Palmdale Water District

Urban Water Management Plan









2010

Palmdale Water District
2010 Urban Water Management Plan

Prepared by:

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Water and Environment

June 2011

Errata/Additional Information Sheet
2010 Urban Water Management Plan- June 2011

Subsequent to the publication of the Draft 2010 Urban Water Management Plan, errors were found and additional information was made available by the Palmdale Water District, which will be incorporated into the Final 2010 Urban Water Management Plan upon adoption by the Palmdale Water District Board of Directors.

- **Whole Document**-All "%" symbols were changed to "percent" in the text (not including tables) for consistency.
- **Table of Contents- Page i**. Page numbers for Section 2 System Description were incorrect (i.e. Page 2-4 read Page 2-1). The page numbers were correctly updated in both Section 2 and Table of Contents.
- **Section 1.3 Agency Coordination and Public Participation – Page 1-2**. In Table 1-1, the column header "Sent copy of draft plan" was changed to read "Made copy of draft UWMP available". All listed coordinating agencies were subsequently selected.
- **Section 3.3.1 Water Use Targets- Page 3-9**. Table 3-14, under Method, the number 3 was replaced with 1. The correct method used for determining the Districts UWMP is Method 1.
- **Section 4.1 Overview of the District's Supplies- Page 4-1**. "Anticipated New Supplies" was changed to "Anticipated New Sources" for consistency.
- **Section 5.3 Water Supply Reliability- Page 5-12**. In Table 5-6, water quality is not a factor expected to result in inconsistency to local surface water supply, therefore it was unchecked. Only the box "climatic factor" was left selected for local surface water.
- **Section 5.4.1 Current Total Water Supply Reliability- Page 5-14**. The last two rows of Table 5-7 were bolded for consistency.
- **Appendix E-Resolution of UWMP Adoption**. The District's UWMP was formally adopted on June 22, 2011. A copy of the resolution has been included in the District's final version of the 2010 UWMP.

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List of Acronyms

ACWA	Association of California Water Agencies
AF	Acre-Feet
AFY	Acre-Feet Per Year
AVEK	Antelope Valley East Kern Water Agency
AVSWCA	Antelope Valley State Water Contractors Association
AWWA	American Water Works Association
BMPs	Best Management Practices
CBDA	California Bay-Delta Authority
CUWCC	California Urban Water Conservation Council
CWC	California Water Code
CWAC	California Water Awareness Campaign
Delta	Sacramento-San Joaquin Delta Estuary
DHS	Department of Health Services
District	Palmdale Water District
DMMs	Demand Management Measures
DWR	Department of Water Resources
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
ETo	Evapotranspiration
GPCD	Gallons Per Capita Daily
GPC	Gallons Per Flush
GPM	Gallons Per Minute
HET	High Efficiency Toilet
IA	Irrigable Area
LACSD	Los Angeles County Sanitation Districts
LCID	Littlerock Creek Irrigation District
LF	Landscape Factor
MCL	Maximum Concentration Level
MFR	Multi-Family Residential
MG	Million Gallons
MGD	Million Gallon Per Day
MOU	Memorandum of Understanding
MWC	Mutual Water Company
NRW	Nonrevenue Water
PCAs	Potential Contaminating Activities
SB7X7	Senate Bill SB7x7
SFR	Single-Family Residential
SCAG	Southern California Association of Governments
SWAP	Source Water Assessment Program
SWP	State Water Project
SWRCB	State Water Resources Control Board
SWRP	Strategic Water Resources Plan
TDS	Total Dissolved Solids
ULFT	Ultra-Low-Flush Toilet
UWMP	Urban Water Management Plan
UWMPA	Urban Water Management Act
WPFP	Water Project Facilities Planning
WRP	Water Reclamation Plant
WTP	Water Treatment Plant

Section 1
Plan Preparation









Section 1 Plan Preparation

1.1 Background/Purpose

This 2010 Urban Water Management Plan (UWMP) prepared by the Palmdale Water District (District) describes and evaluates demand projections, sources of water supply, reliability, efficiency, demand management measures, and other information about various programs.

The purpose of the UWMP is to maintain efficient use of urban water supplies, continue to promote conservation programs and policies, ensure that sufficient water supplies are available for future beneficial uses, and provide a mechanism for response during water drought conditions. This report, which was prepared in compliance with the California Water Code as set forth in the guidelines and format established by the California Department of Water Resources (DWR), constitutes the District's 2010 UWMP.

1.2 Urban Water Management Planning Act

In 1983, State Assembly Bill 797 modified the California Water Code Division 6, by creating the Urban Water Management Planning Act (UWMPA). The UWMPA requires urban water suppliers servicing 3,000 or more connections, or supplying more than 3,000 acre-feet (AF) of water annually, to prepare an UWMP. The plans must be filed with DWR every five years. The deadline for adoption of the 2010 plan is July 1, 2011, after which the agency has 30 days to submit the UWMP to DWR.

