWD, DWA, and MWD, CVWD and DWA also obtained 100,000 AF/yr of additional Table A allocations (88,100 AF/yr for CVWD and 11,900 AF/yr for DWA). MWD has the option to call-back (or recall) the annual Table A allocation of 100,000 AF (in 50,000 AF increments) during periods of limited or low water supply conditions. Regardless, the 2003 Exchange Agreement provides CVWD and DWA the opportunity to secure increased quantities of surplus water in addition to increased quantities of Table A water during periods of normal or high water supply conditions.

Currently and through 2009, the maximum Table A water allocation for CVWD and DWA combined is 171,100 AF/yr. CVWD and DWA are currently securing an additional 16,000 AF/yr (12,000 AF/yr for CVWD and 4,000 AF/yr for DWA) from Berrenda Mesa Water District through the Kern County Water Agency, to become effective from 2010 and through 2035, thus increasing the combined maximum Table A water allocation to 187,100 AF for years 2010 through December 31, 2035, provided the transfer is completed.

Pursuant to a letter titled, "Implementation of the 2003 Exchange Agreement", during calendar years 2004 through and including 2009 (Interim Period), MWD shall deliver at least 17,000 AF to CVWD and DWA (12,094 AF/yr for CVWD and 4,906 for DWA) in any year when the SWP Table A allocation as of May 1 is at least 50 percent. During the Interim Period, when SWP Table A allocation is less than 50 percent, MWD is only obligated to deliver a quantity of water equal to 50 percent of the combined Table A quantity of SWP water allocated to CVWD and

DWA for that year. However, MWD is obligated to deliver a minimum of 100,000 AF during the Interim Period.

Table 11 Projected Table A Allocations (AF/yr)				
Year	CVWD/DWA Table A Allocation (AF/yr)	DWR's Projected SWP Table A Delivery		DWA's Share of Projected Delivery to Whitewater River Subbasin (AF/yr)
		Fraction	AF/yr	
2005	171,100	0.90	154,000	35,800
2010	187,100	0.87	162,450	37,750
2015	187,100	0.84	156,500	36,400
2020	187,100	0.81	150,550	35,000
2025	187,100	0.77	144,650	33,650
2030	187,100	0.77	144,650	33,650

Table 11 above sets forth projected Table A water deliveries based on studies performed by DWR. DWA is responsible for providing artificial recharge to both the Whitewater River and Mission Creek Subbasins, even though DWA only extracts water from the Whitewater River Subbasin for use within its Service Area. Based on 2002 through 2004 production, ground water extractions from the Mission Creek Subbasin comprised approximately 7 percent of the combined production of the Whitewater River and Mission Creek Subbasins. This percentage of ground water extraction serves as the basis for the distribution of imported recharge water to the two subbasins. The projected delivery to the Whitewater River Subbasin is approximately 93 percent of the projected Table A delivery for the respective year. Approximately 25 percent of Whitewater River Subbasin allocation is used by DWA to recharge the Upper Whitewater River Subbasin and the remaining 75 percent is used by CVWD to recharge the same Subbasin.

G. WATER QUALITY IMPACTS ON RELIABILITY

Law 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.

As mentioned previously, CVWD and DWA exchange their Table A allocations of State Water Project (SWP) water for Colorado River water to augment the Whitewater River Subbasin. Colorado River water is generally of good quality, however, Colorado River water has a

relatively higher total dissolved solids (TDS) concentration (greater than 500 milligrams per liter) than native ground water (less than 500 milligrams per liter).

TDS consists of minerals and salts dissolved in water, which acts as an indicator of potential concerns. The California Department of Health Services has established a secondary maximum contaminant level (MCL) of 1,000 milligrams per liter for TDS, with a recommended maximum level of 500 milligrams per liter. TDS concentration is a secondary drinking water standard and is therefore regulated for aesthetic purposes and is not a health hazard. TDS is not expected to affect the reliability of the ground water supply.

As a result of contamination from ammonium perchlorate manufacturing facilities in Nevada, perchlorate levels have been found in Colorado River water. Perchlorate is a natural occurring and man-made material. Currently, there is no federal or state drinking water standard (MCL) for perchlorate. In 2004, the Office of Environmental Health Hazard Assessment (OEHHA) established a 6 micrograms per liter public health goal (PHG). The PHG is defined as the concentration of contaminant in drinking water which does not pose a significant risk to health. Within DWA's Service Area, very low levels of perchlorate (<1 microgram per liter) have been detected in nearly every well, however, perchlorate concentrations are well below the PHG and are expected to continually decrease over time. The presence of perchlorate in Colorado River water is not expected to affect the reliability of the ground water supply.

The surface water and ground water that DWA delivers to its customers is of high quality and complies with Safe Drinking Water Standards without any treatment, except disinfection, where needed. Surface water, from a controlled watershed, is disinfected. Ground water, with few exceptions, such as during well construction and rehabilitation, is not disinfected since the ground water is naturally filtered and the wells are securely sealed from contaminants. The water that DWA provides meets or exceeds all guidelines and standards established by the USEPA and the California Department of Health Services. DWA regards adequate, high-quality water a primary goal to ensure public health, safety, and community well-being.

SECTION IV
WATER USE PROVISIONS

**SECTION IV
WATER USE PROVISIONS**

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

10631(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, ground water recharge, or conjunctive use, or any combination thereof; and (I) Agricultural.

(2) The water use projections shall be in the same 5-year increments to 20 years or as far as data is available.

A. PAST, CURRENT, AND PROJECTED WATER USE

Past, current, and projected annual water deliveries from 2000 through 2030 are set forth in Table 12. As shown therein, annual projected domestic water use within DWA's Municipal Service Area is projected to increase from approximately 40,000 AF presently to approximately 62,000 AF in 2030. Figure 4 in Appendix F shows historic and projected water deliveries (AF/yr) and water meters (each) from 1980 through 2030.

Past, current, and projected additional water uses and losses from 2000 through 2030 are set forth in Table 13. As shown therein, annual projected additional water uses and losses within DWA's Municipal Service Area are projected to increase from approximately 5,500 AF in 2005 to nearly 12,000 AF in 2030. Past, current, and projected annual Total Water Use (Total Water Production) is set forth in Table 14; it is expected to increase from about 45,400 AF to about 74,300 AF in 2030.

Outdoor water use accounts for an estimated 60 percent to 80 percent of the residential and commercial water use within the DWA Service Area. With the unique climate, extensive landscape irrigation requirements, and destination resort atmosphere, the average annual water consumption per capita is considerably higher than that of most Southern California areas outside the Coachella Valley, on the order of 1½ to 2 times.

From 1999 through 2003, DWA added new connections at a rate of about 1 percent per year. However, during the 2003-2004 fiscal year, DWA served 20,414 active services exclusive of fire service, an increase of 613 active services, or 3.10 percent over the 2002-2003 fiscal year. Average water consumption per active service for the 2003-2004 fiscal year was approximately 1,900 gallons per day (0.005 AF per day).

DWA enjoys very low unaccounted-for water quantities, under 5 percent for decades and just 2.6 percent in 2004 (unaccounted-for water is the difference between production meter records and customer meter records, and water loss due to unauthorized connections and system leaks, as well as inaccuracies of production and consumption meters). DWA estimates or measures water for fire fighting, fire hydrant flow testing, water main flushing, reservoir cleaning, and identifiable system leaks and therefore excludes these quantities from unaccounted for water.

Table 12 Past, Current, and Projected Water Deliveries (AF/yr)										
Year	Metered/ Unmetered	Water Use Sectors	Single Family	Multi- Family	Com- mercial	Indus- -trial	Inst/ Gov	Land- scape	Agricul- -tural	Total
2000	Metered	# of accounts	16,445	0	2,545	0	280	0	0	19,270
		Deliveries	27,220	0	12,030	0	1,900	0	0	41,150
2005	Metered	# of accounts	17,770	0	2,680	0	300	0	0	20,750
		Deliveries	26,230	0	11,940	0	1,780	0	0	39,950
2010	Metered	# of accounts	19,650	0	3,040	0	330	0	0	23,020
		Deliveries	31,180	0	13,750	0	2,170	0	0	47,100
2015	Metered	# of accounts	21,240	0	3,280	0	360	0	0	24,880
		Deliveries	33,700	0	14,860	0	2,340	0	0	50,900
2020	Metered	# of accounts	22,830	0	3,530	0	390	0	0	26,750
		Deliveries	36,250	0	15,980	0	2,520	0	0	54,750
2025	Metered	# of accounts	24,425	0	3,770	0	410	0	0	28,600
		Deliveries	38,760	0	17,090	0	2,700	0	0	58,550
2030	Metered	# of accounts	26,030	0	4,020	0	450	0	0	30,500
		Deliveries	41,300	0	18,200	0	2,900	0	0	62,400

Note: All of DWA's connections are metered.

Table 13 Additional Water Uses and Losses (AF/yr)							
Water Use	2000	2005	2010	2015	2020	2025	2030
Water Use by DWA	250	250	300	300	300	300	300
Construction Water for Dust Mitigation During Construction	350	1,900	2,000	2,000	2,000	2,000	2,000
Recycled Water (Landscape)	2,900	2,850	6,000	6,000	8,000	8,000	8,000
Unaccounted-For System Losses	750	450	1,250	1,350	1,450	1,550	1,600
Total	4,250	5,450	9,550	9,650	11,750	11,850	11,900

Table 14							
Total Water Use							
(AF/yr)							
Water Use	2000	2005	2010	2015	2020	2025	2030
Sum of Tables 12 and 13	45,400	45,400	56,650	60,550	66,500	70,400	74,300

1. Residential Sector

Single-family residential customers constitute the majority of DWA's customers with each average service connection serving 3.3 persons. The residential sector is growing steadily each year, and growth is expected to continue through 2030.

2. Commercial Sector

DWA has a complex mix of commercial customers, ranging from family restaurants, insurance offices, and gas stations to shopping centers, high-volume restaurants, and other facilities serving the visitor population. The commercial sector is growing steadily each year, and some growth is expected to continue to occur over the next several years. Businesses for the growing tourist industry are also contributing. This trend is expected to continue through 2030.

3. Industrial Sector

DWA serves a small industrial sector, primarily centered on light manufacturing. The industrial sector has not grown much in the last decade or so, and is not expected to increase significantly in the next 25 years. The industrial sector is considered part of the commercial sector as far as water service is concerned.

4. Institutional/Governmental Sector

DWA has a stable institutional/governmental sector, primarily local government, parks, schools, and other types of public facilities. The institutional/governmental sector, with the exception of schools, is not expected to increase significantly over the next 25 years.

5. Landscape/Recreational Sector

Currently, DWA utilizes recycled water for irrigation of large turf areas, such as golf courses and public parks. Landscape and recreational customer demand is expected to increase gradually over the next 25 years. Increased efficiency and use of recycled water at existing golf courses, public parks, and other facilities should help offset new demand resulting from projected increases in this sector.

Currently, recycled water use approximates 3,000 AF/yr; however, three additional recycled water use sites are proposed for 2006; they will increase recycled water use significantly. DWA plans to continue actively pursuing the expansion of its existing recycled water customer base and it is anticipated that with DWA's proactive approach to obtaining new customers, four additional locations will be served with recycled water prior to 2010.

SECTION V
SUPPLY AND DEMAND COMPARISON PROVISIONS

**SECTION V
SUPPLY AND DEMAND COMPARISON PROVISIONS**

Law 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 the state, regional, or local agency population projections within the service area of the urban water supplier.

As detailed in Section III, Reliability Planning, more than 90 percent of the domestic and irrigation water supply for DWA's Municipal Service Area is derived from ground water from the Whitewater River Subbasin and recycled water from the recycled water treatment plant, and less than 10 percent is derived from surface water (Snow Creek, Falls Creek, Chino Creek North, and Chino Creek West). Domestic requirements are met with surface water and ground water; irrigation requirements are met through the use of ground water and recycled water.

Due to its size, the Whitewater River Subbasin, which has been historically recharged from natural runoff, and which has also been recharged with imported water since 1973, is capable of meeting demands placed on it during normal or dry years. It will continue to meet such demands, provided the ground water basin continues to be replenished with sufficient quantities of imported water to meet future needs.

The following tables (Tables 15 through 17) provide comparisons of current and projected water supply and demand under various conditions of normal and dry water years. The tables indicate that in normal and dry water years, DWA has sufficient water to meet its customers' needs through 2030. Generally, through the 25-year period from 2005 to 2030, ground water in storage will not be reduced under normal and single dry water year conditions; however, under multiple dry water year conditions, ground water in storage may be slightly reduced, less than 1 percent of ground water in storage, depending on non-consumptive return.

"Non-Consumptive Return" refers to water returned to the aquifer after use (for example, irrigation water percolating into the ground, and treated wastewater discharged to percolation ponds). Per USGS Water Resources Investigation 91-4142, consumptive use in the Whitewater River Subbasin is estimated to be approximately 65 percent of annual water production, which results in non-consumptive return of approximately 35 percent. There is evidence that non-consumptive return is now significantly higher

than 35 percent, perhaps 40 percent or 45 percent. The non-consumptive return proportion of developed water is now being re-evaluated in light of current ground water basin conditions and operations.

In the far right columns of Tables 15 through 17 ("Supply Less Demand"), a negative value indicates the extraction of stored ground water in excess of replenishment, which would (if cumulative) result in decreased ground water in storage in the Whitewater River Subbasin, which contains a reported 10 million AF in ground water storage.

A. NORMAL WATER YEAR

Table 15 provides a comparison of water supply and demand for normal water years through 2030. Note that water recycling increases significantly in the years 2006 and 2020, with corresponding decreases in ground water recharge from non-consumptive return (because water recycling reduces the quantity of treated wastewater that is discharged to percolation basins). Also, note that ground water in storage is increased nearly 60,000 AF during the 25-year period based on non-consumptive return of 35 percent. If non-consumptive return were 40 percent or 45 percent, as it may well be, ground water in storage would be increased about 133,000 AF or 206,000 AF, respectively, during the 25-year period. Clearly, the supply and demand comparison for normal water conditions is conservative.

Table 15
Normal Water Year Supply and Demand Projections
(AF/yr)

Year	Supply					Demand				Supply Less Demand		
	Surface Water	Natural Ground Water	Imported Water Delivered to Whitewater River Subbasin	Non-Consumptive Return		Recycled Water	Total Supply	Recycled Water	Water Production	Total Demand	Annual	Cumulative
				Ground Water	Recycled Water							
2005	2,500	7,250	35,800	12,050	2,850	60,450	2,850	42,550	45,400	15,050	15,050	
2006	2,800	7,250	35,550	10,650	6,000	62,250	6,000	47,550	53,550	8,700	23,750	
2007	2,800	7,250	35,300	10,900	6,000	62,250	6,000	48,300	54,300	7,950	31,700	
2008	2,800	7,250	35,050	11,200	6,000	62,300	6,000	49,100	55,100	7,200	38,900	
2009	2,800	7,250	34,800	11,450	6,000	62,300	6,000	49,800	55,800	6,500	45,400	
2010	2,800	7,250	37,800	11,750	6,000	65,600	6,000	50,650	56,650	8,950	54,350	
2011	2,800	7,250	37,500	12,000	6,000	65,550	6,000	51,450	57,450	8,100	62,450	
2012	2,800	7,250	37,200	12,250	6,000	65,500	6,000	52,150	58,150	7,350	69,800	
2013	2,800	7,250	36,950	12,550	6,000	65,550	6,000	53,000	59,000	6,550	76,350	
2014	2,800	7,250	36,650	12,850	6,000	65,550	6,000	53,800	59,800	5,750	82,100	
2015	2,800	7,250	36,400	13,100	6,000	65,550	6,000	54,550	60,550	5,000	87,100	
2016	2,800	7,250	36,100	13,350	6,000	65,500	6,000	55,350	61,350	4,150	91,250	
2017	2,800	7,250	35,850	13,600	6,000	65,500	6,000	56,050	62,050	3,450	94,700	
2018	2,800	7,250	35,550	13,900	6,000	65,500	6,000	56,900	62,900	2,600	97,300	
2019	2,800	7,250	35,300	14,200	6,000	65,550	6,000	57,700	63,700	1,850	99,150	
2020	2,800	7,250	35,000	12,500	8,000	65,550	8,000	58,500	66,500	-950	98,200	
2021	2,800	7,250	34,750	12,750	8,000	65,550	8,000	59,250	67,250	-1,700	96,500	
2022	2,800	7,250	34,450	13,000	8,000	65,500	8,000	60,050	68,050	-2,550	93,950	
2023	2,800	7,250	34,200	13,300	8,000	65,550	8,000	60,800	68,800	-3,250	90,700	
2024	2,800	7,250	33,900	13,550	8,000	65,500	8,000	61,600	69,600	-4,100	86,600	
2025	2,800	7,250	33,650	13,800	8,000	65,500	8,000	62,350	70,350	-4,850	81,750	
2026	2,800	7,250	33,650	14,100	8,000	65,800	8,000	63,150	71,150	-5,350	76,400	
2027	2,800	7,250	33,650	14,400	8,000	66,100	8,000	63,950	71,950	-5,850	70,550	
2028	2,800	7,250	36,650	14,650	8,000	69,350	8,000	64,700	72,700	-3,350	67,200	
2029	2,800	7,250	36,650	14,950	8,000	69,650	8,000	65,500	73,500	-3,850	63,350	
2030	2,800	7,250	36,650	15,200	8,000	69,900	8,000	66,300	74,300	-4,400	58,950	

B. SINGLE DRY WATER YEAR AND MULTIPLE DRY WATER YEARS

In addition to meeting the demands for normal water years, DWA must also meet the demands of its customers during a single dry water year and during multiple dry water years. If surface water flows are reduced as a result of dry or critically dry water years, DWA has the ability to meet demands by increasing its ground water extractions.

Water supply and demand for selected single dry water years through 2030 are set forth in Tables 16A through 16C, and water supply and demand for selected multiple dry water years through 2030 are set forth in Tables 17A through 17C.

With the reliability of DWA's ground water, surface water, and recycled water supplies, DWA is confident of its ability to meet demand through 2030. As noted in the tables, the available supply will be determined by the quantity of water required to meet demands. DWA will not extract more ground water than is needed to meet such demands.

Table 16A represents a single dry water year occurring in 2010; Table 16B represents a single dry water year occurring in 2017; and Table 16C represents a single dry water year occurring in 2024. Note that, despite the single dry water years selected (dry years that may or may not occur or may occur during other years), ground water in storage would be increased by about 19,000 AF to 23,000 AF during the 25 year period, depending on the specific dry water year. With an increase in non-consumptive return from 35 percent to 40 percent or 45 percent, ground water in storage would be increased by 93,000 AF to 97,000 AF and 166,000 AF to 170,000 AF, respectively.

Similarly, Table 17A represents a multiple dry water year period occurring from 2010 through 2013; Table 17B represents a multiple dry water year period occurring from 2017 through 2020; and Table 17C represents a multiple dry water year period occurring from 2024 through 2027. Note that in Tables 17A through 17C, of the series of dry years selected (as with single dry years, multiple dry years may or may not occur or may occur during other years), ground water in storage would be decreased by about 60,000 AF to about 74,000 AF, depending upon the selected multiple year period. Such a decrease in ground water in storage, less than one percent, is insignificant, if not unlikely.

The imported water quantities do not include surplus water which would more than likely offset the quantities of water extracted from ground water in storage. In addition, with an increase in

non-consumptive return from 35 percent to 40 percent, ground water in storage would not be significantly altered in Table 17A, but it would be increased about 7,500 AF in Table 17B and about 14,000 AF in Table 17C. Further, with an increase to 45 percent, ground water in storage would be increased in all three scenarios, from about 73,000 AF to about 87,000 AF.

Table 16A
Supply and Demand Projections
Single Dry Water Year Occurring in 2010
(AF/yr)

Year	Supply						Demand				Supply Less Demand	
	Surface Water	Natural Ground Water	Imported Water Delivered to Whitewater River Subbasin	Non-Consumptive Return		Total Supply	Recycled Water	Water Production	Total Demand	Annual	Cumulative	
				Ground Water	Recycled Water							
2005	2,500	7,250	35,800	12,050	2,850	60,450	2,850	42,550	45,400	15,050	15,050	
2006	2,800	7,250	35,550	10,650	6,000	62,250	6,000	47,550	53,550	8,700	23,750	
2007	2,800	7,250	35,300	10,900	6,000	62,250	6,000	48,300	54,300	7,950	31,700	
2008	2,800	7,250	35,050	11,200	6,000	62,300	6,000	49,100	55,100	7,200	38,900	
2009	2,800	7,250	34,800	11,450	6,000	62,300	6,000	49,800	55,800	6,500	45,400	
2010	1,350	6,000	800	11,750	6,000	25,900	6,000	50,650	56,650	-30,750	14,650	
2011	2,800	7,250	37,500	12,000	6,000	65,550	6,000	51,450	57,450	8,100	22,750	
2012	2,800	7,250	37,200	12,250	6,000	65,500	6,000	52,150	58,150	7,350	30,100	
2013	2,800	7,250	36,950	12,550	6,000	65,550	6,000	53,000	59,000	6,550	36,650	
2014	2,800	7,250	36,650	12,850	6,000	65,550	6,000	53,800	59,800	5,750	42,400	
2015	2,800	7,250	36,400	13,100	6,000	65,550	6,000	54,550	60,550	5,000	47,400	
2016	2,800	7,250	36,100	13,350	6,000	65,500	6,000	55,350	61,350	4,150	51,550	
2017	2,800	7,250	35,850	13,600	6,000	65,500	6,000	56,050	62,050	3,450	55,000	
2018	2,800	7,250	35,550	13,900	6,000	65,500	6,000	56,900	62,900	2,600	57,600	
2019	2,800	7,250	35,300	14,200	6,000	65,550	6,000	57,700	63,700	1,850	59,450	
2020	2,800	7,250	35,000	12,500	8,000	65,550	8,000	58,500	66,500	-950	58,500	
2021	2,800	7,250	34,750	12,750	8,000	65,550	8,000	59,250	67,250	-1,700	56,800	
2022	2,800	7,250	34,450	13,000	8,000	65,500	8,000	60,050	68,050	-2,550	54,250	
2023	2,800	7,250	34,200	13,300	8,000	65,550	8,000	60,800	68,800	-3,250	51,000	
2024	2,800	7,250	33,900	13,550	8,000	65,500	8,000	61,600	69,600	-4,100	46,900	
2025	2,800	7,250	33,650	13,800	8,000	65,500	8,000	62,350	70,350	-4,850	42,050	
2026	2,800	7,250	33,650	14,100	8,000	65,800	8,000	63,150	71,150	-5,350	36,700	
2027	2,800	7,250	33,650	14,400	8,000	66,100	8,000	63,950	71,950	-5,850	30,850	
2028	2,800	7,250	36,650	14,650	8,000	69,350	8,000	64,700	72,700	-3,350	27,500	
2029	2,800	7,250	36,650	14,950	8,000	69,650	8,000	65,500	73,500	-3,850	23,650	
2030	2,800	7,250	36,650	15,200	8,000	69,900	8,000	66,300	74,300	-4,400	19,250	

**Table 16B
Supply and Demand Projections
Single Dry Water Year Occurring in 2017
(AF/Yr)**

Year	Supply						Demand				Supply Less Demand	
	Surface Water	Natural Ground Water	Imported Water Delivered to Whitewater River Subbasin	Non-Consumptive Return		Total Supply	Recycled Water	Water Production	Total Demand	Annual	Cumulative	
				Ground Water	Recycled Water							
2005	2,500	7,250	35,800	12,050	2,850	60,450	2,850	42,550	45,400	15,050	15,050	
2006	2,800	7,250	35,550	10,650	6,000	62,250	6,000	47,550	53,550	8,700	23,750	
2007	2,800	7,250	35,300	10,900	6,000	62,250	6,000	48,300	54,300	7,950	31,700	
2008	2,800	7,250	35,050	11,200	6,000	62,300	6,000	49,100	55,100	7,200	38,900	
2009	2,800	7,250	34,800	11,450	6,000	62,300	6,000	49,800	55,800	6,500	45,400	
2010	2,800	7,250	37,800	11,750	6,000	65,600	6,000	50,650	56,650	8,950	54,350	
2011	2,800	7,250	37,500	12,000	6,000	65,550	6,000	51,450	57,450	8,100	62,450	
2012	2,800	7,250	37,200	12,250	6,000	65,500	6,000	52,150	58,150	7,350	69,800	
2013	2,800	7,250	36,950	12,550	6,000	65,550	6,000	53,000	59,000	6,550	76,350	
2014	2,800	7,250	36,650	12,850	6,000	65,550	6,000	53,800	59,800	5,750	82,100	
2015	2,800	7,250	36,400	13,100	6,000	65,550	6,000	54,550	60,550	5,000	87,100	
2016	2,800	7,250	36,100	13,350	6,000	65,500	6,000	55,350	61,350	4,150	91,250	
2017	1,350	6,000	800	13,600	6,000	27,750	6,000	56,050	62,050	-34,300	56,950	
2018	2,800	7,250	35,550	13,900	6,000	65,500	6,000	56,900	62,900	2,600	59,550	
2019	2,800	7,250	35,300	14,200	6,000	65,550	6,000	57,700	63,700	1,850	61,400	
2020	2,800	7,250	35,000	12,500	8,000	65,550	8,000	58,500	66,500	-950	60,450	
2021	2,800	7,250	34,750	12,750	8,000	65,550	8,000	59,250	67,250	-1,700	58,750	
2022	2,800	7,250	34,450	13,000	8,000	65,500	8,000	60,050	68,050	-2,550	56,200	
2023	2,800	7,250	34,200	13,300	8,000	65,550	8,000	60,800	68,800	-3,250	52,950	
2024	2,800	7,250	33,900	13,550	8,000	65,500	8,000	61,600	69,600	-4,100	48,850	
2025	2,800	7,250	33,650	13,800	8,000	65,500	8,000	62,350	70,350	-4,850	44,000	
2026	2,800	7,250	33,650	14,100	8,000	65,800	8,000	63,150	71,150	-5,350	38,650	
2027	2,800	7,250	33,650	14,400	8,000	66,100	8,000	63,950	71,950	-5,850	32,800	
2028	2,800	7,250	36,650	14,650	8,000	69,350	8,000	64,700	72,700	-3,350	29,450	
2029	2,800	7,250	36,650	14,950	8,000	69,650	8,000	65,500	73,500	-3,850	25,600	
2030	2,800	7,250	36,650	15,200	8,000	69,900	8,000	66,300	74,300	-4,400	21,200	