Since 1983, many amendments have been added to the UWMPA, the most recent occurred in 2009 and increased the data requirements and planning elements to be included in the 2010 UWMPs. This recent change was Senate Bill 7x7 (SB7x7), or the Water Conservation Act of 2009, which required urban water suppliers to reduce the statewide average per capita daily water consumption by 20 percent by December 31, 2020. These amendments require additional actions to be addressed during UWMP preparation and consideration of such issues as metering, drought contingency planning, and water recycling:

- ***SB7x7***: This bill requires all water suppliers to increase water use efficiency. The goal of SB7x7 is to achieve a 20 percent reduction in statewide urban per capita water use by December 31, 2020. This bill also establishes an incremental goal of reducing per capita water use by 10 percent by December 31, 2015.
- ***AB1420***: This bill requires urban water suppliers to implement water Demand Management Measures (DMMs) described in Water Code section 10631(f) to be eligible for any water management grants or loans awarded or administered by DWR, State Water Resources Control Board (SWRCB), or California Bay-Delta Authority (CBDA) or its successor agency (collectively referred to as "Funding Agencies"). The DMMs correspond to the 14 Best Management Practices (BMPs) listed and described in the California Urban Water Conservation Council (CUWCC) Memorandum of Understanding (MOU). This bill is in effect until July 1, 2016 unless another statute is enacted.
- ***AB1465***: This bill deems water suppliers that are members of the CUWCC and comply with the MOU regarding urban water conservation in California, dated December 10, 2008, to be in compliance with the requirement to describe the supplier's water DMMs in its UWMP.
- ***SB1087***: This bill requires UWMPs to include projected water use for single family and multi-family housing needed for lower-income households.
- ***AB1376***: This bill requires water suppliers to provide at least 60 days notification to any city or county within which the supplier provides water for the UWMP public hearing.
- ***SB407***: This bill requires multi-family and commercial properties to replace non-compliant plumbing with water conservation fixtures during building improvements or alteration. All single

family homes, multi-family, and commercial building must have non-compliant plumbing fixtures replaced by 2017.

A copy of the UWMPA is included in Appendix A. DWR has provided detailed background information to guide water districts in developing 2010 UWMPs. Appendix B includes a copy of DWR's 2010 checklist for preparing an UWMP in compliance with the California Water Code. Additional information can be found on DWR's website (http://www.water.ca.gov/). The District followed the DWR guidelines and checklist in the development of this UWMP.

1.3 Agency Coordination and Public Participation

The UWMPA requires that the water agency identify its coordination with appropriate nearby agencies. The District's 2010 UWMP is intended to address those aspects of the UWMPA which are under the control of the District, specifically water supply and water use. While preparing the 2010 UWMP, the District coordinated its efforts with relevant agencies to ensure data and issues are presented accurately. Table 1-1 lists each agency and organization contacted or involved in the preparation, discussion, or coordination of the 2010 UWMP.

Table 1-1: Coordination with Appropriate Agencies

Coordinating Agencies	Participated in developing the plan	Commented on the draft	Attended public meetings	Contacted for assistance	Made copy of draft UWMP available	Sent notice of intention to adopt
City of Palmdale	x	x		x	x	x
Los Angeles County Department of Regional Planning				x	x	x
Littlerock Creek Irrigation District				x	x	x
Los Angeles County Waterworks District	x		x	x	x	x
Los Angeles County Sanitation Districts	x	x		x	x	x
Antelope Valley- East Kern Water Agency	x			x	x	x
Quartz Hill Water District	x			x	x	x
Rosamond Community Services Districts	x			x	x	x
Los Angeles County Farm Bureau					x	x
Los Angeles World Airports					x	x

1.4 Plan Adoption, Submittal, and Implementation

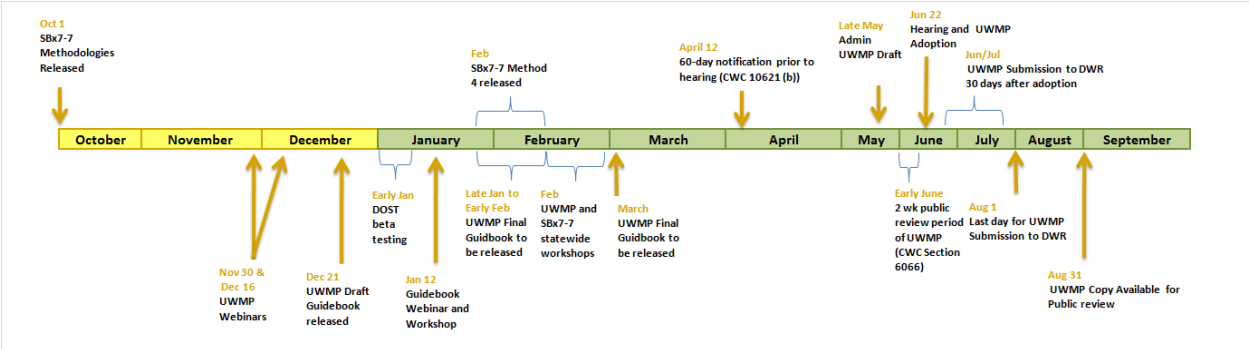
A Notice of Preparation for the 2010 UWMP Update was prepared and sent to the City of Palmdale within the District's water supply boundary 60 days prior to the public hearing in accordance with the California Water Code (CWC) 10621 (b). A copy of the Notice of Preparation is included in Appendix C.

The UWMPA requires that the UWMP demonstrate that the water agency solicited public participation. Copies of the draft Plan were made available for public review on the District's website, at the District's front office, and at the local public library for two weeks prior to the required public hearing. In accordance with the UWMPA, the District then held a public hearing and adopted the 2010 UWMP on June 22, 2011 at 7 pm at the Palmdale Water District Boardroom at 2029 East Avenue Q, Palmdale. A copy of the public hearing notice posted in the Antelope Valley Press is included in Appendix D. A copy of the UWMP adoption resolution is included in Appendix E.

The UWMP was then submitted to DWR within 30 days of adoption. Copies of the final Plan were also made available for public review on the District's website, at the District's front office, and at the local public library. Figure 1-1 shows the key dates for preparation of the District's UWMP.