Table 16C
Supply and Demand Projections
Single Dry Water Year Occurring in 2024
(AF/yr)

Year	Supply						Demand				Supply Less Demand	
	Surface Water	Natural Ground Water	Imported Water Delivered to Whitewater River Subbasin	Non-Consumptive Return		Total Supply	Recycled Water	Water Production	Total Demand	Annual	Cumulative	
				Ground Water	Recycled Water							
2005	2,500	7,250	35,800	12,050	2,850	60,450	2,850	42,550	45,400	15,050	15,050	
2006	2,800	7,250	35,550	10,650	6,000	62,250	6,000	47,550	53,550	8,700	23,750	
2007	2,800	7,250	35,300	10,900	6,000	62,250	6,000	48,300	54,300	7,950	31,700	
2008	2,800	7,250	35,050	11,200	6,000	62,300	6,000	49,100	55,100	7,200	38,900	
2009	2,800	7,250	34,800	11,450	6,000	62,300	6,000	49,800	55,800	6,500	45,400	
2010	2,800	7,250	37,800	11,750	6,000	65,600	6,000	50,650	56,650	8,950	54,350	
2011	2,800	7,250	37,500	12,000	6,000	65,550	6,000	51,450	57,450	8,100	62,450	
2012	2,800	7,250	37,200	12,250	6,000	65,500	6,000	52,150	58,150	7,350	69,800	
2013	2,800	7,250	36,950	12,550	6,000	65,550	6,000	53,000	59,000	6,550	76,350	
2014	2,800	7,250	36,650	12,850	6,000	65,550	6,000	53,800	59,800	5,750	82,100	
2015	2,800	7,250	36,400	13,100	6,000	65,550	6,000	54,550	60,550	5,000	87,100	
2016	2,800	7,250	36,100	13,350	6,000	65,500	6,000	55,350	61,350	4,150	91,250	
2017	2,800	7,250	35,850	13,600	6,000	65,500	6,000	56,050	62,050	3,450	94,700	
2018	2,800	7,250	35,550	13,900	6,000	65,500	6,000	56,900	62,900	2,600	97,300	
2019	2,800	7,250	35,300	14,200	6,000	65,550	6,000	57,700	63,700	1,850	99,150	
2020	2,800	7,250	35,000	12,500	8,000	65,550	8,000	58,500	66,500	-950	98,200	
2021	2,800	7,250	34,750	12,750	8,000	65,550	8,000	59,250	67,250	-1,700	96,500	
2022	2,800	7,250	34,450	13,000	8,000	65,500	8,000	60,050	68,050	-2,550	93,950	
2023	2,800	7,250	34,200	13,300	8,000	65,550	8,000	60,800	68,800	-3,250	90,700	
2024	1,350	6,000	800	13,550	8,000	29,700	8,000	61,600	69,600	-39,900	50,800	
2025	2,800	7,250	33,650	13,800	8,000	65,500	8,000	62,350	70,350	-4,850	45,950	
2026	2,800	7,250	33,650	14,100	8,000	65,800	8,000	63,150	71,150	-5,350	40,600	
2027	2,800	7,250	33,650	14,400	8,000	66,100	8,000	63,950	71,950	-5,850	34,750	
2028	2,800	7,250	36,650	14,650	8,000	69,350	8,000	64,700	72,700	-3,350	31,400	
2029	2,800	7,250	36,650	14,950	8,000	69,650	8,000	65,500	73,500	-3,850	27,550	
2030	2,800	7,250	36,650	15,200	8,000	69,900	8,000	66,300	74,300	-4,400	23,150	

Table 17A
Supply and Demand Projections
Multiple Dry Water Year Period Occurring 2010-2013
(AF/yr)

Year	Supply					Demand				Supply Less Demand		
	Surface Water	Natural Ground Water	Imported Water Delivered to Whitewater River Subbasin	Non-Consumptive Return		Recycled Water	Total Supply	Recycled Water	Water Production	Total Demand	Annual	Cumulative
				Ground Water	Recycled Water							
2005	2,500	7,250	35,800	12,050	2,850	60,450	2,850	42,550	45,400	15,050	15,050	
2006	2,800	7,250	35,550	10,650	6,000	62,250	6,000	47,550	53,550	8,700	23,750	
2007	2,800	7,250	35,300	10,900	6,000	62,250	6,000	48,300	54,300	7,950	31,700	
2008	2,800	7,250	35,050	11,200	6,000	62,300	6,000	49,100	55,100	7,200	38,900	
2009	2,800	7,250	34,800	11,450	6,000	62,300	6,000	49,800	55,800	6,500	45,400	
2010	1,500	6,000	8,100	11,750	6,000	33,350	6,000	50,650	56,650	-23,300	22,100	
2011	1,500	5,500	8,100	12,000	6,000	33,100	6,000	51,450	57,450	-24,350	-2,250	
2012	1,500	5,000	6,700	12,250	6,000	31,450	6,000	52,150	58,150	-26,700	-28,950	
2013	1,500	4,500	6,700	12,550	6,000	31,250	6,000	53,000	59,000	-27,750	-56,700	
2014	2,800	7,250	36,650	12,850	6,000	65,550	6,000	53,800	59,800	5,750	-50,950	
2015	2,800	7,250	36,400	13,100	6,000	65,550	6,000	54,550	60,550	5,000	-45,950	
2016	2,800	7,250	36,100	13,350	6,000	65,500	6,000	55,350	61,350	4,150	-41,800	
2017	2,800	7,250	35,850	13,600	6,000	65,500	6,000	56,050	62,050	3,450	-38,350	
2018	2,800	7,250	35,550	13,900	6,000	65,500	6,000	56,900	62,900	2,600	-35,750	
2019	2,800	7,250	35,300	14,200	6,000	65,550	6,000	57,700	63,700	1,850	-33,900	
2020	2,800	7,250	35,000	12,500	8,000	65,550	8,000	58,500	66,500	-950	-34,850	
2021	2,800	7,250	34,750	12,750	8,000	65,550	8,000	59,250	67,250	-1,700	-36,550	
2022	2,800	7,250	34,450	13,000	8,000	65,500	8,000	60,050	68,050	-2,550	-39,100	
2023	2,800	7,250	34,200	13,300	8,000	65,550	8,000	60,800	68,800	-3,250	-42,350	
2024	2,800	7,250	33,900	13,550	8,000	65,500	8,000	61,600	69,600	-4,100	-46,450	
2025	2,800	7,250	33,650	13,800	8,000	65,500	8,000	62,350	70,350	-4,850	-51,300	
2026	2,800	7,250	33,650	14,100	8,000	65,800	8,000	63,150	71,150	-5,350	-56,650	
2027	2,800	7,250	33,650	14,400	8,000	66,100	8,000	63,950	71,950	-5,850	-62,500	
2028	2,800	7,250	36,650	14,650	8,000	69,350	8,000	64,700	72,700	-3,350	-65,850	
2029	2,800	7,250	36,650	14,950	8,000	69,650	8,000	65,500	73,500	-3,850	-69,700	
2030	2,800	7,250	36,650	15,200	8,000	69,900	8,000	66,300	74,300	-4,400	-74,100	

Table 17B
Supply and Demand Projections
Multiple Dry Water Year Period Occurring 2017-2020
(AF/YR)

Year	Supply					Demand				Supply Less Demand	
	Surface Water Divisions	Natural Ground Water Replenishment	Imported Water Delivered to Whitewater River Subbasin	Non-Consumptive Return		Recycled Water	Total Supply	Water Production	Total Demand	Annual	Cumulative
				Ground Water Recharge	Recycled Water						
2005	2,500	7,250	35,800	12,050	2,850	60,450	42,550	45,400	15,050	15,050	
2006	2,800	7,250	35,550	10,650	6,000	62,250	47,550	53,550	8,700	23,750	
2007	2,800	7,250	35,300	10,900	6,000	62,250	48,300	54,300	7,950	31,700	
2008	2,800	7,250	35,050	11,200	6,000	62,300	49,100	55,100	7,200	38,900	
2009	2,800	7,250	34,800	11,450	6,000	62,300	49,800	55,800	6,500	45,400	
2010	2,800	7,250	37,800	11,750	6,000	65,600	50,650	56,650	8,950	54,350	
2011	2,800	7,250	37,500	12,000	6,000	65,550	51,450	57,450	8,100	62,450	
2012	2,800	7,250	37,200	12,250	6,000	65,500	52,150	58,150	7,350	69,800	
2013	2,800	7,250	36,950	12,550	6,000	65,550	53,000	59,000	6,550	76,350	
2014	2,800	7,250	36,650	12,850	6,000	65,550	53,800	59,800	5,750	82,100	
2015	2,800	7,250	36,400	13,100	6,000	65,550	54,550	60,550	5,000	87,100	
2016	2,800	7,250	36,100	13,350	6,000	65,500	55,350	61,350	4,150	91,250	
2017	1,500	6,000	8,100	13,600	6,000	35,200	56,050	62,050	-26,850	64,400	
2018	1,500	5,500	8,100	13,900	6,000	35,000	56,900	62,900	-27,900	36,500	
2019	1,500	5,000	6,700	14,200	6,000	33,400	57,700	63,700	-30,300	6,200	
2020	1,500	4,500	6,700	12,500	8,000	33,200	58,500	66,500	-33,300	-27,100	
2021	2,800	7,250	34,750	12,750	8,000	65,550	59,250	67,250	-1,700	-28,800	
2022	2,800	7,250	34,450	13,000	8,000	65,500	60,050	68,050	-2,550	-31,350	
2023	2,800	7,250	34,200	13,300	8,000	65,550	60,800	68,800	-3,250	-34,600	
2024	2,800	7,250	33,900	13,550	8,000	65,500	61,600	69,600	-4,100	-38,700	
2025	2,800	7,250	33,650	13,800	8,000	65,500	62,350	70,350	-4,850	-43,550	
2026	2,800	7,250	33,650	14,100	8,000	65,800	63,150	71,150	-5,350	-48,900	
2027	2,800	7,250	33,650	14,400	8,000	66,100	63,950	71,950	-5,850	-54,750	
2028	2,800	7,250	36,650	14,650	8,000	69,350	64,700	72,700	-3,350	-58,100	
2029	2,800	7,250	36,650	14,950	8,000	69,650	65,500	73,500	-3,850	-61,950	
2030	2,800	7,250	36,650	15,200	8,000	69,900	66,300	74,300	-4,400	-66,350	

Table 17C
Supply and Demand Projections
Multiple Dry Water Year Period Occurring 2024-2027
(AF/YR)

Year	Supply					Demand				Supply Less Demand		
	Surface Water	Natural Ground Water	Imported Water Delivered to Whitewater River Subbasin	Non-Consumptive Return		Recycled Water	Total Supply	Recycled Water	Water Production	Total Demand	Annual	Cumulative
				Ground Water	Recycled Water							
2005	2,500	7,250	35,800	12,050	2,850	60,450	2,850	42,550	45,400	15,050	15,050	
2006	2,800	7,250	35,550	10,650	6,000	62,250	6,000	47,550	53,550	8,700	23,750	
2007	2,800	7,250	35,300	10,900	6,000	62,250	6,000	48,300	54,300	7,950	31,700	
2008	2,800	7,250	35,050	11,200	6,000	62,300	6,000	49,100	55,100	7,200	38,900	
2009	2,800	7,250	34,800	11,450	6,000	62,300	6,000	49,800	55,800	6,500	45,400	
2010	2,800	7,250	37,800	11,750	6,000	65,600	6,000	50,650	56,650	8,950	54,350	
2011	2,800	7,250	37,500	12,000	6,000	65,550	6,000	51,450	57,450	8,100	62,450	
2012	2,800	7,250	37,200	12,250	6,000	65,500	6,000	52,150	58,150	7,350	69,800	
2013	2,800	7,250	36,950	12,550	6,000	65,550	6,000	53,000	59,000	6,550	76,350	
2014	2,800	7,250	36,650	12,850	6,000	65,550	6,000	53,800	59,800	5,750	82,100	
2015	2,800	7,250	36,400	13,100	6,000	65,550	6,000	54,550	60,550	5,000	87,100	
2016	2,800	7,250	36,100	13,350	6,000	65,500	6,000	55,350	61,350	4,150	91,250	
2017	2,800	7,250	35,850	13,600	6,000	65,500	6,000	56,050	62,050	3,450	94,700	
2018	2,800	7,250	35,550	13,900	6,000	65,500	6,000	56,900	62,900	2,600	97,300	
2019	2,800	7,250	35,300	14,200	6,000	65,550	6,000	57,700	63,700	1,850	99,150	
2020	2,800	7,250	35,000	12,500	8,000	65,550	8,000	58,500	66,500	-950	98,200	
2021	2,800	7,250	34,750	12,750	8,000	65,550	8,000	59,250	67,250	-1,700	96,500	
2022	2,800	7,250	34,450	13,000	8,000	65,500	8,000	60,050	68,050	-2,550	93,950	
2023	2,800	7,250	34,200	13,300	8,000	65,550	8,000	60,800	68,800	-3,250	90,700	
2024	1,500	6,000	8,100	13,550	8,000	37,150	8,000	61,600	69,600	-32,450	58,250	
2025	1,500	5,500	8,100	13,800	8,000	36,900	8,000	62,350	70,350	-33,450	24,800	
2026	1,500	5,000	6,700	14,100	8,000	35,300	8,000	63,150	71,150	-35,850	-11,050	
2027	1,500	4,500	6,700	14,400	8,000	35,100	8,000	63,950	71,950	-36,850	-47,900	
2028	2,800	7,250	36,650	14,650	8,000	69,350	8,000	64,700	72,700	-3,350	-51,250	
2029	2,800	7,250	36,650	14,950	8,000	69,650	8,000	65,500	73,500	-3,850	-55,100	
2030	2,800	7,250	36,650	15,200	8,000	69,900	8,000	66,300	74,300	-4,400	-59,500	

C. SUMMARY

In summary, DWA has sufficient water supplies available to meet normal, single dry year, and multiple dry year water demands without significant reduction of ground water in storage and without risk of not having sufficient water supplies to meet anticipated water demands within the next 25 years.

SECTION VI
WATER DEMAND MANAGEMENT MEASURES

**SECTION VI
WATER DEMAND MANAGEMENT MEASURES
(BEST MANAGEMENT PRACTICES)**

Law 10631(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: (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.

10631(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 the following:

10631(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).

DWA is a signatory to the Memorandum of Understanding regarding Urban Water Conservation in California (MOU), and is therefore a member of the California Urban Water Conservation Council (CUWCC). The Agency's signed MOU is dated October 15, 1991.

As a member of the CUWCC, DWA has complied with all Best Management Practice Targets outlined in the MOU that have been determined appropriate for the conditions within its Service Area. Full explanations have been provided in cases whereby DWA has determined it in the best interest of its customers to implement a Best Management Practice (BMP) other than as the CUWCC suggests, or to channel its efforts in another direction.

The following are excerpts from DWA's Year 2004 BMP report to the CUWCC (refer to Appendix D for full reports) with additional explanations included as necessary:

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

A. Implementation		
1.	Has your agency developed and implemented a targeting/marketing strategy for SINGLE-FAMILY residential water use surveys?	NO
2.	Has your agency developed and implemented a targeting/marketing strategy for MULTI-FAMILY residential water use surveys?	NO

B. "At Least As Effective As"		
1.	Is your AGENCY implementing an "at least as effective as" variant of this BMP?	YES

C. Explanation
 DWA studies have concluded that as much as 80 percent of all residential water use is for landscape irrigation. Therefore, DWA has concluded that it is most cost effective for DWA to concentrate the bulk of its efforts on reducing water consumption in the landscape. DWA, therefore, has chosen to put its resources into performing BMP 5. (Complete information may be found in the "Water Conservation Program of the Desert Water Agency", which is included in Appendix C of this report and on file with the CUWCC).

BMP 02: Residential Plumbing Retrofit

A. Implementation		
1.	Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts?	NO
2.	Has your agency satisfied the 75 percent saturation requirement for single-family housing units?	NO
3.	Has your agency satisfied the 75 percent saturation requirement for multi-family housing units?	NO

B. Low-Flow Device Distribution Information		
1.	Has your agency developed a targeting/marketing strategy for distributing low-flow devices?	NO

C. "At Least As Effective As"		
1.	Is your AGENCY implementing an "at least as effective as" variant of this BMP?	YES

D. Explanation

In January 1977, DWA published the results of a residential pilot program to analyze Agency's customer water use habits, and to establish the focus of a water conservation program (refer to Appendix C, "Water Conservation Program of the Desert Water Agency"). The study concluded that 60 to 80 percent of all residential water use within DWA's Service Area is for landscape irrigation. This is due to the arid desert environment where temperatures reach as high as 123 degrees Fahrenheit.

The study did involve the installation of devices such as low flow showerheads and toilet displacement devices (toilet retrofits) by DWA personnel. Public acceptance of the showerheads was favorable; however, the toilet devices were not well received.

Since a large percentage of water was found to be used for landscape irrigation, DWA felt that future programs should be directed towards customers reducing water use in the landscape as it has the highest potential for savings and is the most cost effective.

BMP 03: System Water Audits, Leak Detection, and Repair

A. Implementation

1.	Has your agency completed a pre-screening system audit for this reporting year?	NO
2.	Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production?	YES
3.	Did your agency complete a full-scale audit during this report year?	NO
4.	Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit?	NO
5.	Does your agency operate a system leak detection program?	NO

B. Survey Data

1.	Total number of miles of distribution system line:	368
2.	Number of miles of distribution system line surveyed:	0

C. "At Least As Effective As"

1.	Is your AGENCY implementing an "at least as effective as" variant of this BMP?	YES
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D. Explanation

DWA informs all customers of possible on-site leaks when excessive consumption occurs when compared to the prior year's usage. DWA performs water audits by metering all customer connections and water used for construction purposes through fire hydrants. Water used for other purposes such as city street washing and fire fighting is also recorded. The combined usage is calculated and the percent unaccounted-for is determined.

DWA does not have a leak detection program since DWA feels that it is more cost effective to fund an aggressive main replacement program. Additionally, the soils in DWA's area are composed of coarse sand. This allows water from a leak to surface quickly where it is easily detected. All leaks are repaired as soon as they are discovered to prevent damage and waste of water. All leaks are tracked using on maps and on a pipeline inventory computer program. In addition to aging mains, mains with a history of leaks are budgeted for replacement.

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections

A. Implementation		
1.	Does your agency require meters for all new connections and bill by volume-of-use?	YES
2.	Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use?	NO
All DWA service connections are metered		

B. Feasibility Study		
1.	Has your agency conducted a feasibility study to provide incentives to switch mixed-use accounts to dedicated landscape meters?	NO
Landscape water audits conducted and consumptive use mailings have shown that the majority of applicable developments within DWA's Service Area were fitted with dedicated irrigation meters at the time of construction. A feasibility study would not be cost effective.		

C. "At Least As Effective As"		
1.	Is your AGENCY implementing an "at least as effective as" variant of this BMP?	NO

BMP 05: Large Landscape Conservation Programs and Incentives

A. Water Use Budgets		
1.	Number of Dedicated Irrigation Meter Accounts:	Not Determined
2.	Number of Dedicated Irrigation Meter Accounts with Water Budgets:	0
3.	Does your agency provide water use notices to accounts with budgets each billing cycle?	NO
5.	Does your agency provide water use notices to accounts with budgets each billing cycle?	NO

B. Landscape Surveys		
1.	Has your agency developed a marketing/targeting strategy for landscape surveys?	YES
a.	If YES, when did your agency begin implementing this strategy?	07/01/85
b.	Description of marketing/targeting strategy: <p>Since 1985, DWA has had irrigation system evaluations conducted under contract with the Coachella Valley Resource Conservation District (Irrigation Evaluation/Management Mobile Lab) and the California Department of Water Resources. The program targets large volume irrigation users such as golf courses, parks, school grounds, and condominium projects. Water consumption reductions of 25 to 30 percent are not uncommon when the Mobile Lab recommendations are followed.</p> <p>In the early years of the program, sites were selected by reviewing DWA's system map pages and choosing ones with the greatest areas. Customers were then offered an evaluation by letter or telephone.</p>	

Recently, as more customers have become aware of the program, all new evaluations and a number of follow-ups performed have been triggered following customers contacting DWA regarding this service.

DWA contracts to have eleven new evaluations, and seven follow-ups performed annually. Of this quantity, up to eight sites may be designated as "implementation sites" whereby personnel will "walk" the customer through any changes they wish to execute.

2.	Number of Surveys Offered:	5
3.	Number of Surveys Completed:	5
4.	Indicate which of the following Landscape Elements are part of your survey:	
	a. Irrigation System Check	YES
	b. Distribution Uniformity Analysis	YES
	c. Review / Develop Irrigation Schedules	YES
	d. Measure Landscape Area	YES
	e. Measure Total Irrigable Area	YES
	f. Provide Customer Report / Information	YES
5.	Do you track survey offers and results?	YES
6.	Does your agency provide follow-up surveys for previously completed surveys?	NO
	a. If YES, describe below:	
	Follow-up surveys are performed following customer implementation of recommended changes, or as requested by the customer.	

C. Other BMP 5 Actions		
1.	An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. Does your agency provide mixed-use accounts with landscape budgets?	YES
2.	Number of Commercial/Industrial/Institutional (CII) mixed-use accounts with landscape budgets.	0
3.	Do you offer landscape irrigation training?	NO
4.	Does your agency offer financial incentives to improve landscape water use efficiency? If YES, describe below:	NO
5.	Do you provide landscape water use efficiency information to new customers and customers changing services?	YES
	DWA provides all new customers and customers changing service with a comprehensive, easy-to-read brochure which includes all facets of our functions, along with water conservation information. The brochure contains specific conservation information offering additional booklets containing plant lists and suggestions for conserving water. A rate brochure is provided as well. In addition, DWA plays on-hold telephone messages containing information about water conservation and water efficient plants.	
6.	Do you have irrigated landscaping at your facilities?	YES
	a. If YES, is it water-efficient?	YES
	All new facility sites are designed utilizing exclusively water-efficient plants and low-volume irrigation systems. Older sites have been retrofitted utilizing water-efficient plants and irrigation systems. All outdated irrigation systems have been retrofitted with water-efficient components. Additionally, all facility site water usage is metered and evaluated using a computer generated spread sheet.	
	b. If YES, does it have dedicated irrigation metering?	YES
7.	Do you provide customer notices at the start of the irrigation season?	NO

8. Do you provide customer notices at the end of the irrigation season?	NO
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D. Landscape Conservation Program Expenditures		
	This Year	Next Year
1. Budgeted Expenditures	\$12,500	\$0
2. Actual Expenditures	\$5,100	

E. "At Least As Effective As"	
1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	NO

BMP 06: High-Efficiency Washing Machine Rebate Programs

A. Implementation	
1. Do any energy service providers or wastewater utilities in your area offer rebates for high-efficiency washers?	NO
2. Does your agency offer rebates for high-efficiency washers?	NO

B. "At Least As Effective As"	
1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	NO

C. Explanation	
<p>DWA studies have concluded that as much as 80 percent of all residential water use is for landscape irrigation. Therefore, DWA has concluded that it is more cost effective for us to concentrate the bulk of our efforts on reducing water consumption in the landscape. DWA, therefore, has chosen to put its resources into performing BMP 5. (Complete information may be found in the "Water Conservation Program of the Desert Water Agency", which is included in Appendix C of this report and on file with the CUWCC).</p>	

BMP 07: Public Information Programs

A. Implementation	
1. Does your agency maintain an active public information program to promote and educate customers about water conservation?	YES
<p>a. If YES, describe the program and how it's organized.</p> <p>Public education has played an expanding role in the Agency's formal Water Conservation Program since its adoption by its Board of Directors 1982 (refer to Appendix B, Ordinance No. 31). The program utilizes both staff personnel and contract consultants. All aspects of DWA's functions are communicated to the public utilizing the items checked below. Additionally, this year, DWA redesigned and expanded its website. It is now more user-friendly and several items were added to better serve the public.</p>	
<p>1) <u>Public Tours</u></p> <p>DWA has always encouraged members of the public to tour its facilities for purposes of learning how their water supply is obtained and why it is essential to</p>	

not waste it. Recently, on-hold telephone messages have been added which invite callers to inquire about facility tours. In addition, DWA is in the process of redesigning the landscape at DWA's Operations Center using drought tolerant plants to further promote outdoor water conservation.

Additionally, as the seasons permit, DWA invites key members of the public to participate in comprehensive tours of its water and water recycling facilities. In these one-half day tours, DWA provides transportation and a box lunch at its Snow Creek intake facility at the base of the San Jacinto Mountains.

In 2005, DWA sponsored a tour of MWD's Colorado River Aqueduct (CRA) and the Foothill Feeder (FF) from the Colorado River to Diamond Valley Lake. The tour was intended to inform interested members of the public of the interrelationship of the SWP and the CRA and the Coachella Valley's dependence on both.

Periodically, DWA sponsors public tours of SWP facilities. In these tours, participants generally travel by bus from Lake Oroville south along the Project route to the new Diamond Valley Lake near Hemet. The tours are intended to inform participants of the essential role the SWP plays within California, and how it relates to the water supply within DWA's Service Area. Because of security, DWA has not been permitted to tour SWP facilities since "9/11".

2) Conservation Literature

A wide selection of conservation literature illustrating how to save water both indoors and outdoors (landscaping) is available at the DWA's Operations Center and the public library. Brochures are also located at the local convention and visitor's bureau and on public transportation buses operating within DWA's Service Area. Literature is also distributed on public tours and to all new customers, as described in BMP 5.

3) Exhibits

DWA has prepared many exhibits on water conservation and water recycling. The exhibits have been displayed at DWA, home shows, shopping malls, energy conservation fairs, Chamber of Commerce events, Desert Hospital, schools, the public library, water conferences including ACWA and AWWA, and other locations throughout DWA's Service Area.

4) Speaker's Bureau

The "Speaker's Bureau" has provided speakers and presented programs to service clubs, social clubs, garden clubs, environmental groups, and schools within DWA's Service Area. Topics include water conservation, water management, use of water, the water cycle, water recycling, water/energy relationships, landscaping and plant materials, low flow irrigation, key water issues within the Service Area, southwestern water supply, and the SWP.

The "Speaker's Bureau" has a library of video, movie, and slide presentations available to interested organizations. In addition, DWA produced a 25-minute motion picture video presentation entitled "Water – The Flow of Life in the Desert" which describes water supply, use, and conservation in the desert environment. A condensed 12-minute version for viewing by service clubs was also produced, along with four 30 second Public Service Announcements for

broadcasting on local television.

Members of the "Speaker's Bureau" have appeared on local radio and television interview and talk programs to discuss water conservation. Members of the "Speaker's Bureau" have prepared news releases for the local newspaper on conservation, landscaping, and reducing the waste of water.

5) Demonstration Gardens

DWA believes that it is essential to provide the public with settings in which water-efficient plants may be viewed. By observing the plants in attractive settings, the chance of people adopting similar types of landscapes is substantially increased.

When DWA constructed its new Operations Center in 1978, it also constructed a low water use demonstration garden. Subsequently, in 1981, it entered a 10-year research study of water efficient ornamental plants for the Coachella Valley with the U. S. Department of Agriculture's Natural Resources Conservation Service. The joint study, conducted at a special garden adjacent to DWA's Operations Center, resulted in a series of publications, one each in 1983, 1986, 1993, and 2000 which addressed drought tolerant and water efficient ornamental plants for the Coachella Valley using both ground water and recycled water.

DWA's Operations Center is currently undergoing an extensive expansion with adjacent landscape replacement to demonstrate water-efficient landscaping and irrigation systems. Most of the grounds will be available for public viewing at any time with the rest being available for public viewing by appointment. Identification signs containing plant names and descriptions and irrigation components and descriptions will be located throughout the site.

DWA's 12-acre water recycling facility site has been developed as a water-efficient landscape laboratory dedicated to research and demonstration of environmentally appropriate landscapes. The facility is available for public tours and also contains plant identification signs. Both DWA's Operations Center and Recycling Facility grounds are irrigated with recycled water.

DWA has also partnered with the City of Palm Springs, Palm Springs Chamber of Commerce, and the Palm Springs Public Library on separate occasions to produce demonstration gardens.

6) Water Bills

Since the early 1980s, DWA's monthly water bill has provided water users with comparative consumption use figures for the same period of the previous year. In addition, for high water bills, a special notice is included with the bill to alert the water user that on-site repairs or adjustments may be necessary.

DWA is currently in the process of redesigning its water bills with a more attractive, easy-to-read format. The bill will also include a section showing customers how to read the meter for purposes of conserving water.

7) Annual Water Quality Report

Each year, DWA publishes and distributes an Annual Water Quality Report so that its customers have the opportunity to learn more about the water they receive. The report is distributed through a customer mailing and it is displayed at various locations throughout DWA's Service Area.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	NO	N/A
b. Public Service Announcement	NO	N/A
c. Bill Inserts / Newsletters / Brochures	YES	2
d. Bill showing water usage in comparison to previous year's usage	YES	N/A
e. Demonstration Gardens	YES	2
f. Special Events, Media Events	YES	1
g. Speaker's Bureau	YES	15
h. Program to coordinate with other government agencies, industry, and public interest groups and media	YES	N/A

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	\$58,500	\$0
2. Actual Expenditures	\$184,237	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	NO
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BMP 08: School Education Programs

A. Implementation

1. Has your agency implemented a school information program to promote water conservation?	YES			
2. Please provide information on your school programs (by grade level):				
Grade	Are Grade-Appropriate Materials Distributed?	No. of Class Presentations	No. of Students Reached	No. of Teachers' Workshops
Grades K-3rd	NO	0	0	0
Grades 4th-6th	NO	0	0	0
Grades 7th-8th	NO	0	0	0
High School	NO	0	0	0
3. Did your Agency's materials meet the state education framework requirements?	NO			
4. When did your Agency begin implementing this program?	5/01/89			

B. School Education Program Expenditures		
	This Year	Next Year
1. Budgeted Expenditures	\$0	\$0
2. Actual Expenditures	\$0	\$0

C. "At Least As Effective As"	
1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	NO

D. Comments
Please note that the entity DWA contracted with to perform its in-classroom school education program (Palm Springs Desert Museum) elected to dissolve its Natural Science Education Program effective July 1, 2004. DWA is currently exploring options for a suitable replacement program.

BMP 09: Conservation Programs for Commercial/Industrial/Institutional (CII) Accounts

A. Implementation	
1. Has your agency identified and ranked COMMERCIAL customers according to use?	NO
2. Has your agency identified and ranked INDUSTRIAL customers according to use?	NO
3. Has your agency identified and ranked INSTITUTIONAL customers according to use?	NO
4. Is your agency operating on CII water use survey and customer incentives program for the purpose of complying with BMP 09 under this option?	NO
5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option?	YES
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?	NO
7. Estimated annual savings (AF/yr) from site-verified actions taken by the agency since 1991.	0
8. Estimated annual savings (AF/yr) from non-site verified actions taken by agency since 1991.	0

B. "At Least as Effective As"	
1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	NO

C. Explanation
DWA chooses to perform neither Option A (item A.4.), nor Option B (items A.5. through A.8.). The reasons are contained in the comments below. "Yes" was checked for Option B as CII accounts are tracked for purposes of the mailings listed below, but not specifically for BMP 9.
DWA does not differentiate between commercial and industrial accounts. All multi-family residential connections are classified as commercial. Since DWA's studies indicate that the highest potential for water savings exists in landscape irrigation practices, the bulk of DWA's conservation efforts have been focused in this direction. DWA does not, however, discard the potential for water savings in its commercial

accounts. Annual consumptive use reports and conservation literature are mailed to most of DWA's large commercial accounts (nearly 200 customers annually).

Even though DWA has chosen to perform "Water Audits" solely on irrigated areas (on the basis that DWA believes it is most cost effective to do so), the consumptive use program has received good response from its customers.

Additionally, DWA co-sponsors the Mobile Irrigation Laboratory Evaluation Program implemented by the Coachella Valley Resource Conservation District. The Mobile Lab team evaluates large water users and issues a comprehensive report. A follow-up evaluation is provided after five years. Frequently, customers will request a mobile lab survey following the mailings previously mentioned.

BMP 09a: CII ULFT Water Savings

1. Did your agency implement a CII ULFT replacement program in the reporting year?	NO
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A. Implementation

1. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

DWA studies have concluded that as much as 80 percent of all residential water use is for landscape irrigation. Therefore, DWA has concluded that it is more cost effective to concentrate the bulk of its efforts on reducing water consumption in the landscape. DWA, therefore, has chosen to direct its resources into performing BMP 5 (refer to Appendix C, "Water Conservation of the Desert Water Agency").

BMP 10: Wholesale Agency Assistance Programs

DWA is a retail water agency and therefore does not report on this BMP.

BMP 11: Conservation Pricing

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential		
a.	Water Rate Structure	Uniform
b.	Sewer Rate Structure	Non-Volumetric Flat Rate
c.	Total Revenue from Volumetric Rates	\$9,136,703
d.	Total Revenue from Non-Volumetric Charges, Fees, and other Revenue Sources	\$2,155,873
2. Commercial		
a.	Water Rate Structure	Uniform
b.	Sewer Rate Structure	Uniform
c.	Total Revenue from Volumetric Rates	\$3,706,689

d.	Total Revenue from Non-Volumetric Charges, Fees, and other Revenue Sources	\$ amount from these accounts is contained in the residential total.
3.	Industrial	
a.	Water Rate Structure	Service Not Provided
b.	Sewer Rate Structure	Service Not Provided
c.	Total Revenue from Volumetric Rates	\$0
d.	Total Revenue from Non-Volumetric Charges, Fees, and other Revenue Sources	\$0
4.	Institutional / Government	
a.	Water Rate Structure	Uniform
b.	Sewer Rate Structure	Uniform
c.	Total Revenue from Volumetric Rates	\$588,258
d.	Total Revenue from Non-Volumetric Charges, Fees, and other Revenue Sources	\$ amount from these accounts is contained in the residential total.
5.	Irrigation	
a.	Water Rate Structure	Uniform
b.	Sewer Rate Structure	Service Not Provided
c.	Total Revenue from Volumetric Rates	\$490,926
d.	Total Revenue from Non-Volumetric Charges, Fees, and other Revenue Sources	\$0
6.	Other	
a.	Water Rate Structure	Service Not Provided
b.	Sewer Rate Structure	Service Not Provided
c.	Total Revenue from Volumetric Rates	\$0
d.	Total Revenue from Non-Volumetric Charges, Fees, and other Revenue Sources	\$0

B. Conservation Pricing Program Expenditures		
	This Year	Next Year
1.	Budgeted Expenditures	\$0
2.	Actual Expenditures	\$0

C. "At Least as Effective As"	
1.	Is your AGENCY implementing an "at least as effective as" variant of this BMP?
	NO

D. Comments
DWA does not classify accounts as "Industrial". All industrial (light industrial) customers are included under "Commercial"; therefore "Service Not Provided" is listed within the "Industrial" category.

BMP 12: Conservation Coordinator

A. Implementation		
1.	Does your Agency have a conservation coordinator?	YES
2.	Is this a full time position?	YES
3.	If your agency supplies the conservation coordinator:	
a.	What percent is this conservation coordinator's position?	38%
b.	Coordinator's Name	Michael F. Bergan
c.	Coordinator's Title	Administrative Services Officer
d.	Coordinator's Experience and Number of Years	25 Years
e.	Date Coordinator's position was created	01/02/1977
4.	Number of conservation staff, including Conservation Coordinator	1

B. Conservation Pricing Program Expenditures			
		This Year	Next Year
1.	Budgeted Expenditures	\$85,800	
2.	Actual Expenditures	\$43,651	

C. "At Least as Effective As"		
1.	Is your AGENCY implementing an "at least as effective as" variant of this BMP?	NO

BMP 13: Water Waste Prohibition

A. Requirements for Documenting BMP Implementation		
1.	Is a water waste prohibition ordinance in effect in your service area?	YES
a.	If YES, describe the ordinance:	
	DWA adopted Ordinance No. 31, <u>An Ordinance of the Board of Directors of Desert Water Agency Prohibiting the Waste of Water in February 1982</u> (refer to Appendix B). Said Ordinance prohibits the waste of water supplied by DWA, discusses actions to be taken, states customers rights and exemptions, and gives DWA the authority to enforce the Ordinance.	
2.	Is a copy of the most current ordinance(s) on file with CUWCC?	YES
a.	List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second box:	
	Desert Water Agency	Typically violators have been cooperative in eliminating waste after being sent a written notice informing them of the situation.

B. Implementation		
1.	Indicate which of the water uses listed below is prohibited by your agency or service area.	
a.	Gutter flooding	YES
b.	Single-pass cooling system for new connections	NO
c.	Non-recirculating systems in all new conveyor or car wash systems	YES
d.	Non-recirculating systems in all new commercial laundry systems	NO

e.	Non-recirculating systems in all new decorative fountains	NO
2.	Describe measures that prohibit water uses as listed above. In cases such as gutter flooding, written notice is sent to the subject customer, or a blanket mailing is conducted throughout neighborhoods with high incidences of waste. In areas where DWA is responsible for providing sewage collection, DWA requires submittal of plans, and then checks them to verify that recirculation systems are installed. In situations where water is used in cooling systems and decorative fountains, it is not practical to use non-recirculating types due to the cost associated with water.	
Water Softeners:		
3.	Indicate which of the following measures your agency has supported in developing state law:	
a.	Allow the sale of more efficient demand-initiated regenerating DIR models.	NO
b.	Develop minimum appliance efficiency standards that:	
i)	Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used.	NO
ii)	Implement an identified maximum number of gallons discharged per gallon of soft water produced.	NO
c.	Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or ground water supply.	NO
4.	Does your agency include water softener checks in home water audit programs?	NO
5.	Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient time models?	NO

C. Water Waste Prohibition Program Expenditures
Water Waste Prohibition Program costs are included in the Conservation Staff Program Expenditures, BMP 12.

D. "At Least as Effective As"	
1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	NO

BMP 14: Residential ULFT Replacement Programs

A. Implementation		
	Single-Family Accounts	Multi-Family Accounts
1. Does your Agency have program(s) for replacing high-water-using toilets?	NO	NO
2. Is a toilet retrofit on resale ordinance in effect for your service area?		NO
3. Is a toilet retrofit or resale ordinance in effect for your service area?		NO

B. Residential ULFT Program Expenditures		
	This Year	Next Year
1. Budgeted Expenditures	\$0	\$0
2. Actual Expenditures	\$0	\$0

C. "At Least As Effective As"	
1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	NO
<p>DWA studies have concluded that as much as 80 percent of all residential water use is for landscape irrigation. Therefore, DWA has concluded that it is most cost effective for DWA to concentrate the bulk of its efforts on reducing water consumption in the landscape. DWA, therefore, has chosen to direct its resources into performing BMP 5 (refer to Appendix C, "Water Conservation Program of the Desert Water Agency").</p> <p>DWA does recognize that Ultra Low Flush Toilets (ULFT) save substantial quantities of water in comparison to older models. DWA, therefore, has supported legislation requiring installation of ULFTs in building applications. City and County Standards require the installation of ULFTs. Building department personnel verify that these standards are being enforced.</p>	

SECTION VII
WATER SHORTAGE CONTINGENCY PLAN

**SECTION VII
WATER SHORTAGE CONTINGENCY PLAN**

A. PREPARATION FOR CATASTROPHIC WATER SUPPLY INTERRUPTION

Law 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:

10632 (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.

1. Water Shortage Emergency Response

DWA frequently reviews and updates its Emergency Response Plan, with the most recent update in August 2005. DWA has developed specific disaster related procedures which guide staff in responding efficiently to catastrophic interruptions of water supply. Disaster related drills are conducted periodically involving DWA staff, City, Fire, and County personnel. DWA also coordinates its planning efforts with the local hospital. DWA staff periodically attends local disaster preparedness coordinating meetings, and closely adheres to all disaster response training requirements.

Table 18 Actions in Preparation for a Catastrophe		
Possible Catastrophe	Examples of Actions	Check if Discussed
Regional Power Outage	Determine what constitutes a proclamation of a water shortage.	✓
Earthquake	Restrict water use.	✓
	Develop alternative water supplies.	✓
	Contact and coordinate with other agencies.	✓
	Create an Emergency Response Team/Coordinator.	✓
	Create a catastrophe preparedness plan.	✓
	Put employees/contractors on-call.	✓
	Develop methods to communicate with the public.	✓
	Develop methods to prepare for water quality interruptions.	✓

Water Supply. Refer to the Reliability Planning section for a discussion regarding short- and long-term water supplies.

Water Transfers. Refer to the Transfer or Exchange Opportunities section for a discussion regarding water transfers.

B. WATER SHORTAGE CONTINGENCY ORDINANCE / RESOLUTION

Law 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:

10632 (h) A draft water shortage contingency resolution or ordinance.

1. Desert Water Agency's Water Shortage Response

In October 1988, the DWA adopted Ordinance No. 45, An Ordinance of the Board of Directors of the Desert Water Agency Restricting Water Use During Water Supply Emergencies (refer to Appendix B). The Ordinance details specific actions to be taken during water shortage emergencies that are deemed to be in the best interest of the public at large.

Ordinance No. 45 describes specific rules and regulations which will be in effect, should the Board declare a water supply emergency, and illustrates the methods in which the public shall be informed. Four stages of severity are discussed, each containing specific restrictions corresponding to the degree of incidence.

Also included are exemptions to the restrictions, and penalties for violations. Methods for which the public may voice their objection to any penalties levied for violation are also described. To date, there have been no incidents requiring any portion of this ordinance to go into effect within the DWA Service Area.

C. STAGES OF ACTION

Law 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:

10632 (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.

1. Rationing Stages and Reduction Goals

DWA has established four stages of water use restrictions to be evoked during water supply emergencies. The stages involve voluntary and mandatory rationing, depending on the causes, severity, and anticipated duration of the water supply shortage. The stages are summarized below in Table 19.

Table 19 Water Supply Shortage Stages and Conditions Rationing Stages				
Stage	Percent Shortage	Type of Rationing Program	Customer Actions	Customer Reduction Goal
1 Normal Conditions	25-40%	Voluntary Conservation Measures	Use water wisely / Prevent waste	15%
2 Water Supply Shortage Alert	40-50%	Mandatory Conservation Measures	Irrigation restrictions / Specific use restrictions	25%
3 Water Shortage Warning	50-60%	Stronger Mandatory Conservation Measures	Irrigation restrictions / Swimming pool and fountain filing is prohibited / Specific use restrictions / No new construction meters	30%
4 Water Shortage Emergency	60%+	Severe Water Use Prohibitions	Irrigation is prohibited / Swimming pool and fountain filing is prohibited / Construction water use is prohibited / Specific use prohibitions	50%

DWA has a civic and legal responsibility to provide for the water-related health and safety needs of the community. In order to minimize the social and economic impact of water shortages, DWA will prudently manage water supplies.

As previously described in various sections of this Plan, DWA obtains its water supply from stored local ground water, local surface water, and imported water to recharge the Whitewater River Subbasin, thus augmenting ground water supplies. Since the majority of the supply is pumped from approximately 30 deep wells located throughout the community, the inability to pump water from a less than significant number of wells will not result in a shortage situation. Additionally, DWA's reliance on stored ("banked") ground water as its primary source provides a sufficient cushion against dry years.

Due to the current and historic condition of overdraft of the Whitewater River Subbasin (where ground water extractions exceed natural replenishment) and the need to import water to recharge the ground water supply, DWA has established a Stage 1 condition which is, and will remain, in effect. This involves voluntary conservation measures. Stages 2, 3, and 4 restrictions will most likely be triggered by a large scale emergency such as a sustained power outage or earthquake disaster. The specific stage in which the Board elects to implement will be determined by the type and severity of the event and the water supply conditions at the time.

2. Priority by Use

Priorities for use of available potable water supplies during shortage situations are as follows:

- A. Hospitals and disaster care centers.
- B. Interior residential needs as required for health and safety.
- C. Fire fighting needs.
- D. Commercial / Industrial needs.
- E. Existing landscaping.
- F. New construction needs.

3. Health and Safety Requirements

DWA's primary goal for the ordinance restricting water usage during emergencies is to meet the minimum health and safety requirements of its customers throughout the course of the event.

During a Stage 1 condition, compliance is voluntary with emphasis on using water wisely. Stage 2, however, involves a possible inability to meet customer needs and therefore sets mandatory restrictions. In Stage 3 to 4 situations, DWA is clearly unable to meet needs and more serious restrictions are required to be in effect.

D. PROHIBITIONS, CONSUMPTION REDUCTION METHODS, AND PENALTIES

Law 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:

10632 (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.

10632 (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.

10632 (f) Penalties or charges for excessive use, where applicable.

1. Mandatory Prohibitions on Water Wasting

Detailed in Ordinance No. 45 (Appendix B), An Ordinance of the Board of Directors of the Desert Water Agency Restricting Water Use During Water Supply Emergencies, and Ordinance No. 31 (Appendix B), An Ordinance of the Board of Directors of the Desert Water Agency Prohibiting the Waste of Water, are specific prohibitions and penalties on water wasting which may result in cases of noncompliance. Also contained within each ordinance are methods in which the public may voice their objection to any penalty levied.

The specific prohibitions associated with each stage are shown in Table 20 below. As previously stated, a Stage 1 condition is and will remain in effect at all times. Additionally, Ordinance No. 31 prohibits any actions which are deemed wasteful, such as excessive landscape irrigation, severe overspray conditions, or failure to remedy a wasteful condition within a reasonable period of time.

Table 20 Mandatory Prohibitions	
Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
Using potable water to wash driveways, parking lots, or other hard surfaced area, or building exteriors at any time, except to alleviate immediate fire hazards is prohibited	2
Irrigating parks, golf courses (golf courses using reclaimed water are exempt from this prohibition), and school grounds during daytime hours (sunrise to sunset)	2
Serving drinking water to customers at a restaurant, hotel, café, cafeteria, or other public place where food is sold, unless expressly requested	2
Commercial nurseries using water between the hours of 6:00am and midnight	2
Filling or adding water to swimming pools, wading pools, spas, ornamental ponds, fountains, and artificial lakes	3
Commercial Nurseries shall discontinue all watering and irrigation, unless reclaimed water is used	4
Washing cars, boats, trailers, aircraft, or other vehicles is prohibited, except when done by commercial car wash establishments using recycled or reclaimed water	4
Using potable water to clean, fill, or maintain decorative fountains, lakes or ponds unless such water is recycled.	At All Times
Watering of lawns and irrigating landscape between the hours of 10:00 am and 5:00 pm	At All Times
Washing cars, boats, trailers, aircraft, or other vehicles by hose without a shutoff nozzle and bucket	At All Times

Table 21 Consumption Reduction Methods	
Consumption Reduction Method	Stage When Method Takes Effect
Demand reduction program	All Stages
Flow restriction	4
Use prohibitions	All Stages
No new construction meter permits shall be issued by DWA	3 and 4
Restrict for only priority uses	4
All existing construction meters shall be turned off and locked	4
Water shortage pricing	All Stages
Voluntary rationing	1
Mandatory rationing	2, 3, 4
Education Programs	All Stages
Use non-potable water for construction purposes	All Stages

2. Excessive Use Penalties

Any customer violating the regulations and restrictions on water use set forth in Ordinance No. 45, shall receive a written warning for the first such violation. Upon a second violation, a 25 percent surcharge is applied to the customer's water bill. A third violation subjects the customer to a 50 percent surcharge and installation of a flow

restrictor. All subsequent violations result in discontinuance of service. More complete descriptions of each penalty assessment and the methods in which the customer is to be notified are found in the complete Ordinance contained in Appendix B.

E. REVENUE AND EXPENDITURE IMPACTS AND MEASURES TO OVERCOME IMPACTS

Law 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:

10632 (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...

10632 (g) [An analysis of the impacts of each of the] proposed measures to overcome those [revenue and expenditure] impacts, such as the development of reserves and rate adjustments.

During a water supply emergency, depending on restrictions necessary and as water availability and use decreases, revenue from water sales will also decrease. DWA maintains and will continue to maintain sufficient funds in reserve to maintain operations during and following such periods of reduced use. As such, rate adjustments are not anticipated; however, rate adjustments can be considered, if necessary.

F. REDUCTION MEASURING MECHANISM

Law 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:

10632 (i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

1. Mechanism to Determine Reductions in Water Use

Daily production readings are taken by personnel at all water supply sources and all reservoir water levels are monitored on a continual basis. The collected data are reviewed daily to determine water supply adequacy. Such data are then incorporated into monthly reports.

During a water supply emergency, normal monitoring will continue with strict observation and recording of all water supply sources and water reservoir storage. Collected data will be reported directly to the General Manager and/or Assistant General Manager, as deemed appropriate for the emergency conditions, for action.

SECTION VIII
WATER RECYCLING

SECTION VIII WATER RECYCLING

A. WASTEWATER SYSTEM DESCRIPTION

Law 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. To the extent practicable, the preparation of the plan shall be coordinated with local water, wastewater, ground water, and planning agencies and shall include all of the following:

10633 (a) A description of the wastewater collection and treatment systems in the supplier's service area...

1. Introduction

As previously mentioned in this Plan, DWA's Service Area includes the cities of Palm Springs and Cathedral City (portion), and adjoining unincorporated Riverside County areas. The City of Desert Hot Springs, while within the geographical boundaries of DWA, is served by the MSWD. As such, data pertaining to MSWD is included in MSWD's Urban Water Management Plan.

DWA is responsible for providing wastewater service within portions of Cathedral City and unincorporated Riverside County within its Service Area. The City of Palm Springs (City) provides wastewater service within its city limits (primary and secondary treatment). In addition, DWA operates a 10.0 million gallon per day Water Reclamation (Water Recycling) Plant to provide tertiary treatment for recycled water.

Currently, DWA has a wastewater collection system within areas of Cathedral City that have been developed since 1980. Since these areas are located at a lower elevation than the City of Palm Springs Wastewater Treatment Plant (City WWTP), wastewater must be pumped and piped to neighboring CVWD's system for treatment and disposal. Both DWA and the City of Cathedral City are actively involved in the pursuit of a wastewater collection system to serve any remaining areas currently served by septic systems.

2. WateReuse Association Membership

DWA is an active member of the California WateReuse Association, which helps implement water recycling in California.

3. Customer Base

DWA adopted a very aggressive stance regarding expanding the use of recycled water within its Service Area. Presently, there are seven customer locations using tertiary treated recycled water for irrigation purposes, and additional customers are forecasted to be online in the near future. The seven current customer locations are:

- DWA Operations Center
- DWA Recycling Facility
- City of Palm Springs Municipal Golf Course (36 holes)
- City of Palm Springs DeMuth Park
- Mesquite Country Club Golf Course (18 holes)
- Mid-Valley Parkway Median Strips
- Palm Springs High School

An additional three water use sites are proposed for 2006 (Palm Springs Classic Golf Course, Indian Canyons Resort Golf Course, and Sunrise Park). DWA is actively pursuing the expansion of its existing recycled water customer base and it is anticipated that with DWA's proactive approach to obtaining new customers, four additional locations will be served with recycled water prior to 2020.

B. WASTEWATER GENERATION, COLLECTION, AND TREATMENT

Law 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. To the extent practicable, the preparation of the plan shall be coordinated with local water, wastewater, ground water, and planning agencies and shall include all of the following:

10633 (a) A [...] quantification of the amount of wastewater collected and treated...

The use of recycled water plays a key role in DWA's Basin Management Program as it conserves and protects the valuable ground water supply. In 1988, DWA and the City entered into an agreement to treat wastewater. Under the agreement, the City provides primary and secondary treatment at the City WWTP, after which the wastewater is piped to DWA's Water Recycling Plant for tertiary treatment.

DWA's Water Recycling Plant has the ability to process all secondary treated wastewater generated by the WWTP. Currently, DWA's Water Recycling Plant has a 10.0 million gallon per day capacity, but is designed for an ultimate capacity to treat 15.0 million gallons per day. The Water Recycling Plant is expected to ultimately provide about 17,000 AF/yr of recycled water.

High quality tertiary treated recycled water is produced utilizing the following process:

1. Primary Treatment (provided by City WWTP)
2. Secondary Treatment (provided by City WWTP)
3. Tertiary Treatment (provided by DWA's Water Reclamation Plant)
 - a. Chlorination
 - b. Addition of Polymer and Alum
 - c. Filtration
 - d. Chlorination
 - e. Storage and distribution to customers

The recycled water produced by DWA's Water Recycling Plant is approved for all uses, except drinking, by the California Department of Health Services. To illustrate the positive effects of using recycled water, DWA's Operations Center and Water Recycling Facility are both irrigated with recycled water. Also, the C/PS DeMuth Park and Mesquite Country Club Golf Course are irrigated with recycled water.