The District will implement this UWMP, including the Water Use Reduction Plan outlined in Section 3.4, in accordance with the requirements established in the UWMPA of 1983, as amended, and the Water Conservation Act of 2009.

Figure 1-1: UWMP Key Dates



Section 2
System Description









Section 2 System Description

2.1 Service Area Physical Description

The District was established in 1918 as the Palmdale Irrigation District. The primary function of the District is to provide retail water service to the central and southern portions of the City of Palmdale and adjacent unincorporated areas of Los Angeles County. Under the provisions of the California Water Code relating to the establishment of irrigation districts, the District has the power to carry out any act to provide sufficient water for present and future beneficial uses, including construction and operation of facilities to store, regulate, divert and distribute water for use within its boundaries. A Board of Directors, elected at large, with one representative from each of the five divisions, governs the District.

The District acts as a retailer of water supplies for municipal, residential, irrigation, commercial, industrial, and institutional users. There are no agricultural deliveries made within the District's service area boundaries.

2.1.1 History

The District evolved from several private water companies. The first water agency, the Palmdale Irrigation Company, was established in 1886 to acquire land and water, and then rent, lease, and sell both as they were developed. As a means of providing water for these purposes, they constructed a six and a half mile irrigation ditch to divert water from nearby Littlerock Creek to Palmdale.

Not long after, it became apparent that water storage facilities were needed. In 1895, the South Antelope Valley Irrigation Company constructed an earthen dam forming Harold Reservoir and known today as Palmdale Lake. To connect the water from Littlerock Creek to Harold Reservoir, they constructed another earthen ditch, including a flume and wooden trestle, parallel to the ditch being used by the Palmdale Irrigation Company.

By the early 1900s, it was decided that one or more dams on Littlerock Creek were necessary. By this time, the Palmdale Water Company and Littlerock Creek Irrigation District had acquired the facilities of earlier water companies. Together, they studied the costs and options for constructing one or more dams on Littlerock Creek.

It was determined that forming a public irrigation district was the best way to finance this construction. The Palmdale Irrigation District was then formed in 1918 by a vote of the public. It maintained a service area of about 4,500 acres and acquired the added facilities of the Palmdale Water Company.

Until the 1950s, the area within Palmdale Irrigation District's boundaries was primarily agricultural. However, with the activation of Air Force Plant 42 and the increased use of Edwards Air Force Base, agricultural water use diminished. As populations grew within the valley, the shift to domestic water began.

In 1963, the Palmdale Irrigation District entered into an agreement to purchase water from the newly planned State Water Project (whose conveyance facilities are known as the California Aqueduct). This agreement guaranteed the District would have sufficient imported source water to supply projected population growth well into its future.

To contain the increased water supply, bonds were sold to rebuild and expand Palmdale Lake (formerly known as Harold Reservoir) to an increased capacity of over 4,100 AF. This bond financing also allowed the construction of a new treatment facility adjacent to the Lake. As a result, this new water supply enabled the Palmdale Irrigation District to service a broader area of Palmdale.

It was decided in 1973 that the Palmdale Irrigation District name should be changed to the more appropriate Palmdale Water District. Founded as an irrigation district supplying water mainly to farms for agricultural use, the District's boundaries had expanded with Palmdale's rapid population growth and the District shifted to providing predominantly municipal and industrial water supply.

For the last ten years, the District continued to improve and add to its water distribution and storage facilities. The District's primary service area now covers approximately 46 square miles (29,440 acres) versus 4,500 acres in 1918. The distribution system encompasses approximately 400 miles of pipeline, multiple well sites, booster pumping stations, and water storage tanks maintaining a total storage capacity of over 50 million gallons (mg).