DWA's Water Recycling Plant has the ability to process all secondary treated wastewater generated by the City WWTP. Since recycled water is dependent upon available wastewater treatment plant effluent, DWA plans to expand the recycled water system and increase wastewater flows by adding irrigated areas in Palm Oasis and Cathedral City. The addition of these areas to the existing system will increase the quantity of wastewater to be treated and increase recycled water use.

Table 22							
Wastewater Collected and Treated							
(AF/yr)							
	2000	2005	2010	2015	2020	2025	2030
Wastewater Collected & Treated in Service Area	8,950	7,300	8,100	8,800	9,500	10,100	10,800
Quantity Meeting Recycled Water Standard	2,900	2,850	6,000	6,000	8,000	8,000	8,000

As noted in Table 22, wastewater flows have declined in recent years. The decline is most likely attributable to water conservation; however, the City of Palm Springs is currently conducting a study to determine the exact cause. Future wastewater flows are projected to increase as the population increases.

C. WASTEWATER DISPOSAL AND RECYCLED WATER USES

Law 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. To the extent practicable, the preparation of the plan shall be coordinated with local water, wastewater, ground water, and planning agencies and shall include all of the following:

10633 (a) A description of the [...] methods of wastewater disposal.

10633 (b) 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.

10633 (c) 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, ground water recharge, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

10633 (d) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years.

1. Disposal of Wastewater (Non-Recycled)

Presently, the Water Recycling Plant has the ability to process all secondary treated wastewater generated by the City WWTP; however, DWA's current recycled water customer base does not require the full capacity of the treatment plant to meet their needs.

Any secondary treated sewage produced above and beyond DWA's recycled water customer requirements is discharged into percolation ponds for ground water recharge.

Table 23 Disposal of Wastewater (Non-Recycled) (AF/yr)							
Method of Disposal	Treatment Level	2005	2010	2015	2020	2025	2030
Percolation Ponds	Secondary	4,450	2,100	2,800	1,500	2,100	2,800
Total		4,450	2,100	2,800	1,500	2,100	2,800

2. Current and Potential Uses of Recycled Water

Within DWA, recycled water is utilized for irrigation of large turf areas, including, but not limited to, large turf areas, such as golf courses and parks.

Table 24 Recycled Water Uses – Actual (AF/yr)		
Type of Use	Treatment Level	2005
Landscape	Tertiary	2,850
Ground Water Recharge	Secondary	4,450
Total		7,300

Currently, DWA is projecting that all recycled water produced by its facility will be utilized for irrigation purposes, such as golf courses, medians, freeway landscape, schools, cemeteries, and parks. Other uses for recycled water could result; however, due to the large quantity of water required for irrigation within DWA's boundaries, it is wise to assume that the predominant use will be for irrigation. Irrigation use also has the highest potential for conserving valuable ground water as well.

Table 25 Recycled Water Uses – Potential (AF/yr)						
Type of Use	Treatment Level	2010	2015	2020	2025	2030
Landscape	Tertiary	6,000	6,000	8,000	8,000	8,000
Ground Water Recharge	Secondary	2,100	2,800	1,500	2,100	2,800
Total		8,100	8,800	9,500	10,100	10,800

As supplemental irrigation is required year-round, even during the cooler winter months, recycled water use will continue throughout the year. The months with the highest usage are April through October, with the remaining winter months requiring approximately 50 percent less.

D. ENCOURAGING RECYCLED WATER USE

Law 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. To the extent practicable, the preparation of the plan shall be coordinated with local water, wastewater, ground water, and planning agencies and shall include all of the following:

10633 (e) 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.

1. Marketing Strategy

As previously stated within this Plan, DWA has adopted a very aggressive stance toward obtaining new recycled water customers. This strategy currently occupies the primary focus of DWA's water conservation efforts as it has the ability to conserve the highest percentage of ground water.

DWA recognizes that in order to develop the widespread use of recycled water, public acceptance and cost incentives are necessary. In 1999, DWA undertook a cooperative 10-year study at the facility with the U.S. Department of Agriculture's Natural Resources Conservation Service, whereby the effects of tertiary treated recycled water on water-efficient plants was compared to that of potable water. The study has been concluded and the results published in the form of a booklet in 1999.

The purpose of the study was to show potential customers, specifically, how plants associated with DWA's Service Area perform using tertiary recycled water. In almost all cases, plants utilizing recycled water performed better than those irrigated with domestic water. It is thought that results gleaned from this study will set aside potential customers' concerns regarding the effects of recycled water on their plantings. Additionally, potential existing landscape customers within reasonable proximity to DWA's Facility have been targeted, and discussions with the appropriate representatives are underway.

2. Proposed Actions to Encourage Use of Recycled Water

To encourage customers to convert to recycled water, DWA offers the following incentives:

- DWA participation in the cost of constructing off-site water recycling facilities.
- In the event DWA is unable to provide recycled water, potable water will be supplied in the interim.
- Financial incentives in terms of one-half of domestic water costs.
- Technical assistance provided by DWA to recycled water customers at no charge.
- DWA is able to "guarantee" recycled water supply reliability (with qualifying statements) even during shortages (excluding disaster conditions).
- Comparisons of costs to drill, operate, and pay replenishment charges associated with private wells vs. utilizing recycled water.

Historically, the cost of recycled water has been the primary incentive for landscape customers to use recycled water in lieu of ground water. Therefore, it is wise to assume that DWA's continued expansion of recycled water facilities in addition to financial incentives, will play a significant role in the increase in quantity of recycled water use.

3. Projected Results

The following tabular data are the projected results of DWA's recycled water marketing efforts:

Table 26					
Projected Future Use of Recycled Water in Service Area					
(AF/yr)					
Type of Use	2010	2015	2020	2025	2030
Landscape	6,000	6,000	8,000	8,000	8,000
Ground Water Recharge	2,100	2,800	1,500	2,100	2,800
Total projected use of Recycled Water	8,100	8,800	9,500	10,100	10,800

Table 27		
Recycled Water Uses – 2000 Projection Compared with 2005 Actual		
(AF/yr)		
Type of Use	2000 Projection for 2005	2005 Actual Use
Landscape	6,000	2,850
Ground Water Recharge	Not Projected	4,450
Total	6,000	7,300

DWA's projected recycled water use in the 2000 UWMP was based on recycled water projections for anticipated golf course growth. While the actual use in 2005 was half of that projected in 2000, additional golf courses are forecasted to be online in the near future, which is expected to increase sales significantly.

E. RECYCLED WATER OPTIMIZATION PLAN

Law 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. To the extent practicable, the preparation of the plan shall be coordinated with local water, wastewater, ground water, and planning agencies and shall include all of the following:

10633(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.

1. Plan for Optimizing the Use of Recycled Water

As previously discussed, due to the high irrigation requirements within DWA's Service Area, the optimum use for recycled water is in landscape irrigation. Large irrigated areas not currently receiving recycled water are irrigated with domestic water or pumped ground water supplied through privately owned wells. In such cases, a replenishment fee is levied upon the customer for water pumped, payable DWA.

In the year 2000, an additional storage reservoir was constructed to house tertiary treated water for purposes of meeting future customer's needs. Additional storage reservoir locations are being considered. All recycled water mains installed are sized to meet future customer demands. This assures that DWA will be able to meet future requirements.

Table 28 Participating Agencies	
Participating Agencies	Role
City of Palm Springs	In 1988, DWA and the City of Palm Springs entered into an agreement where the City of Palm Springs would provide primary and secondary wastewater treatment and DWA would provide tertiary treatment.

Currently, DWA's recycled water distribution system is limited because DWA's current recycled water customer base does not require the full capacity of the treatment plant to meet their needs. DWA's Board of Directors and Staff are fully committed to increasing the use of recycled water as a means of conserving the community's domestic water supply to the greatest extent possible. As new projects develop and existing developments come on-line, DWA's ability to service more customers will increase. DWA is planning additional pipelines which will expand municipal use of recycled water over time.

APPENDIX A
MINUTE ORDER FOR ADOPTION OF
THE URBAN WATER MANAGEMENT PLAN

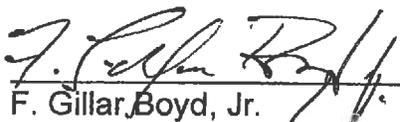
**A MINUTE ORDER OF THE BOARD OF DIRECTORS
OF THE DESERT WATER AGENCY
FOR ADOPTION OF
2005 URBAN WATER MANAGEMENT PLAN**

Following a duly noted public hearing, on motion by Director Byrne, seconded by Director Boyd, and unanimously carried, the 2005 Urban Water Management Plan was adopted on December 6, 2005.



Ronald E. Starrs
President

ATTEST:



F. Gillar Boyd, Jr.
Secretary-Treasurer

I, Janis L. Tefteller, Assistant Secretary of the Desert Water Agency, hereby certify that the above Minute Order reflects the unanimous vote of the Board of Directors of Desert Water Agency at their duly called and held meeting at the office of said Agency on the 6th day of December 2005.



Assistant Secretary of the Desert Water Agency

APPENDIX B

- **ORDINANCE NO. 31 - PROHIBITING THE WASTE OF WATER**
- **ORDINANCE NO. 45 - RESTRICTING WATER USE DURING WATER SUPPLY EMERGENCIES**

ORDINANCE NO. 31

AN ORDINANCE OF THE BOARD OF DIRECTORS
OF DESERT WATER AGENCY PROHIBITING THE
WASTE OF WATER

WHEREAS, Desert Water Agency (hereinafter "Agency"), is a public agency organized under the Desert Water Agency Law, Water Code Appendix 100-1, et seq., to provide water service among other purposes to the water users within the boundaries of the Agency; and

WHEREAS, the Agency's chief water sources are stream diversions, groundwater extractions within the Whitewater River Subbasin of the Upper Coachella Valley groundwater basin, and water obtained under its State Water Contract through an exchange agreement with The Metropolitan Water District; and

WHEREAS, during the past four years, total water production within the Whitewater River Subbasin, including surface diversions and pumped groundwater, has averaged slightly more than 104,000 acre feet per year. Production within the Desert Water Agency area has approximated one-third of such production, with the balance being produced for use within the Coachella Valley Water District. Such production, together with that pumped or diverted by other water producers in the basin, would have resulted without groundwater replenishment in an annual overdraft of approximately 36,000 acre feet per year within the basin; and

WHEREAS, since 1973, the Agency and Coachella Valley Water District have replenished the Whitewater River Subbasin with approximately 116,000 acre feet of imported Colorado River water, and as a result annual groundwater overdraft has been reduced though not eliminated; and

WHEREAS, while it is anticipated that imported water may eventually and for a limited period of time offset groundwater overdraft on an annual basis, continued growth in population will create water requirements which are likely to place further demands on groundwater in storage. The extent of annual overdraft in the future will depend on consumer demands and uses, and on the availability of local and imported supplies; and

WHEREAS, cumulative groundwater overdraft within the Whitewater River Subbasin has been estimated to be at least 400,000 acre feet. Although groundwater replenishment will reduce annual groundwater overdraft, it will have little effect on cumulative groundwater overdraft which has been occurring for more than 30 years within the basin. The Upper Coachella Valley groundwater basin is overdrawn and will remain so even with importation of water from outside the basin. Continued groundwater overdraft will increase pump lifts and could possibly cause aquifer subsidence. It could also adversely affect water quality by altering basin conditions, such as groundwater gradients and groundwater flow lines; and

WHEREAS, energy costs for pumping groundwater have increased 200% over the past 10 years, and are likely to continue to increase in the future; and

WHEREAS, pursuant to the directive of Article X, Section 2 of the California Constitution establishing the State's policy of water conservation and prohibition against waste, and pursuant to the statutory authority granted by Sections 375-377 and Section 1009 of the California Water Code, and by Section 100 15(13) of the Appendix to the California Water Code, the Agency has engaged in a vigorous and ongoing program of water conservation, and this Ordinance is part of the Agency's Water Conservation Program; and

WHEREAS, the Agency finds that it is necessary and in the public interest to prohibit the waste of Agency water in order to conserve water supplies for the greatest public benefit, to protect and conserve the natural groundwater resources, to prevent or reduce future shortages of water, and

WHEREAS, the Agency further finds that the specific rules, regulations and restrictions established herein are necessary in order to prevent the waste of Agency water supplies, and are in addition to any voluntary conservation programs undertaken by water users within the service area of the Agency;

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF DIRECTORS OF THE DESERT WATER AGENCY AS FOLLOWS:

SECTION 1: DEFINITIONS.

1.1 "Agency" -- Desert Water Agency.

1.2 "Board" -- The Board of Directors of the Desert Water Agency.

1.3 "General Manager: -- The General Manager of the Desert Water Agency.

1.4 "Water users" -- Any person, firm, partnership, association, corporation or political entity using water obtained from the water system of the Desert Water Agency.

1.5 "Waste" -- Any unreasonable or non-beneficial 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.

1.6 "Water" -- Water supplied by the Desert Water Agency.

SECTION 2: PROHIBITIONS ON WASTE.

2.1 No water user shall waste any water supplied through the distribution facilities of the Agency. The following uses of water are specifically found and determined to constitute waste:

(a) The use of water for any purpose, including landscape irrigation, which consumes or for which

there is applied substantial amounts of excess water beyond the reasonable amount required by such use, whether such excess water remains on the site, evaporates, percolates underground, goes into the sewer system, or is allowed to run off the property. Every water user is deemed to have under his control at all times the water distribution lines and facilities, other than Agency facilities, through which water is being supplied and used, and to know the manner and extent of his water use and excess run-off.

(b) The excessive use, loss, or escape of water through breaks, leaks or malfunctions in the water user's plumbing or distribution facilities for any period of time after such escape of water should reasonably have been discovered and corrected.

(c) The use of spray-type sprinklers or other irrigation devices in such a manner, or under such weather conditions, as to permit or cause overspray into the street, gutter or other hard surface, or the escape or flow of water into the street or gutter, in such amounts or frequencies as to create a hazardous condition for pedestrians or vehicular traffic, or to impede vehicular or pedestrian traffic, or to cause damage to the public streets, curbs or gutters. Because prolonged periods of windy weather may cause the loss of landscaping materials unless spraying or other irrigation methods are used, the occasional overspray which necessarily occurs during such weather conditions shall be an exception to this section.

SECTION 3: APPEALS AND EXCEPTIONS.

3.1 Application for Exception Permit. The General Manager of the Agency may grant permits for uses of water otherwise prohibited hereby if he finds and determines that special circumstances make compliance not reasonably possible, or that the restrictions herein would either:

(a) Cause an unnecessary and undue hardship to the water user or to the public; or

(b) Cause an emergency condition affecting the health, sanitation, fire protection or safety of the water user or of the public; or

(c) Prohibit operation of an efficient automatic or drip irrigation system which would use less water than alternative methods or irrigation.

(d) Require extensive construction, reconstruction, redesign, or equipment changes to an existing system or systems at a cost which is unreasonable in relation to the water and energy savings intended to be achieved by such changes.

Such exceptions may be granted only upon application in writing therefor. Upon granting any such exception permit, the General Manager may impose any conditions he determines to be just and proper, including a condition that such exceptional use be brought into compliance within a reasonable period of time.

SECTION 4: CONCURRENT AUTHORITY.

4.1 The Desert Water Agency, its manager and designated employees, have the duty and are authorized to enforce all provisions of this Ordinance, with the qualification that the City of Palm Springs through enforcement of Sections 14.24.020-14.24.060 of the Palm Springs Municipal Code, the City of Cathedral City, and the County of Riverside as to unincorporated territory within the Agency, are recognized to have concurrent authority for, and shall have the primary responsibility for the control of water flowing in the streets where such occurs within their respective jurisdictions.

SECTION 5: ENFORCEMENT.

5.1 First Violation. For a first violation, the Agency shall issue a written notice of violation to the water user violating the provisions of this Ordinance.

5.2 Second Violation; 25% Surcharge. For a second violation of this Ordinance within a 12-month period, a one-month surcharge is hereby imposed in an amount equal to 25% of the previous month's water bill for the meter through which the wasted water was supplied.

5.3 Third Violation; 50% Surcharge; Installation of Flow Restrictor. For a third violation of this Ordinance within a 12-month period, a one-month penalty

surcharge is hereby imposed in an amount equal to 50% of the previous month's water bill for the meter through which the wasted water was supplied. In addition to the surcharge, the Agency 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 for installing a flow-restricting device shall be based upon the size of the meter and the cost of installation but shall not be less than \$25. The charge for removal of the flow-restricting device and restoration of normal service shall be \$25 if restoration of normal service is performed during the hours of 8:00 a.m. to 4:00 p.m. on regular working days. If the removal of the flow-restricting device and restoration of normal service is made after regular working hours, on holidays or weekends, the restoration service charge shall be \$40.

5.4 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 5.1 hereof, the penalty surcharge provided in Section 5.3 hereof shall be imposed and the Agency shall 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 \$25. Such restoration of service shall not be made until the General Manager of the Agency has determined that the water user has provided reasonable assurances that future violations of this Ordinance by such user will not occur.

SECTION 6: NOTICE.

6.1 For a first violation, written notice thereof may be given to the customer personally or by regular mail.

6.2 If the penalty assessed is a surcharge for a second or third violation, notice may be given by regular mail.

6.3 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 whatever, notice of the violation shall be given in the following manner:

(a) By giving written notice thereof to the customer personally; or

(b) If he be absent from his place of residence and from his 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 customer at either his place of business or residence; or

(c) If such place of residence and business cannot be ascertained, or a person of suitable age or discretion there cannot be found, 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 customer at the place where the property is situated.

Said notice shall contain, in addition to the facts of the violation, a statement of the possible penalties for each violation and a statement informing the customer of his right to a hearing on the violation.

SECTION 7: HEARING.

Any customer against whom a penalty is levied pursuant to this section shall have a right to a hearing, in the first instance by the General Manager, with the right of appeal to the Board of Directors, on the merits of the alleged violation upon the written request of that customer within 15 days of the date of notification of the violation.

SECTION 8: RESERVATION OF RIGHTS.

The rights of the Agency hereunder shall be cumulative to any other right of the Agency to discontinue service. All monies collected by the Department pursuant to

any of the penalty provisions of this Chapter shall be deposited in the Operating Fund as reimbursement for the Agency's costs and expenses of administering and enforcing this Ordinance.

SECTION 9: SEVERABILITY.

If any section, subsection, sentence, clause or phrase of this Ordinance is for any reason held to be unconstitutional or invalid, such decision shall not affect the validity of the remaining portions of this Ordinance.

SECTION 10: The Clerk of the Desert Water Agency shall attest to the passage of this Ordinance and shall cause the same to be published in a newspaper of general circulation, in the City of Palm Springs.

ADOPTED this 16th day of February, 1982

Walter H. Hutchinson
President

ATTEST:

Robert E. Hird
Secretary

ORDINANCE NO. 45

ORDINANCE OF THE BOARD OF DIRECTORS OF
DESERT WATER AGENCY RESTRICTING WATER
USE DURING WATER SUPPLY EMERGENCIES

WHEREAS, Desert Water Agency (hereinafter "Agency") is a public agency organized under the Desert Water Agency Law, Water Code Appendix Section 100-1, et seq., to provide water service among other purposes to the water users within the boundaries of the Agency; and

WHEREAS, the Agency is authorized by Water Code Appendix Section 100-15 (13) to restrict the use of Agency water during a threatened or existing water shortage, and to prohibit the waste or the use of Agency water during such periods for any purpose other than domestic uses or such other uses as may be determined by the Agency to be necessary; and,

WHEREAS, the Agency is further authorized by Water Code §350 et seq. to declare a water shortage emergency and by Water Code §375-377 to adopt water conservation programs; and

WHEREAS, the Agency finds and determines that the adoption of water conservation rules and regulations is necessary to (1) protect the health, safety and welfare of the inhabitants of the district, (2) assure the maximum beneficial use of the water supplies of the Agency, and (3) ensure that there will be sufficient water supplies to meet

the basic needs of human consumption, sanitation and fire protection; and

WHEREAS, the Agency further finds that the specific rules, regulations and restrictions established herein are necessary in the event of an emergency which is the cause of a water supply shortage;

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF DIRECTORS OF THE DESERT WATER AGENCY AS FOLLOWS:

SECTION 1: DEFINITIONS.

1.1 "Agency" -- Desert Water Agency.

1.2 "Board" -- The Board of Directors of the Desert Water Agency.

1.3 "Emergency Supply Shortage" -- Any water shortage caused by an earthquake, loss of electrical power, pipe line breakage, or any other threatened or existing water shortage caused by a disaster or facility failure which results in Agency inability to meet the water demands of its customers.

1.4 "General Manager" -- The General Manager of the Desert Water Agency.

1.5 "Waste" -- 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.

1.6 "Water users" -- Any person, firm, partnership, association, corporation or political entity using water obtained from the water system of the Desert Water Agency.

1.7 "Water" -- Water supplied by the Desert Water Agency.

SECTION 2: NOTICED PUBLIC HEARING PRIOR TO MANDATORY CONSERVATION.

Except when an emergency is caused by the breakage or failure of a dam, pump, pipe line or conduit, a noticed public hearing shall be held prior to the adoption of stages 2, 3, or 4 of the Water Supply Plan for Emergency Supply Shortage as set forth in Sections 3.2, 3.3, and 3.4 below. Notice of the time and place of hearing shall be published at least seven days prior to the date of hearing in a newspaper printed, published, and circulated within the area in which the water supply is distributed, or if there is no such newspaper, in any newspaper printed, published, and circulated in the County in which the area is located.

SECTION 3: WATER SUPPLY PLAN FOR EMERGENCY SUPPLY SHORTAGE.

3.1 Stage No. 1. Normal Conditions: Voluntary Conservation Measures.

Normal conditions shall be in effect when the Agency 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.

3.2 Stage No. 2. Water Shortage Alert:
Mandatory Conservation Measures.

In the event of a sudden and unexpected water supply shortage which could prevent the Agency from meeting the water demands of its customers, the Board of Directors shall immediately hold a public hearing at which consumers of the water supply 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 dam, pump, pipe line or conduit causing an immediate emergency. The Board may then declare a water shortage emergency condition to prevail, and the following rules and regulations shall be in effect immediately following such declaration.

(1) washing driveways, parking lots, or other hard surfaced area, or building exteriors at any time, except to alleviate immediate fire hazards is prohibited;

(2) parks, golf courses and school grounds are to be irrigated during nighttime hours only, between sunset and sunrise;

(3) lawn watering and landscape irrigation, including construction meter use, is prohibited between the hours of 10:00 a.m. to 5:00 p.m.;

(4) running water shall not be used for washing privately owned vehicles. A bucket may be used for the washing of vehicles and only hoses equipped with shut-off nozzles may be used for rinsing;

(5) restaurants are requested not to provide drinking water to patrons except by request;

(6) commercial nurseries shall use water only during the hours from midnight to 6:00 a.m. Irrigation of propagation beds and watering of livestock is permitted as necessary during any hours.

(7) Golf courses using reclaimed water are exempted from these restrictions.

3.3 Stage No. 3. Water Shortage Warning. The Board of Directors may, following a public hearing as set forth in Section 2.2, declare that an emergency water supply shortage exists, and that the Agency is unable to meet all the water demands of its customers. Immediately thereafter, the following water conservation measures shall apply:

(1) parks and schools shall be watered on alternate days during the hours between sunset to sunrise; The schedule of which shall be set following the public hearing.

(2) golfcourses which utilize domestic water from Desert Water Agency's domestic system may irrigate greens only during the hours between sunset to sunrise. Golf courses utilizing reclaimed water are exempted from this restriction;

(3) other lawn watering and landscape irrigation, including construction meter use are restricted as follows: customers with even numbered street addresses may water only on even numbered days, customers with odd numbered street addresses may water only on odd numbered days, and no watering or irrigation shall be done between the hours of 10:00 a.m. and 5:00 p.m. on any day;

(4) washing down of driveways, parking lots, or other paved surfaces is prohibited;

(5) washing of vehicles is restricted to commercial car wash establishments which recycle their water;

(6) filling or adding water to swimming pools, wading pools, spas, ornamental ponds, fountains and artificial lakes is prohibited;

(7) restaurants shall not serve drinking water to patrons except by request;

(8) no new construction meter permits shall be issued by the Agency;

(9) construction metered water shall not be used for earth work or road construction purposes;

(10) watering of livestock is permitted as necessary during any hours;

(11) commercial nurseries may use water only between the hours of 6:00 p.m. and 6:00 a.m. Irrigation of propagation beds is permitted as necessary during any

hours. Commercial nurseries utilizing reclaimed water are exempted from this restriction.

3.4 Stage No. 4. Mandatory Compliance. Water Shortage Emergency.

Following a declaration by the Board of Directors that an emergency water supply shortage due to a major failure in a supply or distribution facility exists, the following water conservation measures shall apply:

(1) watering of parks, school grounds and golfcourses is prohibited, except for reclaimed water;

(2) lawn watering and landscape irrigation is prohibited;

(3) washing down of driveways, parking lots, or other paved surfaces is prohibited;

(4) washing of vehicles is prohibited, except when done by commercial car wash establishments using recycled or reclaimed water;

(5) filling or adding water to swimming pools, wading pools, spas, ornamental ponds, fountains and artificial lakes is prohibited;

(6) restaurants shall not serve drinking water to patrons except by request;

(7) no new construction meter permits shall be issued by the Agency;

(8) all existing construction meters shall be turned off and locked;

(9) commercial nurseries shall discontinue all watering and irrigation. Those utilizing reclaimed water are exempted from this restriction. Watering of livestock is permitted as necessary.

SECTION 4. BOARD DISCRETION TO MODIFY CONSERVATION MEASURES UPON A SHOWING OF NECESSITY THEREFOR.

The specific requirements of each mandatory conservation stage shall be effective upon adoption by the Board following a public hearing, except that the Board may modify or amend such requirements at the time of adoption upon a showing of the need for such modification or amendment.

SECTION 5. IMPLEMENTATION AND TERMINATION OF MANDATORY COMPLIANCE STAGES.

5.1 The General Manager of the Agency 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 the necessity for the implementation or termination of each stage. Each declaration of the Board implementing or terminating a water conservation stage shall be published at least once in a newspaper of general circulation, and shall remain in effect until the Board of Directors otherwise declares, as provided herein.

SECTION 6. EXCEPTIONS.

6.1 Application for Exception Permit. The General Manager of the Agency may grant permits for uses of water otherwise prohibited thereby if he/she finds and determines that special circumstances make compliance not reasonably possible, or that restrictions herein would either:

(a) Cause an unnecessary and undue hardship to the water user or the public; or

(b) Cause an emergency condition affecting the health, sanitation, fire protection or safety of the water user or of the public.

Such exceptions may be granted only upon application therefor. Upon granting any such exception permit, the General Manager may impose any conditions he/she determines to be just and proper.