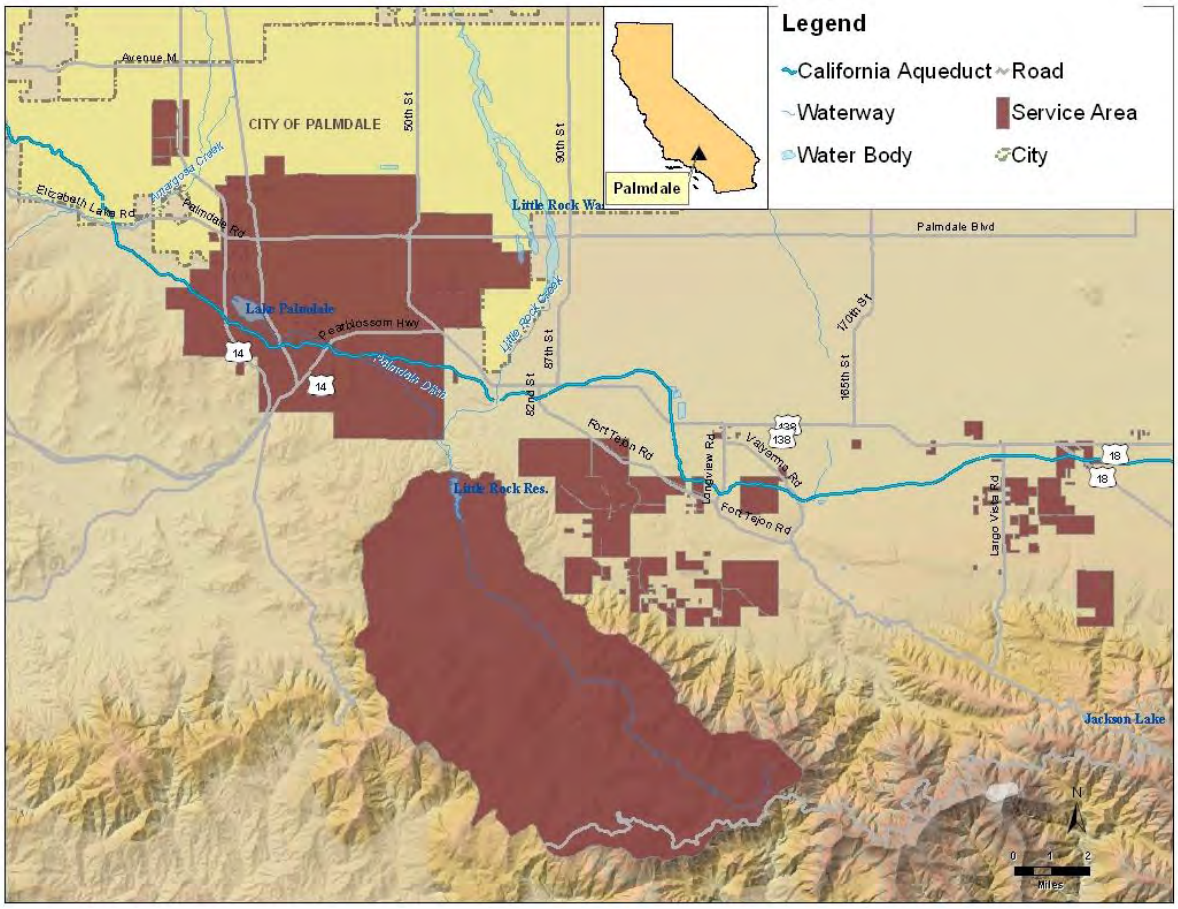
2.2 Location

The District is located within the Antelope Valley in Los Angeles County, approximately 60 miles north of the City of Los Angeles and 50 miles west of the City of Victorville as shown in Figure 2-1.The District's primary service area includes the central and southern portions of the City of Palmdale and adjacent unincorporated areas of Los Angeles County. The City's nearest neighbor, Lancaster, is approximately 10 miles to the north. The Antelope Valley Freeway (State Freeway 14) runs north-south and Pearblossom Highway (State Highway 138) meanders in the east-west direction through the District.

The lands in the area presently served by the District slope gently upward to the foot of the northeast-facing slopes of the San Gabriel Mountains. Elevations range from approximately 2,600 feet to 3,800 feet above sea level.

The entire District encompasses an area of approximately 140 square miles overlying more than thirty non-contiguous areas scattered throughout the southern Antelope Valley as shown in Figure 2-1. In addition to the primary service area, there is a federal land area of approximately 65 square miles upstream of Littlerock Dam in the Angeles National Forest.

Figure 2-1: District Location and Service Area Boundary (Including Satellite Areas)



2.3 Climate

Wide temperature fluctuations, hot summers, cold winters, strong winds, low humidity and scant rainfall characterize the climate in the District service area. Temperatures in the summer months vary between an average low of 71 degrees Fahrenheit (F) and an average high of 95 degrees F. In the winter months, the average temperature extremes vary from 30 to 58 degrees F, respectively. Most of the precipitation occurs during the winter and spring months. Average annual precipitation is 6.7 inches in the northerly portion of the District (District Weather Station 197) and 12 inches in the southerly San Gabriel Mountain area[1]. Table 2-1 shows the average, monthly evapotranspiration (ETo), rainfall, and temperature data for the District.

[1] Draft Water Master Plan Update, Palmdale Water District, 2006
[2] California Water Plan Update, Department of Water Resources, 2009

Table 2-1: Climate Characteristics

	Average ETo (in.)	Average Rainfall (in.)	Average Max Temperature (°F)	Average Min Temperature (°F)
January	2.02	1.52	58.3	32.4
February	2.61	1.65	62.1	35.6
March	4.55	1.28	67.2	39.0
April	6.19	0.46	73.9	43.7
May	7.30	0.13	81.7	50.6
June	8.85	0.04	90.1	57.7
July	9.77	0.05	97.5	64.9
August	8.99	0.18	96.9	63.7
September	6.52	0.20	91.3	57.4
October	4.66	0.32	80.3	48.0
November	2.68	0.68	67.1	37.9
December	2.05	1.39	58.7	32.6
Annual	**66.19**	**7.90**	**77.1**	**47.0**

Source:
DWR California Irrigation Management Information System (CIMIS) Website, from Palmdale #197 station;
National Oceanic and Atmospheric Administration (NOAA) Western Regional Climate Center Website, Palmdale Station

2.3.1 Effects of Climate Change

In the 2009 update of DWR's California Water Plan[2], an assessment of the impacts of global warming on the State's water supply was conducted using a series of computer models that were based on decades of scientific research. Model results indicate that climate change will result in increased temperature, reduction in Sierra snow depth, early snow melt, and a rise in sea level. These changing hydrological conditions could affect future planning efforts which are typically based on historic conditions. Difficulties that may arise include:

- Hydrological conditions, variability, and extremes that are different than those that current water systems were designed to manage
- Climate changes occurring too rapidly to allow sufficient time and information to permit managers to respond appropriately

[2] California Water Plan Update, Department of Water Resources, 2009

- The need for special efforts or plans to protect against unexpected events and uncertainties.

As such, DWR will continue to provide updated results from these models as further research is conducted.

2.4 Current and Projected Service Area Population

Since the District's primary service area boundary does not coincide with the City boundary, population studies prepared by the City cannot be used directly to estimate the population served by the District. The District's projected population through 2035 is based on the District's Strategic Water Resources Plan (SWRP) which used Southern California Association of Governments (SCAG) data[3]. It is estimated that the population within the District will reach approximately 164,312 by 2015 and 280,206 by 2035. Table 2-2 indicates the current and projected future population for the District service area.

The District population increased from 14,400 in 1960 to approximately 29,000 in 1985 and to about 84,546 in 1995[4]. As a result of this substantial growth from 1965 to 1985, water production grew from 4,100 acre feet per year to over 8,000 acre feet per year and more than doubled in the subsequent five years[5]. The population of the District service area has increased to approximately 109,395, in 2010, with most living in the City of Palmdale.

Table 2-2: Population-Current and Projected

	2010	2015	2020	2025	2030	2035
Service Area Population	109,395	164,312	195,404	225,208	253,791	280,206
Source: Strategic Water Resources Plan, Palmdale Water District, 2009						

[3] Strategic Water Resources Plan, Palmdale Water District, 2010
[4] Urban Water Management Plan, Palmdale Water District, 2005
[5] Urban Water Management Plan, Palmdale Water District, 2005

Section 3
System Demands









Section 3 System Demands

3.1 Overview of Water Use

The District's service area customers include municipal, residential, irrigation, commercial, industrial, and institutional users. The District has meters on all residential, commercial and landscape service connections in the service area and requires meters on all new connections. The District provides potable water service to its residential, commercial, industrial, and institutional customers within its service area, and serves supplemental water to several customers outside its primary service area in accordance with agreements made with the Antelope Valley East Kern Water Agency (AVEK).

Historically, the District has obtained water from local surface and groundwater sources. California State Water Project (SWP) deliveries to the District began in 1985. Since then, approximately 40 to 50 percent of potable water deliveries consist of groundwater; the balance of demand is supplied from surface water (both local and imported). The highest annual water use was experienced in 2007 at a total of 28,151 AF. The District plans to meet approximately 60 percent of its projected average demand from surface water sources and approximately 40 percent from groundwater sources.

3.2 Water Demands

The District primarily delivers potable water to municipal, residential, irrigation, commercial, industrial, and institutional groups within its service area. Table 3-1 provides a summary of the service area water use demands that will be met by District supplies.

Table 3-1: District Demand Projections of Total Deliveries (AF)

Water Use	2005	2010	2015	2020	2025	2030	2035
Water Deliveries in Service Area	23,643	19,800	35,000	40,000	45,000	55,000	60,000
Total	**23,643**	**19,800**	**35,000**	**40,000**	**45,000**	**55,000**	**60,000**
Note: Demand projections include conservation measures listed in Section 3.4							

3.2.1 Sales to Other Water Agencies

The District and the Littlerock Creek Irrigation District (LCID) jointly hold long-standing water rights to divert 5,500 AF per year from Littlerock Creek. The District manages Littlerock Dam Reservoir. LCID is entitled to purchase from the District, in one calendar year, up to 1,000 AF of water or 25 percent of the yield from Littlerock Dam Reservoir, whichever is less. Table 3-2 shows the historical, current and projected sales for LCID from the District. For further details on the District's and LCID's joint surface water rights from Littlerock Dam Reservoir, see Section 4.3.1.

Table 3-2: Historic, Present and Projected Sales to LCID (AF)

Water Distributed	2005	2010[1]	2015	2020	2025	2030	2035
Littlerock Creek Irrigation District	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**
Source: 1. CUWCC Reporting Questions for 2010, Palmdale Water District, 2010							

3.2.2 Actual and Projected Water Deliveries

The historical, current and projected annual water use for the District is shown in Table 3-3 through

Table 3-9**.** These tables show water use projections from 2005 to 2035 for each category. The water demand projections were obtained from the District's 2009 Strategic Water Resources Plan (SWRP) demand projections. These demand projections are based on population projections and expected land use build-out. However, due to the recent economic downturn, there has been lower-than-expected growth in 2009-2010. The District estimates that the reduced growth will delay the previous demand projections by 5 years, resulting in a decrease of approximately 5,000 AF for each of the years between 2015 and 2035. Table 3-10 presents a summary of the District's total water demands.

Table 3-3: Actual Total Water Deliveries for 2005

	2005				
	Metered		Not metered		Total
Water Use Sectors	# of accounts	Volume (AF)	# of accounts	Volume (AF)	Volume (AF)
Single family	23,147	19,276	0	0	19,276
Multi-family	495	2,209	0	0	2,209
Commercial	619	1,178	0	0	1,178
Industrial	32	94	0	0	94
Institutional/governmental	87	454	0	0	454
Landscape	1,276	371	0	0	371
Agriculture	0	0	0	0	0
Other	9	61	0	0	61
Total	**25,665**	**23,643**	**0**	**0**	**23,643**

Table 3-4: Actual Total Water Deliveries for 2010

	2010				
	Metered		Not metered		Total
Water Use Sectors	# of accounts	Volume (AF)	# of accounts	Volume (AF)	Volume (AF)
Single family	24,396	15,766	0	0	15,766
Multi-family	562	1,689	0	0	1,689
Commercial	526	963	0	0	963
Industrial	14	40	0	0	40
Institutional/governmental	130	278	0	0	278
Landscape	392	950	0	0	950
Agriculture	0	0	0	0	0
Other	21	114	0	0	114
Total	**26,041**	**19,800**	**0**	**0**	**19,800**
Source: CUWCC Reporting Questions for 2010, Palmdale Water District, 2010					