SECTION 7. CRIMINAL PROCEEDINGS FOR VIOLATION.

7.1 The Board of Directors hereby declares that, pursuant to Water Code Section 377, it shall be a misdemeanor for any person to use or apply water contrary to or in violation of any mandatory restriction or requirement established by this ordinance and, upon conviction thereof, that person, firm or corporation shall be punished by imprisonment in the county jail for not more than thirty (30) days or a fine of not more than one thousand dollars (\$1000) or by both such fine and imprisonment.

SECTION 8. CIVIL PROCEEDINGS FOR VIOLATION.

In addition to criminal penalties, violators of the mandatory provisions of this Ordinance shall be subject to civil action initiated by the Agency.

8.1 First Violation. For a first violation, the Agency shall issue a written notice of violation to the water user violating the provisions of this Ordinance.

8.2 Second Violation: 25% Surcharge. For a second violation of this Ordinance within a 12-month period, a one-month surcharge is hereby imposed in an amount equal to 25% of the previous month's water bill for the meter through which the wasted water was supplied.

8.3 Third Violation: 50% Surcharge; Installation of Flow Restrictor. For a third violation of this Ordinance within a 12-month period, a one-month penalty surcharge is hereby imposed in an amount equal to 50% of the previous month's water bill for the meter through which the wasted water was supplied. In addition to the surcharge, the Agency 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 for installing a flow-restricting device shall be based upon the size of the meter and the cost of installation but shall not

be less than \$25. The charge for removal of the flow-restricting device and restoration of normal service shall be \$25 if restoration of normal service is performed during the hours of 8:00 a.m. to 4:00 p.m. on regular working days. If the removal of the flow-restricting device and restoration of normal service is made after regular working hours, on holidays or weekends, the restoration service charge shall be \$40.

8.4 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 6.1 hereof, the penalty surcharge provided in Section 6.3 hereof shall be imposed and the Agency shall 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 \$25. Such restoration of service shall not be made until the General Manager of the Agency has determined that the water user has provided reasonable assurances that future violations of this Ordinance by such user will not occur.

8.5 Notice. For a first violation, written notice may be given to the customer personally or by regular mail.

If the penalty assessed is a surcharge for a second or third violation, notice may be given by regular mail.

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 whatever, notice of the violation shall be given in the following manner:

(a) By giving written notice thereof to the customer personally; or

(b) If he/she 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 customer at either his/her place of business or residence; or

(c) If such place of residence and business cannot be ascertained, or a person of suitable age or discretion there cannot be found, 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 customer at the place where the property is situated.

Said notice shall contain, in addition to the facts of the violation, a statement of the possible penalties for each violation and a statement informing the customer of his right to a hearing on the violation.

SECTION 9. HEARING.

9.1 Any customer against whom a penalty is levied pursuant to Section 5 and 6 shall have a right to a hearing, in the first instance by the General Manager, with the right of appeal to 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 infraction of the violation.

SECTION 10. RESERVATION OF RIGHTS. The rights of the Agency hereunder shall be cumulative to any other right of the Agency to discontinue service. All monies collected by the Department pursuant to any of the penalty provisions of this Chapter shall be deposited in the Operating Fund as reimbursement for the Agency's costs and expenses of administering and enforcing this Ordinance.

SECTION 11. CONCURRENT AUTHORITY.

11.1 The Desert Water Agency, its manager and designated employees, have the duty and are authorized to enforce all provisions of this Ordinance, with the qualification that the City of Palm Springs through enforcement of Sections 14.24.020-14.24.060 of the Palm Springs Municipal Code, the City of Cathedral City, and the County of Riverside as to unincorporated territory within the Agency, are recognized to have concurrent authority for, and shall have the primary responsibility for the control of water flowing in the streets where such occurs within their respective jurisdictions.

SECTION 12. NO REPEAL OR AMENDMENT OF ORDINANCE

31. This ordinance shall be in addition to Ordinance 31 (prohibiting the waste of water). In the event of conflicting provisions, this ordinance shall prevail.

SECTION 13. SEVERABILITY.

13.1 If any section, subsection, sentence, clause or phrase of this Ordinance is for any reason held to be unconstitutional or invalid, such decisions shall not affect the validity of the remaining portions of this Ordinance.

SECTION 14. The Clerk of the Desert Water Agency shall attest to the passage of this Ordinance and shall cause the same to be published in a newspaper of general circulation, which is printed, published and circulated in the district within 10 days after its adoption.

ADOPTED this 18th day of October, 1988

F. Gillar Boyd, Jr.
President

Attest:

Secretary

APPENDIX C
WATER CONSERVATION PROGRAM OF THE
DESERT WATER AGENCY
JANUARY, 1977

WATER CONSERVATION PROGRAM

of the

DESERT WATER AGENCY

January, 1977
Palm Springs, California

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OVERVIEW

The Desert Water Agency's water conservation efforts have been in two directions:

1. Since 1974, working on a one-to-one basis with large volume users teaching conservation techniques.
2. Since 1975, a Residential Pilot Program conceived to measure the effectiveness of a water conservation program based on a general public information approach.

The large-volume user program has been conducted by Mr. William Scarlott of the Agency's staff and is covered in the second section of this report.

The Residential Pilot Program has been conducted by Mr. Ron Baetz, also of the Agency's staff.

The arid desert climate and tourist orientation of the Palm Springs area provide extreme challenges in approaching water conservation.

As every water distribution system faces different challenges, Staff realized that every effort must be made to truly know our consumers. By selecting eight widely-varied cross sections of the community to work with, We feel that the Agency can now pursue a Public Information Water Conservation Program intelligently and at a reasonable cost. We know that we would have made very costly errors, had we plunged blindly into an expensive, uncontrolled program a year ago.

The "Grass-Roots" approach of working directly with 160 consumers is undeniably the best method to understand consumptive use patterns and people's response to water conservation information. One of the "Test" information releases concerned water use in the bathroom. When asked "How has the water conservation program affected your water use?", one man answered ... "I feel guilty when I brush my teeth!"

We're very pleased with the consumers interest and attitude toward water conservation. Some people made terrific efforts to reduce water consumption during a month's period, only to find that someone left a hose running overnight, which wiped out the prior savings. Learning can be painful.

The Residential Pilot Program aimed at making water conservation a topic of discussion in the home, affecting all members. This was accomplished.

We learn in steps. By this report, the research phase is concluded and we now begin the Public Awareness Phase with a General Information Program covering the entire service area of the Agency.

We are dealing with changing basic social values among our consumers. This will require patience and untiring effort for a long time.

RONALD L. BAETZ

Project Supervisor
Residential Pilot Program

CONCLUSIONS

The concept of measuring the effectiveness of a water conservation program by the use of "Test" and "Control" groups has proven successful during the Residential Pilot Program. We will be unable to continue effectiveness measurements once a full scale program is begun as all consumers will then be exposed to water conservation information.

Per capita water consumption within the Desert Water Agency varies widely depending upon household population, socio-economic status, the employment of gardeners, whether served by sewer system or septic tank and service pressure.

Differing sections of the community are responsive to different approaches. Some are motivated with the thought of saving money. Others respond to the moral values of conserving a valuable natural resource. A few don't respond to any approach.

Conclusive reductions in water consumption cannot be expected on a short-term basis except under crisis conditions.

With a voluntary water conservation program, the Desert Water Agency's initial goal to reduce water use by 5% will be easily reached in a relatively short period of time with a general public information program using local radio and newspaper media. A higher goal, 10% or 15% could be established.

Twenty-five percent to thirty percent reductions in water use can be expected in the long term in some socio-economic sections of the community.

Irrigation consumption should be the primary target of future water conservation programs of the Desert Water Agency as 60% to 80% of the total water use at the average home is for irrigation.

Retro-Fit should be encouraged, but future program direction should be coordinated with the results of the State Department of Water Resources' San Diego test.

The greatest impact is probably made on youngsters attending school at the grade level. Reaching the impressionable youngster will often result in multiplication of the message when the youngster takes the message home and shares it with other members of his household.

The large volume user program has proven very successful with condominiums, city parks and other users who can be easily reached on a one-to-one basis. This program should be continued and expanded upon.

Residential and other lower-volume users cannot effectively or economically be reached on a one-to-one basis. Therefore, a Public Information Water Conservation Program should be pursued to reach all sections of the community.

The current drought conditions in the state add impetus to the implementation of an aggressive water conservation program.

STATEMENT OF POLICY

THE DESERT WATER AGENCY

REGARDING: WATER CONSERVATION

SEPTEMBER, 1975

The Directors of the Desert Water Agency are concerned by the past increases in the cost of supplying water to the greater Palm Springs area, the anticipated future increase in this cost, and that water pumping requirements have exceeded available and replenishable supplies.

Therefore, the Directors wish to have the Desert Water Agency staff undertake a study to determine the consumption patterns of the consumers in the Desert Water Agency area. This study would determine the consumption in typical households and businesses throughout the community. Hopefully, the study would identify ways in which consumption can be effectively reduced. This study should take into consideration the types and number of plumbing facilities within the household or business, the amount of yard area and the type of landscaping involved, the use of automatic devices for the control of irrigation, and any other items which might seem pertinent to the study.

Should this study conclude that there are proven ways of conserving water, the Directors would further request that staff suggest a reasonable goal as to the overall average reduction that could be anticipated in a given period of time.

In order to achieve this goal, the staff should outline a plan to educate consumers as to how to best achieve same.

PRELIMINARY PLANNING

Program Goals

1. Investigate water consumption patterns within the Desert Water Agency's boundaries. .
2. Analyze indoor and outdoor water consumption patterns.
3. Determine the most effective ways to reduce water consumption
4. Set a reasonable goal for reduction of water consumption in the average home.
5. Formulate a plan to educate consumers on how they can conserve water in their home and garden.

Information Solicitation

To assist with the development of our program, information was gathered and reviewed from every known source.

Most notable are the following publications:

"Residential Water Conservation", published by University of California, Davis.

"Water Conservation in California", published by The State of California, Department of Water Resources.

"North Marin's Little Compendium of Water Saving Ideas", published by North Marin County Water District.

Plant and Irrigation Analysis

At the Agency's request, a local landscape architect prepared a list of plant material generally utilized in landscape design in the Palm Springs area, categorized to irrigation demand.

This information has been incorporated in the forms used for the Consumptive Use Survey.

It has been observed that in the desert area, most people water trees and shrubs the same as they water lawns, even though trees and shrubs require considerably less water.

No specific studies on water requirements for ornamental landscaping have been conducted by any of the universities or trade organizations.

CONSUMPTIVE USE SURVEY

Questionnaire Preparation

Questionnaire was prepared by Staff with input by Agency's Consulting Engineer, as well as a local landscape architect.

In its final form, the questionnaire provided raw data covering household occupancy, inventory of water-using appliances, lot size, house size, outside use (inventory of plant material and irrigation systems).

Establish Zones

We established eight different zones that are assumed to represent different water use areas.

- Zone 1 - Desert Highlands Estates - Low Assessed Value Area
- Zone 2 - Las Palmas (Original Area) - High Assessed Value Area
- Zone 3 - Las Palmas (New Area) - High Assessed Value Area
- Zone 4 - Desert Palms Estates - Average Assessed Value Area
- Zone 5 - Vista Del Cielo - Low Assessed Value Area
- Zone 6 - Canyon Country Club - High Assessed Value Area
- Zone 7 - Dream Homes - Low Assessed Value Area
- Zone 8 - Cathedral City - Average Assessed Value Area

Field Survey

In each of the eight survey zones, a block of 100 accounts was selected that were geographically together and would seem to be representative of homes in the area. Out of each of the 100 account blocks, 20 questionnaires were completed. The procedure was to start at one geographic end of the block and speak with the first 20 individuals that responded to a knock on the door. In many areas, less than one-half of the residents were home.

The total number of consumptive use questionnaires completed was 160, which is 1.2% of our total present active consumers. This survey, however, was limited to residential consumers and represents 1.5% of them. This small sampling number was selected because without prior available history on this type of survey, a sampling could reveal data that would indicate the need of change in the survey procedure.

The surveyors noted that the majority of the people contacted were cooperative in supplying data and indicated some interest in the survey and water conservation. Only one resident contacted refused to cooperate in the survey, several showed a strong interest in the survey and conservation, and a few were concerned that the survey would increase their water rates. One responded with "stop these silly surveys and reduce the rates."

Data Analysis

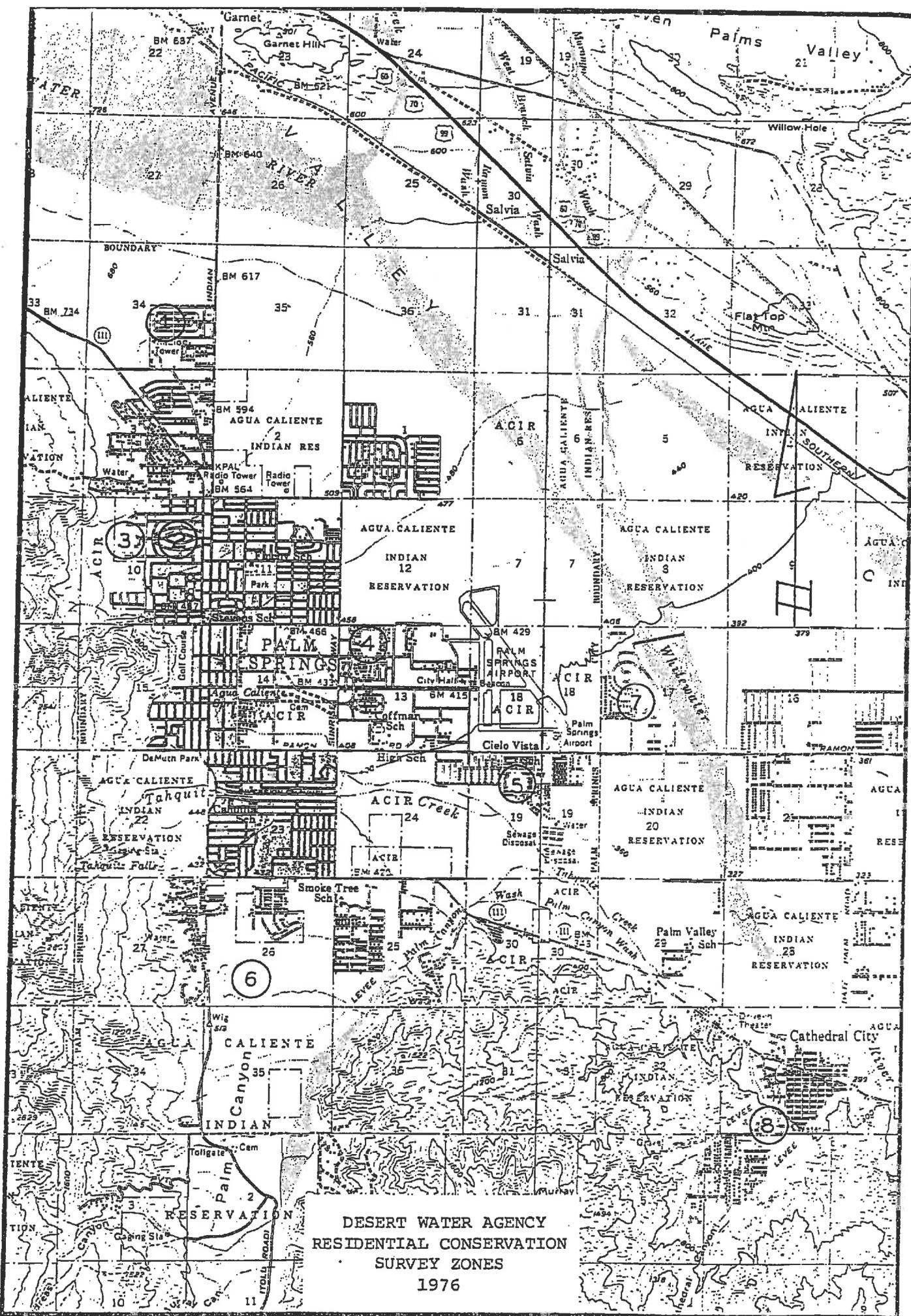
1. Water use by customer varied from between 54% and 138% of the average in one area to between 11% and 399% of the average in another area.
2. House sizes within separate geographic areas varied from a minimum of 67% of the average for one area to a maximum of 185% of the average for another area.
3. House sizes averaged 16% of their lot sizes and ranged between 10% and 23% with Dream Homes (Zone 7) having small houses relative to lot sizes and Canyon Country Club (Zone 6) having large houses relative to lot sizes.
4. House sizes approximated lawn sizes and ranges within 20 percent of the area's average except for Desert Highlands (Zone 1) and new Las Palmas (Zone 3) areas where house sizes were two-thirds and twice lawn sizes, respectively.

5. Larger lots with larger houses had the most medium-high demand shrubs and trees while smaller houses on smaller lots had the most medium-low demand shrubs and trees. Few houses, regardless of size, had majorities of low natural shrubs and trees.

The above results represent conclusions based on averages developed from the survey data. Wide variations were found within and between the various separate geographic areas.

WATER USE RELATIONSHIPS BETWEEN THE STUDY ZONES
FOR CALENDAR YEAR 1975

<u>ZONE</u>	<u>AREA</u>	<u>GENERAL ASSESSED VALUE</u>	<u>AVERAGE WATER CONSUMPTION PER ACCOUNT</u>
1	Desert Highlands Estates	Low	0.58 Acre Feet
2	Las Palmas (Original Area)	High	1.95 Acre Feet
3	Las Palmas (New Area)	High	1.21 Acre Feet
4	Desert Palms Estates	Average	0.78 Acre Feet
5	Vista Del Cielo	Low	0.67 Acre Feet
6	Canyon Country Club	High	2.03 Acre Feet
7	Dream Homes	Low	0.85 Acre Feet
8	Cathedral City	Average	0.44 Acre Feet



DESERT WATER AGENCY
 RESIDENTIAL CONSERVATION
 SURVEY ZONES
 1976

SCHEDULE OF WATER CONSERVATION ACTIVITIES
PILOT PROGRAM - RESIDENTIAL

JULY 1976

SUN	MON	TUES	WEDS	THUR	FRI	SAT
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
		Establish Test & Control Groups from Return Cards				
18	19	20	21	22	23	24
	Compile Water Use Records on All 160 Accounts					
25	26	27	28	29	30	31
			Initial "Test" Contacts			

AUGUST 1976

SUN	MON	TUES	WEDS	THUR	FRI	SAT
1	2	3	4	5	6	7
			Prepare Introduction Contact Materials			
8	9	10	11	12	13	14
	Introduction Contacts			1st Mailing		
15	16	17	18	19	20	21
	Retro-Fit Contacts			2nd Mailing		
22	23	24	25	26	27	28
			3rd Mailing			
29	30					
	4th Mailing					

SEPTEMBER 1976

SUN	MON	TUES	WEDS	THUR	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11
		Water Use Analysis Contact				
12	13	14	15	16	17	18
	5th Mailing					
19	20	21	22	23	24	25
		6th Mailing				
26	27	28	29	30		
	Leak Survey Contact & Poll No. 1					

OCTOBER 1976

SUN	MON	TUES	WEDS	THUR	FRI	SAT
					1	2
3	4 7th Mailing	5	6	7	8	9
10	11	12 13 14 Water Use Analysis Phone Contact			15	16
17	18	19	20 8th Mailing	21	22	23
24 31	25	26 27 28 29 Yard Survey Contact				30

NOVEMBER 1976

SUN	MON	TUES	WEDS	THUR	FRI	SAT
	1	2	3 9th Mailing	4	5	6
7	8 9 10 Water Use Analysis Phone Contact			11	12	13
14	15 10th Mailing	16	17	18	19	20
21	22 23 24 Poll No. 2 Contact			25	26	27
28	29	30				

DECEMBER 1976

SUN	MON	TUES	WEDS	THUR	FRI	SAT
			1 2 3 In-House Pilot Program Eval.			4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

PILOT PROGRAM - RESIDENTIAL

Establish Test and Control Groups

The eight consumptive use "Zones" were divided into:

"Test Groups - Consumers with whom we worked.

"Control" Groups - Consumers whose water use was compared with "Test" Group's. No contact was made with these groups.

Letters requesting participation of ten consumers in each zone were mailed out to establish the "Test" Groups. Of the 85 letters mailed, 34% responded. The majority of the responses were from the zones with the highest per-account use; Zones 2 and 6. Additional contacts completed the establishment of the "Test" Groups; ten consumers in each of the eight zones.

The remaining ten consumers in each zone from the "Consumptive Use Survey" became the "Control" Groups.

Field Contacts

Implementation of the Residential Pilot Program was designed to determine what quantity of water savings can actually be accomplished, and to determine to what extent our consumers will cooperate in participating in a voluntary program.

Contacts were made with each participant at least weekly, either personally, by mail or by telephone. It was always stressed that this is a "voluntary" program.

The various approaches used during the field contacts are outlined below:

A. Program Introduction

A personal "at-the-home" contact explained to the resident the purpose of the Pilot Program and how it works. (See "Introduction Contact - Information To Resident")

The surveyor confirmed resident's name, correct address and phone number.

B. Retro-Fit

A personal "at-the-home" contact explained Retro-Fit devices. (See "Retro-Fit Contact - Information to Resident")

Various water-saving devices were offered to the residents for use in the home. Some used everything; others used only one or two items. In general, the devices and their potential savings were enthusiastically received.

The devices were supplied at no cost to the resident and installed by Agency personnel.

The devices distributed included:

Low-flow plastic shower heads

Three types of flow controllers for showers and sinks

Plastic bottles for toilet tanks

A dye tablet test was conducted for all toilets to indicate small hidden leaks. Several were discovered and the residents were advised to make necessary repairs.

C. Water Use Analysis

Water use records covering the months of August, September and October, 1976, were analyzed each month and discussed with each resident.

The "Water Use Analysis" form (see example) showed each consumer his water use comparing the past month's use "This Year" with "Last Year". Most important, the form compared the last six month's trend in water use.

The first "Water Use Analysis" contact was a personal "At-the-door" discussion. The two following contacts were via telephone with a follow-up mailing.

D. Leak and Yard Survey

This "At-the-home" contact required the resident's attention during an inspection of all indoor and outdoor plumbing fixtures for obvious leaks. The resident was instructed on how to read the water meter and use it to help determine leakage. The significance of "small" leaks was stressed.

"Over-watering" of the yard was discussed. Irrigation systems were checked, time clocks' timing accuracy, adjustment of sprinkler emitters, and length of water application timing were noted.

The resident was encouraged to maintain proper soil mulch to retain moisture and to experiment by reducing the time clock application cycles a little bit at a time to reduce water consumption.

E. Mailings and Information Releases

At each "At-the-home" contact, water conservation literature (information releases) of various forms were left with the resident. Between contacts, information releases were mailed to the home, thus the resident was supplied with printed educational material at least once a week.

The information releases (see examples) included printed material published by the American Water Works Association and the State of California, Department of Water Resources, as well as single page items, each describing a different water conservation practice.

F. POLLS

The purpose of the two polls, was to determine:

1. Which portions of the program have the most meaning to the test group.
2. If people are relating to the program.
3. How much they have learned from the program.
4. Reaction to Retro-fit devices.

The number of questions used for each poll was kept to a maximum of seven. The questions often stimulated the resident to talk at great length about water conservation. A large majority of the test group residents responded favorably to the pilot program activities.

Printed material had the most effect according to 73% of those polled. The Water Use Analysis had the next highest score with a 16% response. The remaining 11% responded to the "Personal Explanations" and yard and leak surveys. Retro-fit received the lowest response with less than 1%.

The polls indicated that the residents did become more aware of where their greatest water use is. The percent that indicated "yard use" as highest rose between the polls from 43% to 57%.

Eighty-four percent said that they would participate in future programs, indicating that they had enjoyed and gained from the experience.

Program Evaluation

The time involved in conducting this type of a program must not be underestimated. Detailed planning of the program paid high dividends in the validity of the program's achievements.

The detailed "Instructions to the Surveyor" outlining each step of each contact allowed flexibility of available personnel. All efforts were made to have the same surveyor visit the accounts each time to maintain continuity.

Timing was equally important. The schedule provided the participants with a year's "information exposure" during four months.

The concept of the "Grass-Roots" approach of dealing on a one-to-one basis with the participants is a sound one. The rapport which developed gave us the understanding of how our consumers feel about water conservation and how they will react to a water conservation program.

FINDINGS

Potential Savings

The initial goal to reduce water use by 5% is very conservative. A review of the "Consumptive Use Comparisons" chart reveals that water reductions between 10% to 20% can be expected from some sections of the community.

Percentage wise, the Test Groups in Zone 3 (Las Palmas, New Area), Zone 5 (Vista Del Cielo) and Zone 8 (Cathedral City) demonstrated the largest reductions in use compared to the control groups in the same zones. It is important to note that these three zones represent a cross-section of the entire community.

Overall, the "All Zones" comparison shows the Test Groups reducing water consumption by 18% during the five-month Pilot Program, while the Control Groups increased use by 9%, a difference of 27%.

Actual water use reduction will be related to the intensity of the conservation program.

Consumer Education

As revealed during the polls, the participants favored printed material over any other approach to water conservation education. This supports the concept of using printed advertising in the local media as the foundation of the water conservation program.

The printed "Information Releases" were prepared in various formats. Some were designed simply with an extremely short, to-the-point message. Others were more sophisticated and lengthy. From the participants comments, future material should be prepared as simply and to-the-point as possible. Most of the participants said that they already knew most of the material presented.

The key then, is motivation. Revolve future program material around the concept of "Reminders". Avoid under-estimating what the consumer already knows.

Domestic Consumption

Extensive studies conducted prior to our investigation have analyzed domestic (indoor) water consumption in the average home as follows:

- 45% - Toilet flushing
- 30% - Bathing
- 20% - Laundry and Dishwashing
- 5% - Drinking and Cooking

Seventy-five percent of all household use occurs within the confines of the bathroom, namely the toilet and shower.

New legislation, which requires low-use toilets in all new construction, will have a considerable impact in the future by reducing the amount of water used for toilet flushing.

Our results with Retro-Fit devices were mixed. Displacement bottles inserted in toilet tanks were eagerly received by the participants. By the end of the Pilot Program, approximately 10% of the Test Group had removed the bottles because the toilets were not flushing adequately, sometimes requiring two or more flushes to remove solids, thus defeating the idea of reducing water consumption.

Low-flow shower heads and inserts had more success. No negative comments were expressed.

Retro-Fit should be encouraged as the consumer is not required to change any of his social habits to use the devices and the amount of savings is fairly predictable.