Table 3-5: Projected Total Water Deliveries for 2015

	2015				
	Metered		Not metered		Total
Water Use Sectors	# of accounts	Volume (AF)	# of accounts	Volume (AF)	Volume (AF)
Single family	43,111	27,860	0	0	27,860
Multi-family	990	2,975	0	0	2,975
Commercial	1,001	1,715	0	0	1,715
Industrial	25	70	0	0	70
Institutional/governmental	229	490	0	0	490
Landscape	693	1,680	0	0	1,680
Agriculture	0	0	0	0	0
Other	39	210	0	0	210
Total	**46,087**	**35,000**	**0**	**0**	**35,000**

Table 3-6: Projected Total Water Deliveries for 2020

	2020				
	Metered		Not metered		Total
Water Use Sectors	# of accounts	Volume (AF)	# of accounts	Volume (AF)	Volume (AF)
Single family	49,270	31,840	0	0	31,840
Multi-family	1,131	3,400	0	0	3,400
Commercial	1,144	1,960	0	0	1,960
Industrial	28	80	0	0	80
Institutional/governmental	262	560	0	0	560
Landscape	792	1,920	0	0	1,920
Agriculture	0	0	0	0	0
Other	44	240	0	0	240
Total	**52,671**	**40,000**	**0**	**0**	**40,000**

Table 3-7: Projected Total Water Deliveries for 2025

	2025				
	Metered		Not metered		Total
Water Use Sectors	# of accounts	Volume (AF)	# of accounts	Volume (AF)	Volume (AF)
Single family	55,428	35,820	0	0	35,820
Multi-family	1,273	3,825	0	0	3,825
Commercial	1,287	2,205	0	0	2,205
Industrial	32	90	0	0	90
Institutional/governmental	295	630	0	0	630
Landscape	891	2,160	0	0	2,160
Agriculture	0	0	0	0	0
Other	50	270	0	0	270
Total	**59,255**	**45,000**	**0**	**0**	**45,000**

Table 3-8: Projected Total Water Deliveries for 2030

	2030				
	Metered		Not metered		Total
Water Use Sectors	# of accounts	Volume (AF)	# of accounts	Volume (AF)	Volume (AF)
Single family	67,746	43,780	0	0	43,780
Multi-family	1,556	4,675	0	0	4,675
Commercial	1,573	2,695	0	0	2,695
Industrial	39	110	0	0	110
Institutional/governmental	360	770	0	0	770
Landscape	1,089	2,640	0	0	2,640
Agriculture	0	0	0	0	0
Other	61	330	0	0	330
Total	**72,423**	**55,000**	**0**	**0**	**55,000**

Table 3-9: Projected Total Water Deliveries for 2035

	2035				
	Metered		Not metered		Total
Water Use Sectors	# of accounts	Volume (AF)	# of accounts	Volume (AF)	Volume (AF)
Single family	73,904	47,760	0	0	47,760
Multi-family	1,697	5,100	0	0	5,100
Commercial	1,716	2,940	0	0	2,940
Industrial	42	120	0	0	120
Institutional/governmental	393	840	0	0	840
Landscape	1,188	2,880	0	0	2,880
Agriculture	0	0	0	0	0
Other	66	360	0	0	360
Total	**79,007**	**60,000**	**0**	**0**	**60,000**

Table 3-10: Total Water Use (AF)

Water Use	2005	2010	2015	2020	2025	2030	2035
Total water deliveries	23,643	19,800	35,000	40,000	45,000	55,000	60,000
Sales to other water agencies	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Additional water uses and losses	0	0	0	0	0	0	0
Total	**23,643**	**19,800**	**35,000**	**40,000**	**45,000**	**55,000**	**60,000**

3.2.3 Estimated Demands for Lower-Income Housing

Section 10631.1 of the California Water Code requires 2010 UWMPs to include the projected water use for lower income single-family and multi-family residential households as identified in the housing element of the water purveyor's service area. The projections are intended to assist the District in complying with the requirements of the Government Code Section 65589.7, which requires water purveyors to "grant a priority for the provision of water and sewer services to proposed developments that include housing units affordable to lower income households."

The estimated projected water demands for low-income residential households in the District's service area are shown in Table 3-11. The calculation steps for the lower-income housing demand projections are described below.

Steps Used to Determine Low-Income Housing Demand Projections:

1. *Determine income of "low income household"* - The state defines "low income households" as households with incomes that equal 80 percent of the median state income or lower. Using the median state income of $41,994 for year 2000, a low-income household inside the District service area was determined to have an income of $33,595 or less.
2. *State assumptions used in calculations* - It is assumed that the percentage of area below the 80 percent median household income will remain constant between 2000 and 2035. It was also assumed that the water demands for low income households are proportional to the census tract area occupied by those households.
3. *Determine area occupied by low-income households in District service area* - The total surface area for the median households in year 2000 with incomes of $33,595 or less was determined to be approximately 10 square miles. This area was calculated by using a Geographic Information

Systems (GIS) shapefile to define the low-income census tracts for year 2000 inside the District service area.

4. *Determine the percentage of the District service area occupied by low-income households* - The total area of the low-income housing census blocks was then divided by the total area of the District's primary service area (46 square miles) to calculate the percentage of area with incomes of $33,595 or less. The percentage is 22 percent.
5. *Use the calculated percentage to estimate water demands for low-income areas* - Total demand projections for the District service area (from Tables 3-3 through 3-9) are multiplied by 22 percent to estimate the water demand projections.

The demand projections are shown below in Table 3-11.

Table 3-11: Low-Income Projected Water Demands (AF)

	2015	2020	2025	2030	2035
Low Income Water Demands	7,700	8,800	9,900	12,100	13,200
Total	**7,700**	**8,800**	**9,900**	**12,100**	**13,200**
Note: All numbers are rounded to the nearest 100 AF					

The water demand projections for low-income households are included in the District's total demand projections in Table 3-3 through Table 3-9 above.

3.3 Baseline and Targets

Base Daily Water Use

The District used the step-by-step process defined in the DWR Guidebook[6] to determine the base daily water use. That process and the resulting calculations are described in this section.

Step 1: Determine Supplier Base Period Year Ranges

DWR requires urban water suppliers to calculate a 10- to 15-year baseline and a 5-year baseline for use in establishing water use targets. Retail delivery of at least 10 percent recycled water in year 2008 allows a water purveyor the option of using the 15-year continuous base period. The District currently does not deliver recycled water; therefore a 10-year range was used to calculate the baseline, as shown in Table 3-12. The 5-year baseline is used to calculate the maximum required water use reduction target.

Table 3-12 shows the allowed 10- and 5-year baseline periods, starting in 1995 and 2003, respectively. It also shows the parameters measured and the values and units for each parameter. The intent of this table is to show the base period ranges that were selected by the District to calculate the gpcd baseline and water use targets for 2015 and 2020.

[6] Guidebook to Assist Urban Water Supplies to Prepare a 2010 Urban Water Management Plan, Department of Water Resources, 2011

Table 3-12: Base Period Ranges

Base	Parameter	Value	Units
10- year base period	2008 total water deliveries	42,657	AF
	2008 total volume of delivered recycled water	0	AF
	2008 recycled water as a percent of total deliveries	0	%
	Number of years in base period	10	YR
	Year beginning base period range	1995	
	Year ending base period range	2004	
5-year base period	Number of years in base period	5	YR
	Year beginning base period range	2003	
	Year ending base period range	2007	

Step 2: Estimate Distribution System Area and Population

The District's distribution service area does not overlap substantially (i.e., ≥ 95 percent) with city boundaries; therefore the historic service area population was determined in two ways: 1) Population from 1990 to 1999 were obtained from the 2005 UWMP and the 2009 SWRP and 2) Population from 2000 to 2010 was determined using DWR's Methodologies for calculating Baseline and Compliance Urban Per Capita Water Use, Appendix A.

The steps from DWR's Appendix A are listed below:

1. Locate the census blocks in the 2000 District distribution area using Census Bureau Web site data.
2. Determine the population by structure type (i.e., single-family and multi-family housing).
3. Utilize active connections data from 2010 to determine percentage of active connections for single-family and multi-family homes. The calculated percentages were 93.7 percent for single-family and 6.3 percent for multi-family[7].
4. Multiply the single-family and multi-family percentages by the total number of connections for each year to determine the single-family and multi-family connection breakdown for the years 2000 through 2010.
5. Using the 2000 population Census Bureau data and the total active connections for the year 2000, ratios were calculated to estimate the population for non-census years. These ratios are:
    - single-family ratio = 3.78 people per connection
    - multi-family ratio = 10.46 people per connection
6. These ratios were applied to each year's single-family and multi-family total active connections and populations were determined for each type of housing for years 2000 to 2010.

Step 3: Calculate Gross Water Use

The gross water use for the District was calculated using DWR's Methodology 1 which includes the steps listed below for the years used to calculate the base daily per capita water use.

1. Define the 12-month calculation period: The 12-month calculation period used was based on the calendar year.

[7] Note: Multi-family includes commercial, industrial, institutional, dedicated irrigation, recycled water, LCID, and other water uses.

2. Delineate the distribution system boundary: The distribution system boundary was determined based on a GIS shapefile for the District service area, provided by the District.
3. Compile water volume from own sources: The District's own sources of water entering the distribution system include groundwater and local surface water (Littlerock Creek). These volumes were compiled into annual totals based on calendar year.
4. Compile imported water volume: Water imported into the distribution system was tabulated annually based on calendar year.
5. Compile exported water volume: This step does not apply as there were no water exports that passed through the distribution system.
6. Calculate net change in distribution system storage: The data needed to calculate the change in distribution system storage was not available and is not relevant to the District's gross water use.
7. Calculate gross water use before indirect recycled water use deductions: The gross water use was calculated as the sum of water volumes determined in Step 3 and Step 4.
8. Deduct recycled water used for indirect potable reuse from gross water use: The District does not use recycled water for indirect potable reuse at this time.
9. Calculate gross water use after deducting indirect water use: Subtract the volume determined in Step 8 from the volume in Step 7.
10. Deduct from gross water use the volume of water delivered for agricultural use: Not applicable.
11. Deduct volume of water delivered for process use: Not applicable.
12. Calculate gross water use after optional deductions: Subtract the volumes determined from Steps 10 and 11 from Step 9.

Step 4: Calculate Base per Capita Demand

Annual per capita water use was determined by dividing the actual potable water produced for the District by the service area population numbers that were determined in Step 3 for the base year range. A final base gross water use is calculated by taking the average per capita use for all years within the selected 10-year range (as shown in Table 3-13).

The 5-year base range was used to calculate the average gross water use in more recent years to determine whether the District is under the 100 gallons per capita daily (gpcd) threshold. If the 5-year base per capita use is less than 100 gpcd, then there is no maximum required target. The District's 5-year base per capita water use is greater than 100 gpcd, therefore a per capita target is required and is set as described in Table 3-13.