Irrigation Consumption

Between 60% and 80% of the total water use at the average home is for irrigation.

The fact that water in our desert has been plentiful and relatively cheap, the tendency to overwater has grown to become a fact of life. This is true of the homeowners as well as the professional gardeners.

Poor irrigation system maintenance also contributes to water waste. In most of the systems we checked, many spray heads were overspraying into the street and small leaks were abundant.

Soil condition takes it's toll. The prevalence of sand in our area absorbs water faster than a sponge. Proper mulching, which helps the soil retain moisture, is seldom practiced.

Direct consumer participation will be involved to change the existing habit patterns and affect a voluntary water use reduction in irrigation use.

Low water use and native plant materials are seldom used in landscaping designs. Its incongruous that tropical and sub-tropical plant material, which require large amounts of water, continue to be used in our arid climate.

Whitewater Mutual Water Company, which serves irrigation water to portions of the northern section of Palm Springs, influences total consumption to a limited degree. Much of Whitewater's service is provided through a non-pressurized gravity system so that the consumer is restricted to flood irrigation and the water is available only on certain days of the week. We noted no significant difference in water use patterns between properties with and without Whitewater service in the same neighborhood.

Conservation Benefits

Water is a non-replenishable resource, which will become more difficult to replace as time goes on. Present supplies must be used carefully.

Water conservation will result in energy conservation in that it will reduce the Agency's pumping energy requirements as well as customers' heating energy requirements for hot water.

Water Conservation will permit some deferral of source of supply plant (well pumping plant) development.

Rapidly rising energy costs, which are expected to continue to increase over future decades, will undoubtedly create the need for periodic increases in water rates; reduced water use should offset some of the increasing costs.

Wastewater treatment plants will benefit from reduced volumes as a by-product of water conservation in the home. This will reduce the power required to operate the plant.

Coordination With Other Conservation Programs

The energy utilities, (gas and electric) are presently conducting conservation programs. Our efforts should be designed to take advantage of the water conservation spin-off from their programs. They stress water conservation related to hot water use.

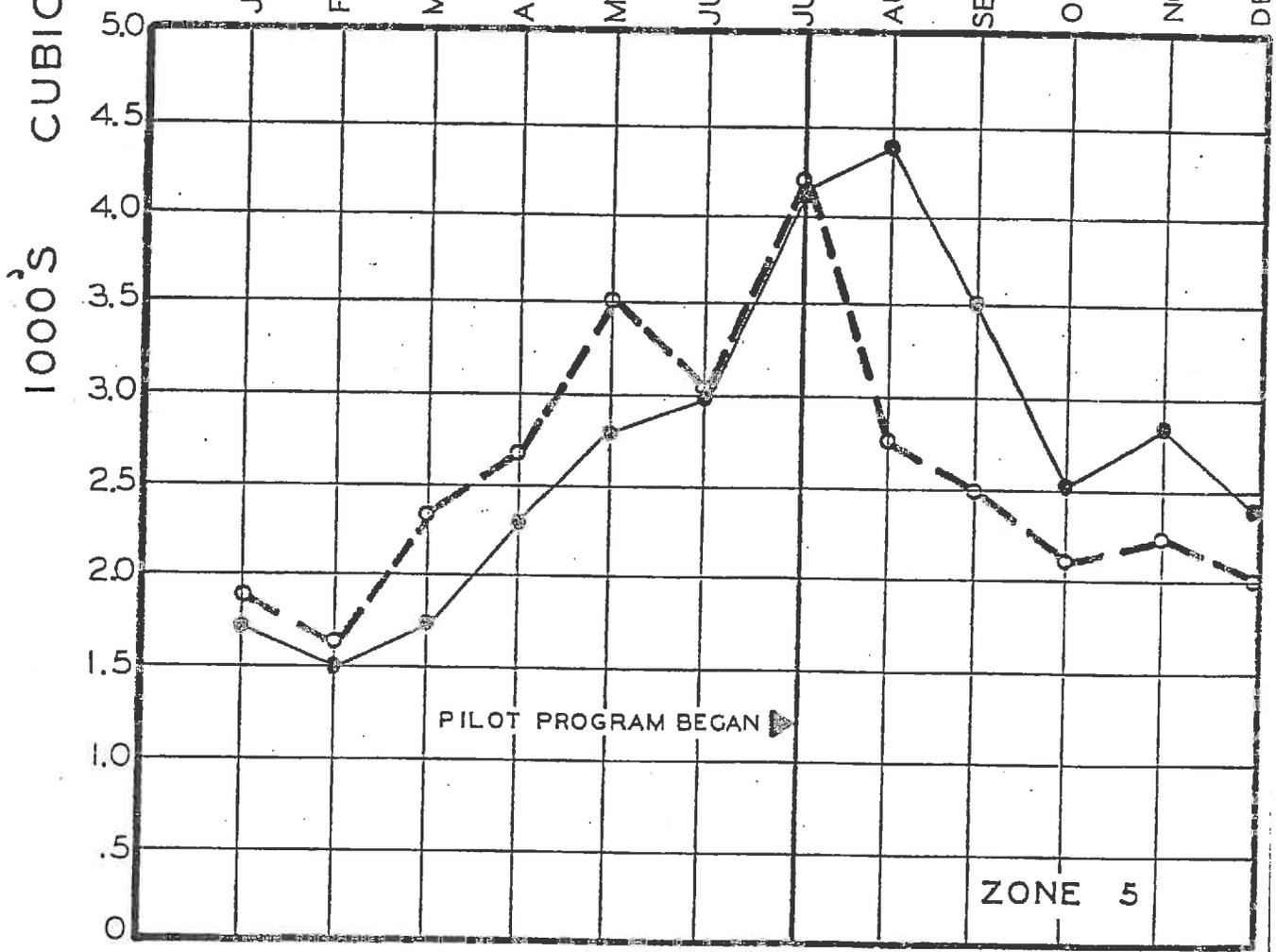
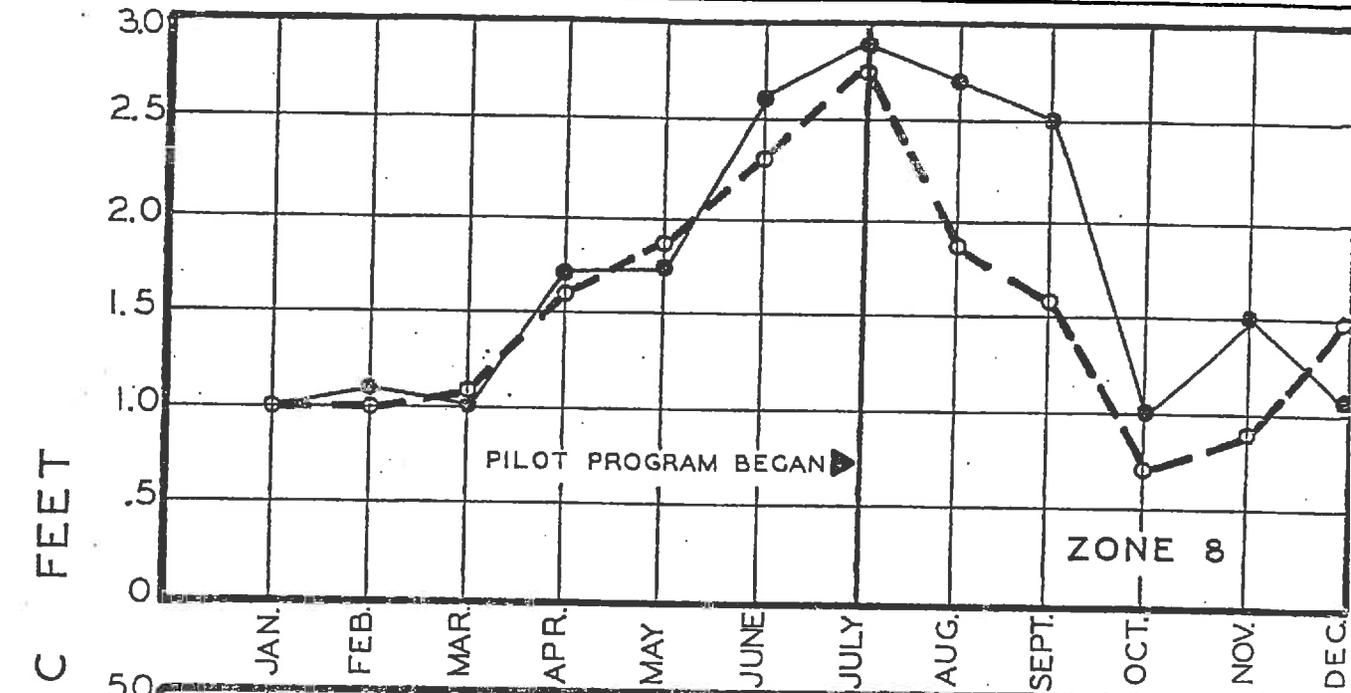
The State of California, Department of Water Resources (D.W.R.) is presently conducting a Retro-Fit test program in San Diego. This is a large-scale test of ways to reduce residential water use, sewage flows and related energy consumption.

Any program directed towards Retro-Fit should be coordinated with the results of the D.W.R.'s San Diego test.

Continuous monitoring and evaluation of any and all water conservation programs should continue.

DESERT WATER AGENCY
 Residential Pilot
 Water Conservation
CONSUMPTIVE USE COMPARISONS

		PERCENT CHANGE IN CONSUMPTION 1976 to 1975			
		FULL 12 MONTHS		PILOT PROGRAM 5 MONTHS	
ZONE	AREA	TEST GROUP	CONTROL GROUP	TEST GROUP	CONTROL GROUP
1	Desert Highland Estates	-6%	-7%	-17%	-12%
2	Las Palmas (Original Area)	+17%	+13%	+8%	+5%
3	Las Palmas (New Area)	-5%	+18%	-12%	+33%
4	Desert Palms Estates	-11%	-4%	-23%	-23%
5	Vista Del Cielo	-2%	+20%	-20%	+21%
6	Canyon Country Club	+5%	+3%	-1%	-5%
7	Dream Homes	-0-	-4%	-13%	-19%
8	Cathedral City	-5%	+4%	-33%	+4%
ALL ZONES		+2%	+6%	-18%	+9%



KEY	○-○-○-○	TEST
	●-●-●-●	CONTROL

COMPARITIVE WATER USE 1976
 TEST AND CONTROL GROUPS
 RESIDENTIAL WATER CONSERVATION
 PILOT PROGRAM

DESERT WATER AGENCY

CONTINUING PROGRAM RECOMMENDATION

Periodic Review

The Pilot Program "Test" and "Control" groups water use records should be monitored for the remainder of 1977 to determine the residual influences of the "Pilot Program".

Water use trends should be analyzed annually by type of account, (residential, multiple unit, commercial, etc) to identify changes in use patterns. This would help to direct the emphasis of the Agency's water conservation efforts.

In-House Program

The Agency should lead by example. Maintaining diligence in locating and repair all leaks; in the distribution system, the offices and the irrigation systems maintained by the Agency.

Encourage Agency employees to implement water conservation programs in their own homes. Develop landscape plans for all Agency properties (well sites, reservoir sites, offices and storage yards), utilizing the maximum amount of native and low water use plant material as is practical to individual site conditions. (Soil conditions, wind and sun patterns and blow-sand conditions must be considered in plant material selection).

General Consumer Education

The "Pilot Program" has confirmed the idea that consumer education is a practical, but long term program with the emphasis on repetition. Much time, effort and repetition will be necessary if the introduction of water conservation into our community is to be successfully adopted.

The power of advertising in making and shaping public attitudes and opinions is undeniable. It is inevitable that in the future the nation will see more and more money spent on public relations on behalf of water conservation.

It is recommended that a public information water conservation program be immediately implemented to include at least the following activities:

1. Prepare and provide news releases to the local media on the Agency's water conservation activities.
2. Prepare and publish "Water Conservation Techniques" in the local newspaper.
3. Prepare and broadcast "Water Conservation Techniques" on local radio stations.
4. Continue the Agency's existing program of consulting with and explaining water conservation to consumers such as condominiums, the City of Palm Springs, Department of Parks and Golf Course, hotels, and other multi-unit complexes and large volume water users. This would be a continuation and expansion of our existing program dealing with condominium users.

It is further recommended that the Agency develop a long range program to additionally include the following activities:

5. Prepare and broadcast "Water Conservation Techniques" on local television stations.
6. Revise the water bill format to include a comparative water use analysis.
7. Prepare and present slide shows and movies to interested groups, such as landlord associations, condominium associations, schools, environmental groups, service organizations, and commercial establishments.
8. Prepare water conservation handbooks for home landscape and garden use, oriented to our desert climate and soils. Native plants should be stressed together with several typical low-water-use landscape plans.
9. Develop a school program aimed at integrating the concept of water conservation into every area of study (mathematics, reading, and science) of school children in the district.

Special Programs

Timed to stimulate and renew interest in water conservation; special programs can become the key element to success in the long term.

These special programs should be supported by advance publicity and news releases to insure community participation and support.

Imagination is the only limiting factor in the planning of special programs.

The following ideas are submitted for future consideration:

Contests - (Slogans - Posters - Essays)

Facility tours

Lectures to civic organizations

Programs oriented to trades:

Poolmen

Gardeners

Plumbers

Nursery men

Plumbing suppliers

Multiple unit managers

Commercial consumers

Community Planners

"Save Water" public forums

Displays in public buildings, banks, etc.

Billboard advertisements

In the schools, programs oriented to contests (slogans, posters, essays) are very effective.

Time Table

A specific time table would be inappropriate for a long range water conservation program.

Program timing should be based on a continual review of water consumption patterns by type of account (residential, multiple unit, commercial, etc.). This information will show where the program is working and where more emphasis is needed

CONDOMINIUM

AND

LARGE USER

WATER CONSERVATION PROGRAM

WATER CONSERVATION STUDY FOR LANDSCAPE SPRINKLER SYSTEMS

The Desert Water Agency began a water conservation program in 1974. The program started in conjunction with investigation of cross connections between meters serving domestic water to irrigation sprinkler systems for landscaping.

The Agency serves domestic water to over 60 condominium developments in their service area. The average condominium will have 6 separate meters serving their common open landscaped areas. The need for an educational program on water conservation to the gardeners and homeowners became apparent when a pattern of defects, mis-use and over-watering developed in our investigations.

In the Palm Springs desert area, a combination of dry climatic conditions plus an absorbant sandy soil creates a ratio of almost 3 to 1 for domestic water use for irrigation over domestic interior water use. This ratio is typical of residential property and is even higher for a condominium with open landscaped area.

A mutual benefit program was explained to the condominium owners in that a substantial savings was possible to them in their water billing. The Agency would save in power pumping costs through a reduction in pumped well water.

With permission from the condominium owners, a study was made with their full-time gardener or with a gardening service representative. As the owners are responsible for the water billing, it was found direction from this level down was necessary to initiate a program.

Exhibit "A" is a typical condominium study and report mailed to the owners from the Agency. Exhibit "B" & "C" are typical sprinkler study forms. The Agency monitors monthly water use and reports patterns to the owners. In investigation of all sprinkler systems for large water users, it was found that maintenance of the system was the basic cause for wasted water. Wasted

water is the term given to sprinkler heads that are improperly turned spraying water on sidewalks, into the street and running down the gutter. The Agency was surprised to find the number of sprinkler heads either completely or partially broken off with waster water flowing freely from the pipe.

Over-watering was found to be due to either a supposition on required watering time, improper design of the sprinkler system or defects in the sprinkler system time clock control.

Other large domestic water use for irrigation was found at hotels and some commercial malls; investigation found typical defects as noted in Exhibit "A". A study was made for estimated water savings potential and a typical report was mailed to hotels and malls. Monitoring of water use patterns is also under way for these large irrigation water users.

The Desert Water Agency is a special independent State of California water utility, as such, they are independent of the city municipality. In this area, the Agency is working with the City of Palm Springs parks department on a water conservation program. The Palm Springs Unified School District entered into a comprehensive water conservation program at all their schools after a study by the Agency. Each school maintains an extensive sprinkler system for grass playing fields and landscaping.

To make people aware of the need for water conservation, the Agency maintains a slide program, which is adjusted for all age groups. This program was presented to all the maintenance personnel from each school in the district. The slide program covers the history of water in the unique desert area of Palm Springs. With a better understanding of water in our area, and in general, a real interest is created to conserve water. This interest by the school maintenance personnel was given as an important factor in the outstanding results the school district is experiencing in their conservation program.

Educational programs on water conservation, proper watering and maintenance of sprinkler systems were presented to the Association of the Desert Condominiums representing 26 owner associations. Individual condominium boards and owner meetings have also been presented programs:

In a conservative estimate from a study of 6 key condominiums, it is estimated an annual savings of 5,597,000 cubic feet of water will be realized.

TYPICAL 20-ACRE CONDOMINIUM DEVELOPMENT

The City of Palm Springs Policy Resolution limits development of condominiums to 8,500 square feet of building coverage per net acre and a maximum of 6 units per net acre.

EXHIBIT A condominium development has the following statistical breakdown:

Gross Acreage	20 acres
Net Acreage	17.3 acres
Building Coverage (100 Units)	21.8%
Streets	6.9%
Drives	<u>3.5%</u>
Total Building Coverage with Private Enclosed Patios	32.2%
Total Open Area for Landscaping	67.8%

A study of the sprinkler system found the following:

Total 2" Irrigation Water Meters . . .	6
Total Sprinkler Time Clocks	8
Total stations on Clocks	65
Average Station per Clock	8
Average Length of Watering Time Per Station	12-1/2 minutes
(Assumed Time per Gardner)	10 minutes)

Irrigation Watering Cycle - Winter: Once Daily, Three Times a Week.

Irrigation Watering Cycle - Summer: Twice Daily, Seven Days a Week.

Two irrigation time clocks were selected at random and the combined 16 stations were inspected through their complete cycle.

- Total sprinkler heads inspected - 547
- Total bubbler heads inspected - 128
- Total rainbird heads inspected - 18

It was found there was no regular maintenance program to the sprinkler system. Two hundred and thirty six sprinkler heads were below level of grass so that spray was deflected and heads became submerged causing insufficient coverage and extra watering time required.

Twelve heads were found broken with water running freely. Seventy eight bubbler heads were found to be adjusted too far open for time clock setting, overflowing plant wells.

Calculations were made on water savings from a reduction of watering time from the average 12-1/2 minutes to the assumed 10 minutes. This time has been set by the gardeners as minimum through their experience. The annual savings for this condominium are estimated at 1,181,400 cubic feet.

Water saved from reduction of bubbler watering time, correction of broken and leaking sprinkler heads and raising sprinkler heads or installation of pop-ups will also effect the annual water savings figure to a large amount. This indefinite savings figure was not included in the above calculated cubic footage.

Other common defects found in the six key study condominium sprinkler systems were as follows:

Poor design of sprinkler head coverage and/or improper adjustment so that the water spray overlapped to excess causing an over-watering condition.

Many bubblers were found too far from shrub or plant causing an overwatering condition for water to reach plant area.

Many sprinkler heads in need of direction adjustment, 1/2-heads spraying sidewalk, 1/4-heads spraying walls, etc.

Rainbird sprinkler heads and sprinkler spray heads on same station. Water time adjusted for rainbirds, overwatering condition on spray head area.

Readjustment of watering time on one station for entire area due to one dry lawn area, causing overwatering rather than correction to lawn or earth problem.

Control and setting of time clock watering time was recommended to be under one supervisor. Adjustments were found to be as far off as five minutes. No set pattern of watering time or length was found on one condominium due to any gardner helper setting his own estimated watering need.

Project: _____

Date: _____

Address: _____

Index No. _____

Met With: _____

Phone: _____

Total Meters: _____ Domestic _____ Irrigation _____ Both _____

Total Time Clocks: _____

Stations Per Time Clock: _____

Winter Irrigation Cycle: _____

Summer Irrigation Cycle: _____

Solenoid Valves: Brass _____ Plastic _____ Other _____

Sprinkler Heads: Brass _____ Plastic _____ Other _____

Washing of: Patio _____ Driveways _____

Inspection of System: _____

Accessibility to Clocks: _____

Excessive Run-off: _____

Accuracy of Clocks: _____

Total Sprinklers Inspected: _____

Total Bubblers Inspected: _____

Total Sprinkler Heads Low: _____

Total Heads Broken: _____

Average Length of Running Times per Station: _____

Special Conditions: _____

<u>CONSUMPTION - (SEE #5)</u>	<u>CUBIC FEET</u>	<u>COST=BASED ON \$.30/100 C.F.</u>
1 Station per minute (See #3 & #4)	_____	\$ _____
___ Station(s) per min. (See #3 & #4)	_____	\$ _____
___ Stations/Month (Est. Average Irrig. 20 Day/Month) (See 1 & 2)	_____	\$ _____
___ Stations 20 Day/Month 12 Months/Year (See #1 & #2)	_____	\$ _____

By reducing or turning back each station by _____ minutes from _____ minutes to _____ minutes as shown below, this could result in an approximate _____ % reduction in consumption on _____ meter(s).

<u>CONSUMPTION</u>	<u>CUBIC FEET</u>	<u>COST=BASED ON \$.30/100 C.F.</u>
1 Station per minute (See #3 & #4)	_____	\$ _____
___ Station(s) per min. (See #3 & #4)	_____	\$ _____
___ Stations/Month (Est. Average Irrig. 20 Day/Month) (See 1 & 2)	_____	\$ _____
___ Stations 20 Day/Month 12 Months/Year (See #1 & #2)	_____	\$ _____

	<u>CU. FT.</u>	<u>GALLONS</u>	<u>COST</u>
Present estimated consumption	_____	_____	_____
Proposed estimated reduction	_____	_____	_____
Annual est. Potential savings	_____	_____	_____
Total time clocks _____			
Total Stations _____			
Total Irrigation Meters _____			
Average Length of Running Time Per Station _____			

Formula Used:

1. Total C.F. used per year ÷ 12 gives you total of C.F. per month.
2. Total C.F. per month ÷ 20 days per month (Est. total watering days per month/annually) = total C.F. used per day.
3. Total C.F. used per day ÷ # of stations = C.F. used per station per day.
4. Total C.F. per station per day ÷ by average length of running time per station per cycle = total C.F. used per station per minute.
5. Based on an annual average of billing of _____ irrigation meters.

APPENDIX D
2003 AND 2004 CUWCC BMP REPORTS

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit: **Desert Water Agency** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

- | | |
|--|------------|
| 1. Based on your signed MOU date, 10/15/1991, your Agency STRATEGY DUE DATE is: | 10/14/1993 |
| 2. Has your agency developed and implemented a targeting/marketing strategy for SINGLE-FAMILY residential water use surveys? | no |
| a. If YES, when was it implemented? | |
| 3. Has your agency developed and implemented a targeting/marketing strategy for MULTI-FAMILY residential water use surveys? | no |
| a. If YES, when was it implemented? | |

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	0	0
2. Number of surveys completed:	0	0
Indoor Survey:		
3. Check for leaks, including toilets, faucets and meter checks	no	no
4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary	no	no
5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as necessary; replace leaking toilet flapper, as necessary	no	no
Outdoor Survey:		
6. Check irrigation system and timers	no	no
7. Review or develop customer irrigation schedule	no	no
8. Measure landscaped area (Recommended but not required for surveys)	no	no
9. Measure total irrigable area (Recommended but not required for surveys)	no	no
10. Which measurement method is typically used (Recommended but not required for surveys)		None
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	no	no
12. Have the number of surveys offered and	no	no

completed, survey results, and survey costs been tracked?

a. If yes, in what form are surveys tracked? None

b. Describe how your agency tracks this information.

C. Water Survey Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

Desert Water Agency studies have realized that as much as 80% of all residential water use is for landscape irrigation. Therefore, we have concluded that it is more cost effective for us to concentrate the bulk of our efforts on reducing water consumption in the landscape. We, therefore, have chosen to direct our resources into performing BMP #5. (See Water Conservation Program of the Desert Water Agency on file with the CUWCC).

BMP 02: Residential Plumbing Retrofit

Reporting Unit: **Desert Water Agency** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? no
a. If YES, list local jurisdictions in your service area and code or ordinance in each:
2. Has your agency satisfied the 75% saturation requirement for single-family housing units? no
3. Estimated percent of single-family households with low-flow showerheads: %
4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? no
5. Estimated percent of multi-family households with low-flow showerheads: %
6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? no
a. If YES, when did your agency begin implementing this strategy?
b. Describe your targeting/ marketing strategy.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	0	0
3. Number of toilet-displacement devices distributed:	0	0
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	0	0
6. Does your agency track the distribution and cost of low-flow devices? no a. If YES, in what format are low-flow devices tracked? b. If yes, describe your tracking and distribution system :		

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

In January 1977, Desert Water Agency published the results of a residential pilot program to analyze the Agency's customer water use habits, and to establish the focus of a water conservation program (copy on file with the CUWCC). From the study, it was determined that in our service area, 60 to 80% of all residential water use is for landscape irrigation. This is due to our arid desert environment where temperatures reach as high as 123F. The study did involve the installation of devices such as low flow showerheads and toilet displacement devices by Agency personnel. Public acceptance of the showerheads was favorable; however, the toilet devices did not operate as well. Since such a large percentage of water was found to be used for landscape irrigation, it was felt that future programs should be directed toward customers reducing water use in the landscape as it has the highest potential for savings and is the most cost effective.

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:	BMP Form Status:	Year:
Desert Water Agency	100% Complete	2003

A. Implementation

- | | |
|--|------|
| 1. Has your agency completed a pre-screening system audit for this reporting year? | no |
| 2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production: | |
| a. Determine metered sales (AF) | |
| b. Determine other system verifiable uses (AF) | |
| c. Determine total supply into the system (AF) | |
| d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required. | 0.00 |
| 3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production? | yes |
| 4. Did your agency complete a full-scale audit during this report year? | no |
| 5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit? | no |
| 6. Does your agency operate a system leak detection program? | no |
| a. If yes, describe the leak detection program: | |

B. Survey Data

- | | |
|--|-----|
| 1. Total number of miles of distribution system line. | 366 |
| 2. Number of miles of distribution system line surveyed. | 0 |

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

- | | |
|---|-----|
| 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? | yes |
|---|-----|

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

Desert Water Agency informs all customers of possible on-site leaks when excessive consumption occurs when compared to the prior year's usage. Desert Water Agency performs water audits by metering all customer connections and water used for construction purposes through fire hydrants. Water used for other purposes such as city street washing and fire fighting is also recorded. The combined usage is calculated and the % unaccounted for determined. We do not have a leak detection program as we feel it is more cost effective to fund an aggressive main replacement

program. Additionally, the soils in our area are comprised of coarse sand. This allows water from a leak to surface quickly where it is easily detected. All leaks are repaired as soon as they are discovered to prevent damage and waste of water. All leaks are tracked on maps and on a pipeline inventory computer program. Mains with a history of leaks are budgeted for replacement, as are aging mains.

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit: **Desert Water Agency** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

- 1. Does your agency require meters for all new connections and bill by volume-of-use? yes
- 2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use? no
 - a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed?
 - b. Describe the program:
Desert Water Agency has no unmetered services.
- 3. Number of previously unmetered accounts fitted with meters during report year. 0

B. Feasibility Study

- 1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? no
 - a. If YES, when was the feasibility study conducted? (mm/dd/yy)
 - b. Describe the feasibility study:
Landscape water audits conducted and consumptive use mailings have shown that the majority of applicable developments within DWA's service area were fitted with dedicated irrigation meters at the time of construction.
- 2. Number of CII accounts with mixed-use meters. 0
- 3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period. 0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

- 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:
Desert Water
Agency

BMP Form Status:
100% Complete

Year:
2003

A. Water Use Budgets

- | | |
|--|----|
| 1. Number of Dedicated Irrigation Meter Accounts: | 0 |
| 2. Number of Dedicated Irrigation Meter Accounts with Water Budgets: | 0 |
| 3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF): | 0 |
| 4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF): | 0 |
| 5. Does your agency provide water use notices to accounts with budgets each billing cycle? | no |

B. Landscape Surveys

- | | |
|--|------------|
| 1. Has your agency developed a marketing / targeting strategy for landscape surveys? | yes |
| a. If YES, when did your agency begin implementing this strategy? | 07/01/1989 |
| b. Description of marketing / targeting strategy:
(Please note that the correct entry in A.1. is NOT DETERMINED. As your system will not accept this, I have utilized a "0" in its place. | |
| 2. Number of Surveys Offered. | 0 |
| 3. Number of Surveys Completed. | 0 |
| 4. Indicate which of the following Landscape Elements are part of your survey: | |
| a. Irrigation System Check | yes |
| b. Distribution Uniformity Analysis | yes |
| c. Review / Develop Irrigation Schedules | yes |
| d. Measure Landscape Area | yes |
| e. Measure Total Irrigable Area | yes |
| f. Provide Customer Report / Information | yes |
| 5. Do you track survey offers and results? | yes |
| 6. Does your agency provide follow-up surveys for previously completed surveys? | yes |
| a. If YES, describe below:
Follow-up surveys are performed after a period of five years following the initial survey, or as requested by a customer. The follow-up surveys consist of a complete reevaluation of the site, a comparison with the data from the prior evaluation, and any recommendations. | |

C. Other BMP 5 Actions

- | | |
|--|-----|
| 1. An agency can provide mixed-use accounts with ETo-based | yes |
|--|-----|

landscape budgets in lieu of a large landscape survey program.
Does your agency provide mixed-use accounts with landscape budgets?

2. Number of CII mixed-use accounts with landscape budgets. 0
3. Do you offer landscape irrigation training? no
4. Does your agency offer financial incentives to improve landscape water use efficiency? no

Type of Financial Incentive:	Budget (Dollars/ Year)	Number Awarded to Customers	Total Amount Awarded
a. Rebates			
b. Loans			
c. Grants			

5. Do you provide landscape water use efficiency information to new customers and customers changing services? yes

a. If YES, describe below:

Desert Water Agency provides all new customers and customers changing service with a comprehensive, easy-to-read brochure which includes all facets of our functions, along with water conservation information.

6. Do you have irrigated landscaping at your facilities? yes
- a. If yes, is it water-efficient? yes
- b. If yes, does it have dedicated irrigation metering? yes
7. Do you provide customer notices at the start of the irrigation season? no
8. Do you provide customer notices at the end of the irrigation season? no

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	18000	18000
2. Actual Expenditures	0	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

F. Comments

Desert Water Agency is evaluating the cost effectiveness of our landscape water audit program in terms of actual water saved. (No audits were performed, and hence, no actual expenditures). As of this submission, staff is reviewing with our board a revised program, which may include funding customer site improvements to increase the water efficiency of their project. We have interested parties, and are working out the details of the program.

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit: **Desert Water Agency** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers? no
 - a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.

2. Does your agency offer rebates for high-efficiency washers? no
3. What is the level of the rebate?
4. Number of rebates awarded.

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Desert Water Agency studies have realized that as much as 80% of all residential water use is for landscape irrigation. Therefore, we have concluded that it is more cost effective for us to concentrate the bulk of our efforts on reducing water consumption in the landscape. We, therefore, have chosen to direct our resources into performing BMP #5. (See Water Conservation Program of the Desert Water Agency on file with the CUWCC).

BMP 07: Public Information Programs

Reporting Unit:

Desert Water Agency

BMP Form Status:

100% Complete

Year:

2003

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

Public education has played an expanding role in the Agency's formal Water Conservation Program since adoption by its board of directors in 1982. The program utilizes both staff personnel and contract consultants. All aspects of the Agency's functions are communicated to the public utilizing the items checked below.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	no	
b. Public Service Announcement	no	
c. Bill Inserts / Newsletters / Brochures	yes	3
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	yes	2
f. Special Events, Media Events	yes	2
g. Speaker's Bureau	yes	15
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	97200	85800
2. Actual Expenditures	148906	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

BMP 08: School Education Programs

Reporting Unit:

Desert Water Agency

BMP Form Status:

100% Complete

Year:

2003

A. Implementation

1. Has your agency implemented a school information program to promote water conservation? yes

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	yes	5	150	0
Grades 4th-6th	yes	60	1750	0
Grades 7th-8th	yes	35	1380	0
High School	no	0	0	0

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program? 05/01/1989

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	17000	0
2. Actual Expenditures	17000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Please note that the entity Desert Water Agency contracted with to perform its in-classroom school education program (Palm Springs Desert Museum) elected to dissolve its Natural Science Education Program effective July 1, 2004. The Agency's board of directors is exploring options for a suitable replacement program.

BMP 09: Conservation Programs for CII Accounts

Reporting Unit: Desert Water Agency	BMP Form Status: 100% Complete	Year: 2003
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A. Implementation

- | | |
|--|----|
| 1. Has your agency identified and ranked COMMERCIAL customers according to use? | no |
| 2. Has your agency identified and ranked INDUSTRIAL customers according to use? | no |
| 3. Has your agency identified and ranked INSTITUTIONAL customers according to use? | no |

Option A: CII Water Use Survey and Customer Incentives Program

- | | |
|---|----|
| 4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option? | no |
|---|----|

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered			
b. Number of New Surveys Completed			
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)			
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)			
CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit			
f. Evaluation of all water-using apparatus and processes			
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives			
Agency CII Customer Incentives	Budget (\$/Year)	No. Awarded to Customers	Total \$ Amount Awarded
h. Rebates			
i. Loans			

- j. Grants
- k. Others

Option B: CII Conservation Program Targets

- 5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option? yes
- 6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings? no
- 7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991. 0
- 8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991. 0

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

- 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

- a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

Please note that Desert Water chooses to perform neither Option A, nor Option B. The explanation for doing so is contained in the Comments, below. ("Yes" was checked for Option B as CII accounts are tracked for purposes of the mailings listed below, but not specifically for BMP #9).

BMP 09a: CII ULFT Water Savings

Reporting Unit:

Desert Water Agency

BMP Form Status:

100% Complete

Year:

2003

1. Did your agency implement a CII ULFT replacement program in the reporting year?
If No, please explain why on Line B. 10.

No

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program? Check all that apply.

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

2. How does your agency advertise this program? Check all that apply.

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.)

2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency?

3. What is the total number of customer accounts participating in the program during the last year ?

CII Subsector	Number of Toilets Replaced			
	Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount
4.				
a. Offices				
b. Retail / Wholesale				
c. Hotels				
d. Health				
e. Industrial				
f. Schools: K to 12				
g. Eating				

- h. Govern-ment
- i. Churches
- j. Other

5. Program design.

6. Does your agency use outside services to implement this program?

a. If yes, check all that apply.

7. Participant tracking and follow-up.

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

- a. Disruption to business
- b. Inadequate payback
- c. Inadequate ULFT performance
- d. Lack of funding
- e. American's with Disabilities Act
- f. Permitting
- g. Other. Please describe in B. 9.

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other issues affecting program implementation or effectiveness.

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

Desert Water Agency studies have realized that as much as 80% of all residential water use is for landscape irrigation. Therefore, we have concluded that it is more cost effective for us to concentrate the bulk of our efforts on reducing water consumption in the landscape. We, therefore, have chosen to direct our resources into performing BMP #5. (See Water Conservation Program of the Desert Water Agency on file with the CUWCC).

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor		
b. Materials		
c. Marketing & Advertising		
d. Administration & Overhead		
e. Outside Services		

f. Total	0	0
----------	---	---

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution		
b. State agency contribution		
c. Federal agency contribution		
d. Other contribution		
e. Total		0

BMP 11: Conservation Pricing

Reporting Unit:
Desert Water Agency

BMP Form
Status:
100% Complete

Year:
2003

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Non-volumetric Flat Rate
c. Total Revenue from Volumetric Rates	\$8992366
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$717818

2. Commercial

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$3653915
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

3. Industrial

a. Water Rate Structure	Service Not Provided
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

4. Institutional / Government

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$602907
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

5. Irrigation

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$439092
d. Total Revenue from Non-Volumetric	\$0

BMP 12: Conservation Coordinator

Reporting Unit: Desert Water Agency	BMP Form Status: 100% Complete	Year: 2003
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A. Implementation

1. Does your Agency have a conservation coordinator? yes
2. Is this a full-time position? yes
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ?
4. Partner agency's name:
5. If your agency supplies the conservation coordinator:
 - a. What percent is this conservation coordinator's position? 38%
 - b. Coordinator's Name Michael F. Bergan
 - c. Coordinator's Title Administrative Services Officer
 - d. Coordinator's Experience and Number of Years 24
 - e. Date Coordinator's position was created (mm/dd/yyyy) 01/02/1977
6. Number of conservation staff, including Conservation Coordinator. 1

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	59400	85800
2. Actual Expenditures	40187	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

BMP 13: Water Waste Prohibition

Reporting Unit:

BMP Form Status:

Year:

Desert Water Agency

100% Complete

2003

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? yes

a. If YES, describe the ordinance:

Desert Water Agency's Board of Directors adopted Ordinance No. 31, An Ordinance Prohibiting the Waste of Water. It defines "waste," discusses actions to be taken, spells out customers' rights, and states exemptions.

2. Is a copy of the most current ordinance(s) on file with CUWCC? yes

a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

Desert Water Agency

Typically, violators have been cooperative in eliminating waste after being sent a letter informing them of the situation.

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

- | | |
|--|-----|
| a. Gutter flooding | yes |
| b. Single-pass cooling systems for new connections | no |
| c. Non-recirculating systems in all new conveyor or car wash systems | yes |
| d. Non-recirculating systems in all new commercial laundry systems | no |
| e. Non-recirculating systems in all new decorative fountains | no |
| f. Other, please name | no |

2. Describe measures that prohibit water uses listed above:

a. In cases such as gutter flooding, written notice is sent to the subject customer, or a blanket mailing is conducted throughout neighborhoods with high incidents of waste. b. In areas where Desert Water Agency is responsible for sewage collection, plans are checked to insure that a recirculating system is used.

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

- | | |
|---|----|
| a. Allow the sale of more efficient, demand-initiated regenerating DIR models. | no |
| b. Develop minimum appliance efficiency standards that: | |
| i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. | no |
| ii.) Implement an identified maximum number of gallons discharged per gallon of soft water | no |

produced.

c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply. no

4. Does your agency include water softener checks in home water audit programs? no

5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models? no

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Please note that Water Waste Prohibition Program costs are included in the Conservation Staff Program Expenditures, BMP 12.

BMP 14: Residential ULFT Replacement Programs

Reporting Unit: **Desert Water Agency** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

	Single-Family Accounts	Multi- Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	no	no
Number of Toilets Replaced by Agency Program During Report Year		
Replacement Method	SF Accounts	MF Units
2. Rebate	0	0
3. Direct Install	0	0
4. CBO Distribution	0	0
5. Other	0	0
Total	0	0

6. Describe your agency's ULFT program for single-family residences.
7. Describe your agency's ULFT program for multi-family residences.
8. Is a toilet retrofit on resale ordinance in effect for your service area? no
9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
- a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Desert Water Agency studies have realized that as much as 80% of all residential water use is for landscape irrigation. Therefore, we have concluded that it is more cost effective for us to concentrate the bulk of our efforts on reducing water consumption in the landscape. We, therefore, have chosen to direct our resources into performing BMP #5. (See Water Conservation Program of the Desert Water Agency on file with the CUWCC).

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit: **Desert Water Agency** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

1. Based on your signed MOU date, 10/15/1991, your Agency STRATEGY DUE DATE is: 10/14/1993
2. Has your agency developed and implemented a targeting/ marketing strategy for SINGLE-FAMILY residential water use surveys? no
- a. If YES, when was it implemented?
3. Has your agency developed and implemented a targeting/ marketing strategy for MULTI-FAMILY residential water use surveys? no
- a. If YES, when was it implemented?

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	0	0
2. Number of surveys completed:	0	0
Indoor Survey:		
3. Check for leaks, including toilets, faucets and meter checks	no	no
4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary	no	no
5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as necessary; replace leaking toilet flapper, as necessary	no	no
Outdoor Survey:		
6. Check irrigation system and timers	no	no
7. Review or develop customer irrigation schedule	no	no
8. Measure landscaped area (Recommended but not required for surveys)	no	no
9. Measure total irrigable area (Recommended but not required for surveys)	no	no
10. Which measurement method is typically used (Recommended but not required for surveys)		None
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	no	no

12. Have the number of surveys offered and completed, survey results, and survey costs been tracked? no no

a. If yes, in what form are surveys tracked? None

b. Describe how your agency tracks this information.

C. Water Survey Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

Desert Water Agency studies have realized that as much as 80% of all residential water use is for landscape irrigation. Therefore, we have concluded that it is more cost effective for us to concentrate the bulk of our efforts on reducing water consumption in the landscape. We, therefore, have chosen to direct our resources into performing BMP #5. (See Water Conservation Program of the Desert Water Agency on file with the CUWCC).

BMP 02: Residential Plumbing Retrofit

Reporting Unit: **Desert Water Agency** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? no
a. If YES, list local jurisdictions in your service area and code or ordinance in each:
2. Has your agency satisfied the 75% saturation requirement for single-family housing units? no
3. Estimated percent of single-family households with low-flow showerheads: %
4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? no
5. Estimated percent of multi-family households with low-flow showerheads: %
6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? no
a. If YES, when did your agency begin implementing this strategy?
b. Describe your targeting/ marketing strategy.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	0	0
3. Number of toilet-displacement devices distributed:	0	0
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	0	0
6. Does your agency track the distribution and cost of low-flow devices? no a. If YES, in what format are low-flow devices tracked? b. If yes, describe your tracking and distribution system :		

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

In January 1977, Desert Water Agency published the results of a residential pilot program to analyze the Agency's customer water use habits, and to establish the focus of a water conservation program (copy on file with the CUWCC). From the study, it was determined that in our service area, 60 to 80% of all residential water use is for landscape irrigation. This is due to our arid desert environment where temperatures reach as high as 123F. The study did involve the installation of devices such as low flow showerheads and toilet displacement devices by Agency personnel. Public acceptance of the showerheads was favorable; however, the toilet devices did not operate as well. Since such a large percentage of water was found to be used for landscape irrigation, it was felt that future programs should be directed toward customers reducing water use in the landscape as it has the highest potential for savings and is the most cost effective.

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit: **Desert Water Agency** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year? no
2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:
 - a. Determine metered sales (AF)
 - b. Determine other system verifiable uses (AF)
 - c. Determine total supply into the system (AF)
 - d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required. 0.00
3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production? yes
4. Did your agency complete a full-scale audit during this report year? no
5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit? no
6. Does your agency operate a system leak detection program? no
 - a. If yes, describe the leak detection program:

B. Survey Data

1. Total number of miles of distribution system line. 368
2. Number of miles of distribution system line surveyed. 0

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

Desert Water Agency informs all customers of possible on-site leaks when excessive consumption occurs when compared to the prior year's usage. Desert Water Agency performs water audits by metering all customer connections and water used for construction purposes through fire hydrants. Water used for other purposes such as city street washing and fire fighting is also recorded. The combined usage is calculated and the % unaccounted for determined. We do not have a leak detection program as we feel it is more cost effective to fund an aggressive main replacement

program. Additionally, the soils in our area are comprised of coarse sand. This allows water from a leak to surface quickly where it is easily detected. All leaks are repaired as soon as they are discovered to prevent damage and waste of water. All leaks are tracked on maps and on a pipeline inventory computer program. Mains with a history of leaks are budgeted for replacement, as are aging mains.

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit: **Desert Water Agency** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

- 1. Does your agency require meters for all new connections and bill by volume-of-use? yes
- 2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use? no
 - a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed?
 - b. Describe the program:
Desert Water Agency has no unmetered services.
- 3. Number of previously unmetered accounts fitted with meters during report year. 0

B. Feasibility Study

- 1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? no
 - a. If YES, when was the feasibility study conducted?
(mm/dd/yy)
 - b. Describe the feasibility study:
Landscape water audits conducted and consumptive use mailings have shown that the majority of applicable developments within DWA's service area were fitted with dedicated irrigation meters at the time of construction.
- 2. Number of CII accounts with mixed-use meters. 0
- 3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period. 0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

- 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:
Desert Water
Agency

BMP Form Status:
100% Complete

Year:
2004

A. Water Use Budgets

- | | |
|--|----|
| 1. Number of Dedicated Irrigation Meter Accounts: | 0 |
| 2. Number of Dedicated Irrigation Meter Accounts with Water Budgets: | 0 |
| 3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF): | 0 |
| 4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF): | 0 |
| 5. Does your agency provide water use notices to accounts with budgets each billing cycle? | no |

B. Landscape Surveys

- | | |
|---|------------|
| 1. Has your agency developed a marketing / targeting strategy for landscape surveys? | yes |
| a. If YES, when did your agency begin implementing this strategy? | 07/01/1989 |
| b. Description of marketing / targeting strategy:
(Please note that the correct entry in A.1. is NOT DETERMINED. As your system will not accept this, I have utilized a "0" in its place.) | |
| 2. Number of Surveys Offered. | 5 |
| 3. Number of Surveys Completed. | 5 |
| 4. Indicate which of the following Landscape Elements are part of your survey: | |
| a. Irrigation System Check | yes |
| b. Distribution Uniformity Analysis | yes |
| c. Review / Develop Irrigation Schedules | yes |
| d. Measure Landscape Area | yes |
| e. Measure Total Irrigable Area | yes |
| f. Provide Customer Report / Information | yes |
| 5. Do you track survey offers and results? | yes |
| 6. Does your agency provide follow-up surveys for previously completed surveys? | no |
| a. If YES, describe below:
Follow-up surveys are performed following customer implementation of recommended changes, or as requested by the customer. | |

C. Other BMP 5 Actions

- | | |
|---|-----|
| 1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. | yes |
|---|-----|

- Does your agency provide mixed-use accounts with landscape budgets? 0
2. Number of CII mixed-use accounts with landscape budgets. 0
3. Do you offer landscape irrigation training? no
4. Does your agency offer financial incentives to improve landscape water use efficiency? no

Type of Financial Incentive:	Budget (Dollars/Year)	Number Awarded to Customers	Total Amount Awarded
a. Rebates	0	0	0
b. Loans	0	0	0
c. Grants	0	0	0

5. Do you provide landscape water use efficiency information to new customers and customers changing services? yes

a. If YES, describe below:

Desert Water Agency provides all new customers and customers changing service with a comprehensive, easy-to-read brochure which includes all facets of our functions, along with water conservation information.

6. Do you have irrigated landscaping at your facilities? yes
- a. If yes, is it water-efficient? yes
- b. If yes, does it have dedicated irrigation metering? yes
7. Do you provide customer notices at the start of the irrigation season? no
8. Do you provide customer notices at the end of the irrigation season? no

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	12500	0
2. Actual Expenditures	5100	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

BMP 07: Public Information Programs

Reporting Unit: **Desert Water Agency** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

Public education has played an expanding role in the Agency's formal Water Conservation Program since adoption by its board of directors in 1982. The program utilizes both staff personnel and contract consultants. All aspects of the Agency's functions are communicated to the public utilizing the items checked below. Additionally, this year, the Agency redesigned and expanded its Web site. It is now more user friendly, and several items were added in order to better serve the public.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	no	
b. Public Service Announcement	no	
c. Bill Inserts / Newsletters / Brochures	yes	2
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	yes	2
f. Special Events, Media Events	yes	1
g. Speaker's Bureau	yes	15
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	58500	0
2. Actual Expenditures	184237	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

BMP 08: School Education Programs

Reporting Unit:
Desert Water Agency

BMP Form Status:
100% Complete

Year:
2004

A. Implementation

1. Has your agency implemented a school information program to promote water conservation? yes

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	no	0	0	0
Grades 4th-6th	no	0	0	0
Grades 7th-8th	no	0	0	0
High School	no	0	0	0

3. Did your Agency's materials meet state education framework requirements? no

4. When did your Agency begin implementing this program? 05/01/1989

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Please note that the entity Desert Water Agency contracted with to perform its in-classroom school education program (Palm Springs Desert Museum) elected to dissolve its Natural Science Education Program effective July 1, 2004. The Agency's board of directors is exploring options for a suitable replacement program.

BMP 09: Conservation Programs for CII AccountsReporting Unit:
Desert Water AgencyBMP Form Status:
100% CompleteYear:
2004**A. Implementation**

- | | |
|--|----|
| 1. Has your agency identified and ranked COMMERCIAL customers according to use? | no |
| 2. Has your agency identified and ranked INDUSTRIAL customers according to use? | no |
| 3. Has your agency identified and ranked INSTITUTIONAL customers according to use? | no |

Option A: CII Water Use Survey and Customer Incentives Program

- | | |
|---|----|
| 4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option? | no |
|---|----|

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered			
b. Number of New Surveys Completed			
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)			
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)			

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit			
f. Evaluation of all water-using apparatus and processes			
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives			

Agency CII Customer Incentives	Budget (\$/Year)	No. Awarded to Customers	Total \$ Amount Awarded
h. Rebates			
i. Loans			

- j. Grants
- k. Others

Option B: CII Conservation Program Targets

- 5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option? yes
- 6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings? no
- 7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991. 0
- 8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991. 0

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

- 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

- a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

Please note that Desert Water chooses to perform neither Option A, nor Option B. The explanation for doing so is contained in the Comments, below. ("Yes" was checked for Option B as CII accounts are tracked for purposes of the mailings listed below, but not specifically for BMP #9).

BMP 09a: CII ULFT Water Savings

Reporting Unit:
Desert Water Agency

BMP Form Status:
100% Complete

Year:
2004

1. Did your agency implement a CII ULFT replacement program in the reporting year?
If No, please explain why on Line B. 10.

No

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program? Check all that apply.

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

2. How does your agency advertise this program? Check all that apply.

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.)

2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency?

3. What is the total number of customer accounts participating in the program during the last year ?

CII Subsector

Number of Toilets Replaced

4.	Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount
a. Offices				
b. Retail / Wholesale				
c. Hotels				
d. Health				
e. Industrial				
f. Schools: K to 12				
g. Eating				

- h. Govern-
ment
- i. Churches
- j. Other

5. Program design.

6. Does your agency use outside services to implement this program?

a. If yes, check all that apply.

7. Participant tracking and follow-up.

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

- a. Disruption to business
- b. Inadequate payback
- c. Inadequate ULFT performance
- d. Lack of funding
- e. American's with Disabilities Act
- f. Permitting
- g. Other. Please describe in B. 9.

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other issues affecting program implementation or effectiveness.

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

Desert Water Agency studies have realized that as much as 80% of all residential water use is for landscape irrigation. Therefore, we have concluded that it is more cost effective for us to concentrate the bulk of our efforts on reducing water consumption in the landscape. We, therefore, have chosen to direct our resources into performing BMP #5. (See Water Conservation Program of the Desert Water Agency on file with the CUWCC).

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor		
b. Materials		
c. Marketing & Advertising		
d. Administration & Overhead		
e. Outside Services		

f. Total	0	0
----------	---	---

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution		
b. State agency contribution		
c. Federal agency contribution		
d. Other contribution		
e. Total		0

BMP 11: Conservation Pricing

Reporting Unit: Desert Water Agency	BMP Form Status: 100% Complete	Year: 2004
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A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Non-volumetric Flat Rate
c. Total Revenue from Volumetric Rates	\$9136703
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$2155873

2. Commercial

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$3706689
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

3. Industrial

a. Water Rate Structure	Service Not Provided
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

4. Institutional / Government

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$588258
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

5. Irrigation

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$490926
d. Total Revenue from Non-Volumetric	\$0

Charges, Fees and other Revenue
Sources

6. Other

- | | |
|--|----------------------|
| a. Water Rate Structure | Service Not Provided |
| b. Sewer Rate Structure | Service Not Provided |
| c. Total Revenue from Volumetric Rates | \$0 |
| d. Total Revenue from Non-Volumetric
Charges, Fees and other Revenue
Sources | \$0 |

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

This Agency does not classify accounts as "Industrial." All customers of this type are included under "Commercial." "Service Not Provided" was listed within the "Industrial" category, as there were no other options that would reflect this.

BMP 12: Conservation Coordinator

Reporting Unit: Desert Water Agency	BMP Form Status: 100% Complete	Year: 2004
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A. Implementation

1. Does your Agency have a conservation coordinator? yes
2. Is this a full-time position? yes
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ?
4. Partner agency's name:
5. If your agency supplies the conservation coordinator:
 - a. What percent is this conservation coordinator's position? 38%
 - b. Coordinator's Name Michael F. Bergan
 - c. Coordinator's Title Administrative Services Officer
 - d. Coordinator's Experience and Number of Years 25
 - e. Date Coordinator's position was created (mm/dd/yyyy) 01/02/1977
6. Number of conservation staff, including Conservation Coordinator. 1

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	85800	0
2. Actual Expenditures	43651	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

BMP 13: Water Waste Prohibition

Reporting Unit: **Desert Water Agency** BMP Form Status: **100% Complete** Year: **2004**

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? yes

a. If YES, describe the ordinance:

Desert Water Agency's Board of Directors adopted Ordinance No. 31, An Ordinance Prohibiting the Waste of Water. It defines "waste," discusses actions to be taken, spells out customers' rights, and states exemptions.

2. Is a copy of the most current ordinance(s) on file with CUWCC? yes

a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

Desert Water Agency	Typically, violators have been cooperative in eliminating waste after being sent a letter informing them of the situation.
---------------------	--

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

- | | |
|--|-----|
| a. Gutter flooding | yes |
| b. Single-pass cooling systems for new connections | no |
| c. Non-recirculating systems in all new conveyor or car wash systems | yes |
| d. Non-recirculating systems in all new commercial laundry systems | no |
| e. Non-recirculating systems in all new decorative fountains | no |
| f. Other, please name | no |

2. Describe measures that prohibit water uses listed above:

a. In cases such as gutter flooding, written notice is sent to the subject customer, or a blanket mailing is conducted throughout neighborhoods with high incidents of waste. b. In areas where Desert Water Agency is responsible for sewage collection, plans are checked to insure that a recirculating system is used.

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

- | | |
|---|----|
| a. Allow the sale of more efficient, demand-initiated regenerating DIR models. | no |
| b. Develop minimum appliance efficiency standards that: | |
| i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. | no |
| ii.) Implement an identified maximum number of gallons discharged per gallon of soft water | no |

produced.

c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply. no

4. Does your agency include water softener checks in home water audit programs? no

5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models? no

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Please note that Water Waste Prohibition Program costs are included in the Conservation Staff Program Expenditures, BMP 12.

BMP 14: Residential ULFT Replacement Programs

Reporting Unit:
Desert Water Agency

BMP Form Status:
100% Complete

Year:
2004

A. Implementation

	Single-Family Accounts	Multi- Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	no	no

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	0	0
3. Direct Install	0	0
4. CBO Distribution	0	0
5. Other	0	0
Total	0	0

6. Describe your agency's ULFT program for single-family residences.

7. Describe your agency's ULFT program for multi-family residences.

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Desert Water Agency studies have realized that as much as 80% of all residential water use is for landscape irrigation. Therefore, we have concluded that it is more cost effective for us to concentrate the bulk of our efforts on reducing water consumption in the landscape. We, therefore, have chosen to direct our resources into performing BMP #5. (See Water Conservation Program of the Desert Water Agency on file with the CUWCC).

APPENDIX E

FIGURES

FIGURE 2
DESERT WATER AGENCY
URBAN WATER MANAGEMENT PLAN
POPULATION GROWTH WITHIN DWA SERVICE AREA

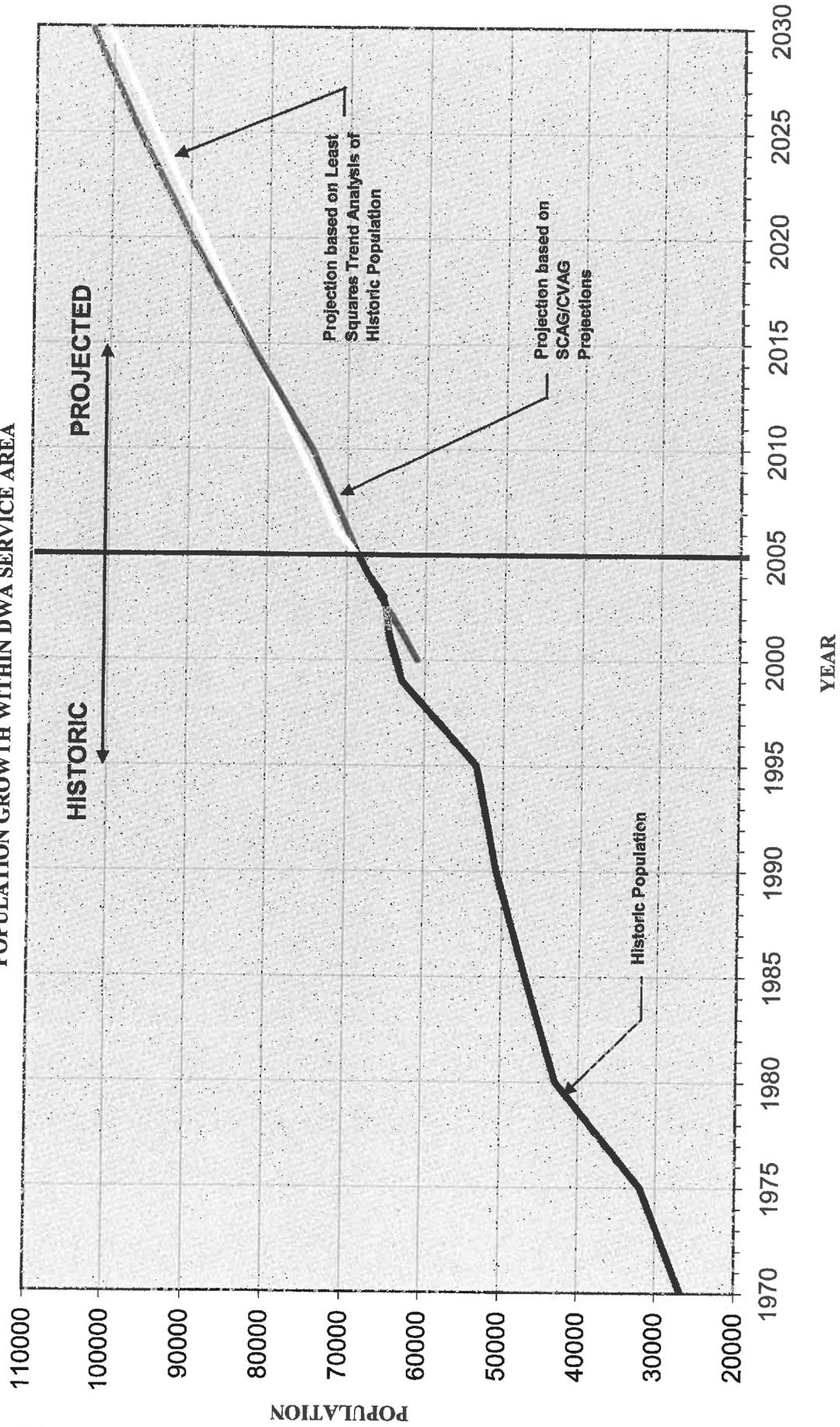


FIGURE 3
DESERT WATER AGENCY
URBAN WATER MANAGEMENT PLAN
POPULATION PROJECTIONS
DWA IN COMPARISON WITH RIVERSIDE COUNTY

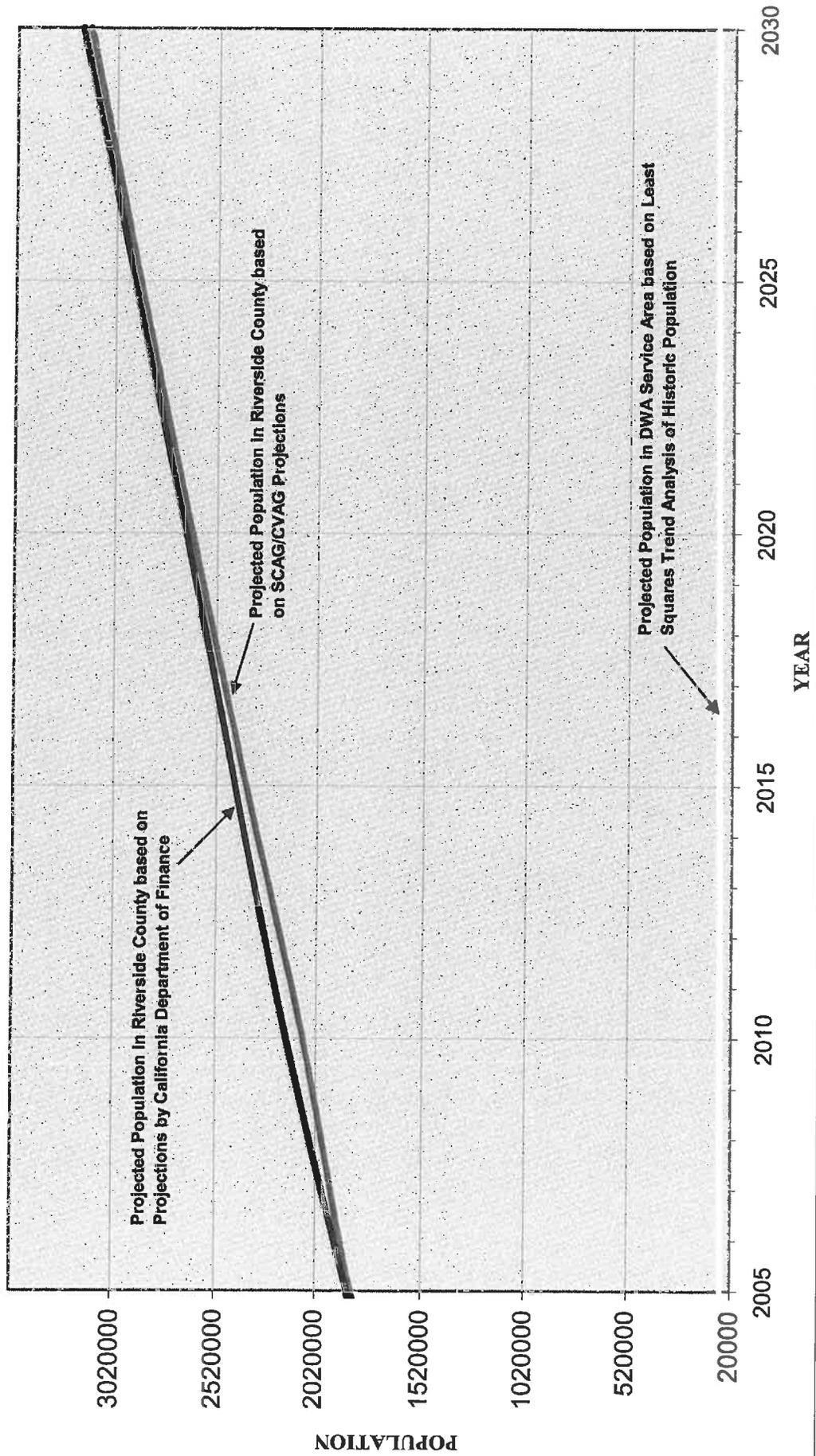
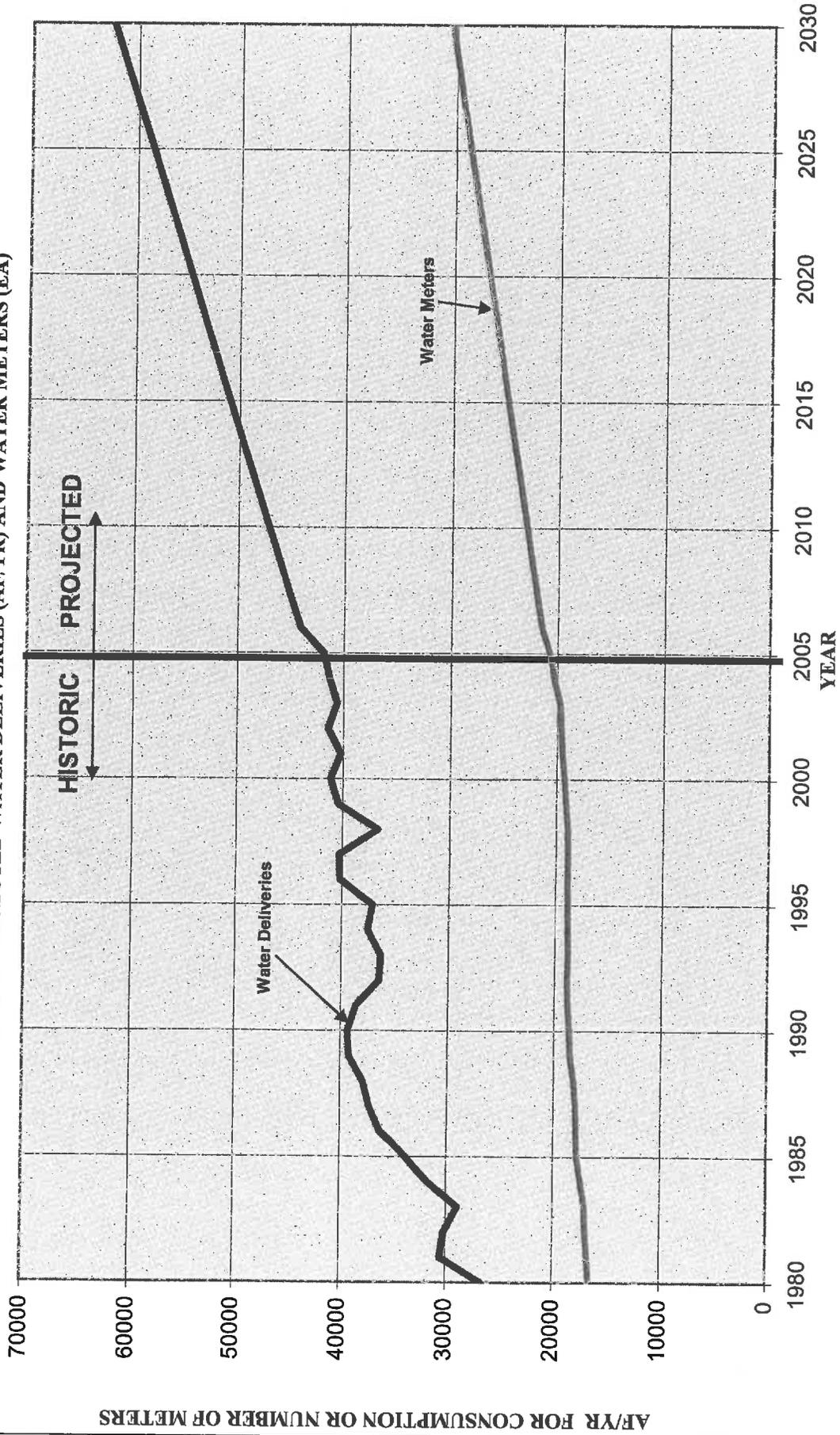
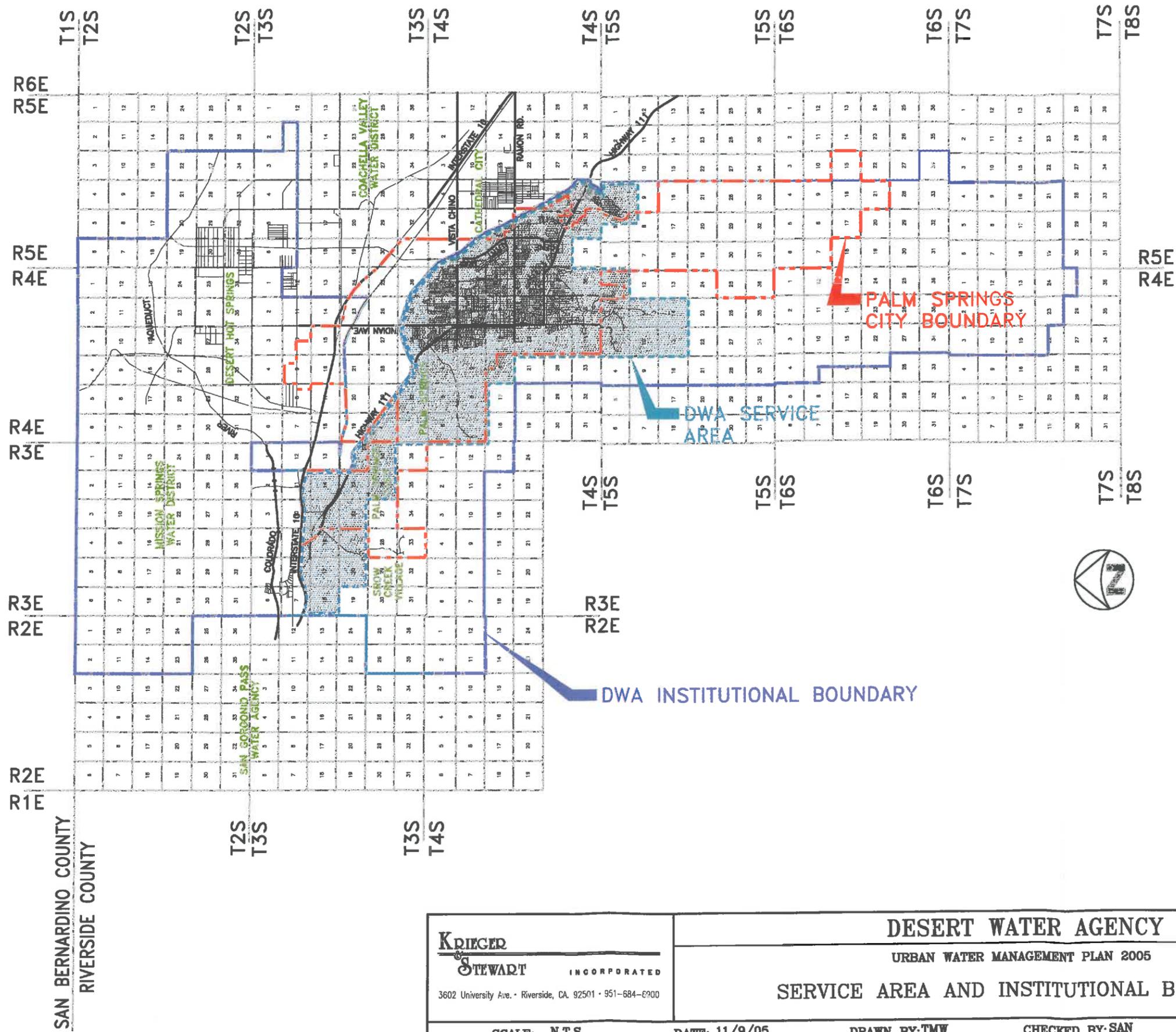


FIGURE 4
DESERT WATER AGENCY
URBAN WATER MANAGEMENT PLAN
HISTORIC AND PROJECTED WATER DELIVERIES (AF/YR) AND WATER METERS (EA)





SAN BERNARDINO COUNTY
RIVERSIDE COUNTY

KRIEGER & STEWART INCORPORATED
 3602 University Ave. • Riverside, CA. 92501 • 951-684-6900

DESERT WATER AGENCY
 URBAN WATER MANAGEMENT PLAN 2005
SERVICE AREA AND INSTITUTIONAL BOUNDARY

FIGURE
1
 OF 1

SCALE: N.T.S. DATE: 11/9/05 DRAWN BY: TMW CHECKED BY: SAN W.O.: 101-26.5

FIGURE 2
DESERT WATER AGENCY
URBAN WATER MANAGEMENT PLAN
POPULATION GROWTH WITHIN DWA SERVICE AREA

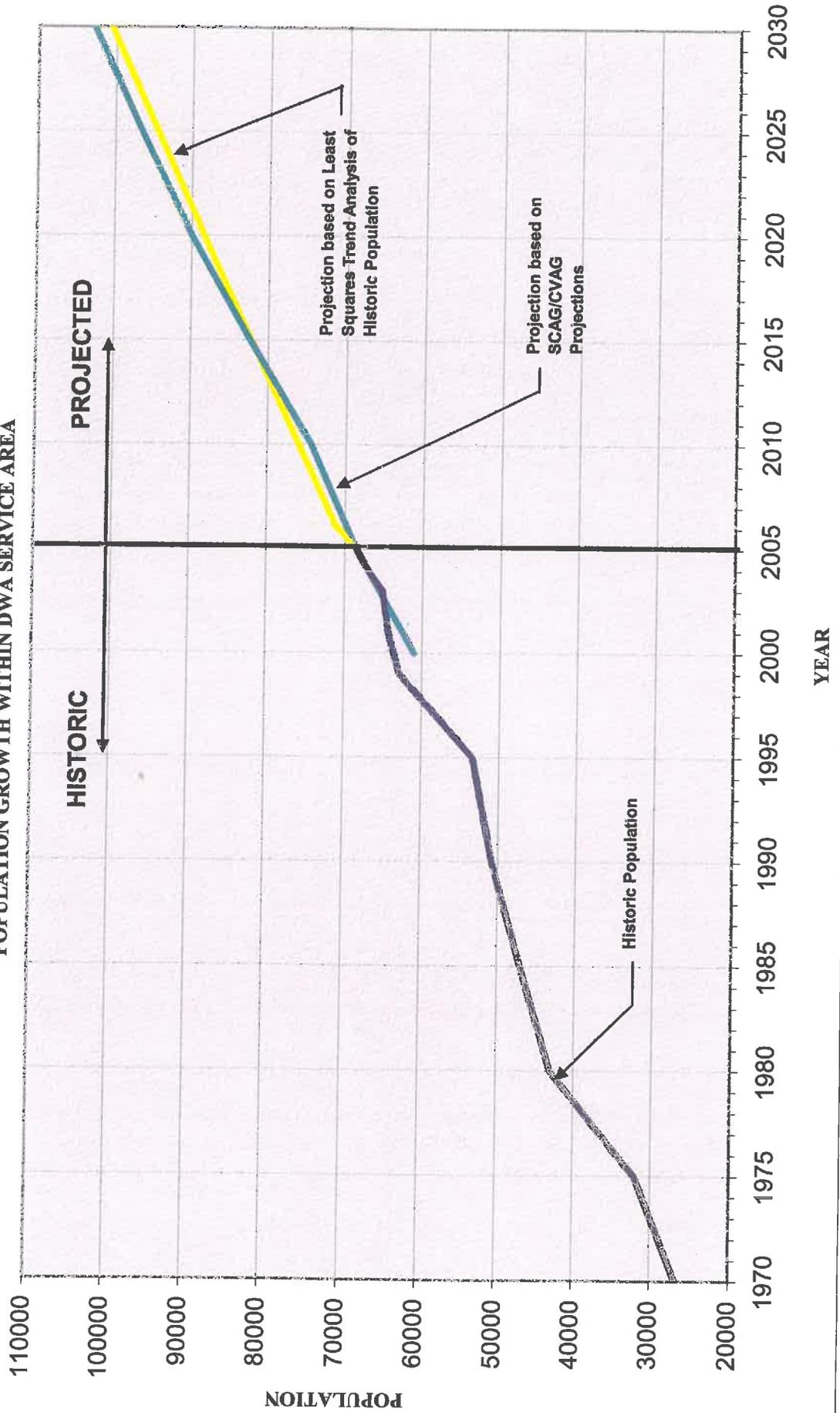


FIGURE 3
DESERT WATER AGENCY
URBAN WATER MANAGEMENT PLAN
POPULATION PROJECTIONS
DWA IN COMPARISON WITH RIVERSIDE COUNTY

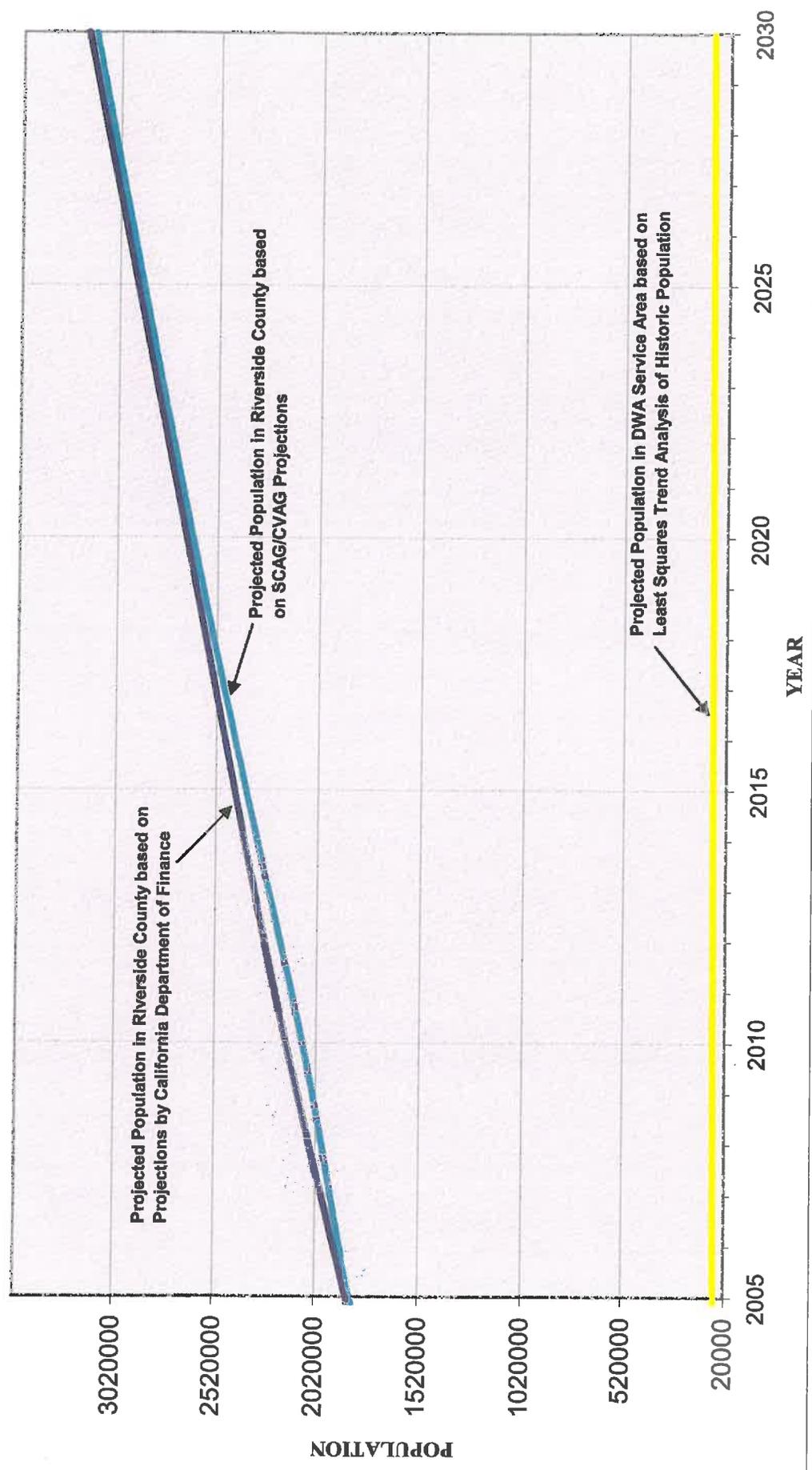


FIGURE 4
DESERT WATER AGENCY
URBAN WATER MANAGEMENT PLAN
HISTORIC AND PROJECTED WATER DELIVERIES (AF/YR) AND WATER METERS (EA)