Table 3-13: Base Daily per Capita Water Use

Sequence Year	Calendar Year	Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
1995	1995	84,546	17.9	212.2
1996	1996	84,546	19.3	229.5
1997	1997	84,174	19.0	226.0
1998	1998	84,813	17.0	200.9
1999	1999	87,042	20.1	230.9
2000	2000	94,913	21.1	222.5
2001	2001	96,462	21.1	218.8
2002	2002	97,922	21.5	219.5

Sequence Year	Calendar Year	Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
2003	2003	98,529	21.6	219.6
2004	2004	101,457	22.3	220.2
	10-Year Base Daily Per Capita Water Use			**220**
2003	2003	98,529	21.6	219.6
2004	2004	101,457	22.3	220.2
2005	2005	104,623	22.2	212.1
2006	2006	107,876	23.2	215.5
2007	2007	110,693	23.6	213.3
	5-Year Base Daily Per Capita Water Use			**216**

3.3.1 Water Use Targets

The water use targets were calculated by first selecting which of the four allowable target calculation methods would be used. The available methods are:

- Method 1: 80 percent of ten-year baseline per capita use
- Method 2: Per capita daily water use estimated using the sum of performance standards applied to indoor residential use; landscaped area water use; and commercial, industrial, and institutional (CII) uses
- Method 3: 95 percent of the DWR South Lahontan Region target of 170 gpcd
- Method 4: DWR Provisional Method 4 BMP Calculator

These methods were applied to the 10-year base per capita water use calculated in Table 3-13 to determine a target per capita water use level for 2020. Once this target was determined, it was confirmed by comparing it against DWR's maximum allowable target. The maximum allowable target is equivalent to 95 percent of the District's 5-year base per capita use, 205 gpcd. If the 2020 calculated target is greater than the maximum allowable target, then the maximum allowable target must be used instead of the calculated 10-year base target.

Table 3-14 provides the final per capita target as well as the overall targets for the District. Method 1 was chosen to calculate the District's 2020 water use target. Since the 2020 target is less than the maximum allowable target described above, no adjustment is necessary. The interim target is calculated by using the median between the 10-year base per capita use and the final 2020 target.

The 2020 calculated target for the District is 176 gpcd; the interim 2015 target is 198 gpcd.

Table 3-14: 2015 Interim and 2020 Target (GPCD)

10-Year Base Water Use (gpcd)	10-Year Base Water Use		Maximum Allowable Target (gpcd)	Final Targets (gpcd)	
	Method	Target (gpcd)		2015	2020
220	1	176	205	198	176

3.4 Water Use Reduction Plan

The District currently has a water conservation program and will continue to expand this program over the next five years. The District is dedicated to water conservation as a vital part of its water supply portfolio. The District has implemented water conservation programs over the last few decades, including

classroom education programs, public outreach, and various rebate programs. The District will continue to provide these programs as part of their conservation efforts on a yearly basis.

This section describes the District's plan to achieve the water use reductions necessary to meet the per capita water use targets, consistent with the Water Conservation Act of 2009. The urban water use targets calculations are described in Section 3.3. The interim 2015 target is 198 gpcd and the 2020 target is 176 gpcd. Using the 2010 population number of 109,395 and the 2010 consumption value of 19,800 AF, the actual usage in 2010 is calculated to be 149.1 gpcd; therefore the District is currently meeting its 2020 target. Despite this, the District plans to continue implementing water conservation programs to ensure that the targets continue to be met, as described in this section and in Section 4.5 below.

Education

The District has school education programs in place that provide educational materials and instructional assistance. This program is intended to reach the youngest water users and enforce the need to engage them in water conservation.

The District's education school program includes:

- School tours to the District's treatment plant and Littlerock Dam
- Staff presentations on conservation and the environment
- District sponsored contests for kindergarten through high school
- Distribution of water education brochures, booklets, and handouts for teachers and students

The District plans on continuing and expanding their education school programs as part of their plan to meet their 2020 target. For more details on the District's school education programs, see Section 6.1.8.

Public Outreach

The District distributes information to its water service customers through a variety of methods which include public events, presentations, brochures, and the District website. Through continued public outreach the District encourages water conservation and sustainable water use. For more details on the District's public outreach efforts, see Section 6.1.7.

The District's public outreach program includes:

- Public Events: The District actively participates in various community functions and in the California Water Awareness Campaign (CWAC) to expand public awareness on the importance of water conservation.
- Presentations: District staff give presentations via their school education program which includes in-class presentations to teach students about the water cycle, the District's water sources, and the SWP.
- Brochures: The District creates and distributes brochures to its service area customers via the District's public counter, by mail, at public events, and upon request outlining various water conservation information and tips.
- Website: The District's website (www.Palmdalewater.org) is updated regularly with community events and water saving tips for the public.

3.4.1 Rebate Programs

The District started several rebate programs for customers in the later part of 2009. The District began to give customers a rebate as a credit back on their water bill if they filled out an application after buying the rebate product and returning the original receipt and a copy of the water bill to the District. The District implements a number of different rebate programs to encourage water conservation:

- High Efficiency Toilet (HET) Rebate Program: The District started an HET rebate program in 2009 for residential and commercial customers. The rebate amount for this program is a credit on their water bill of $60.00 per toilet installed. If a customer replaces an Ultra-Low-Flush toilet (ULFT) with an HET, the rebate amount will consist of $30.00.
- MP Rotator Rebate Program: The District offers a $4.00 rebate program to install rotator nozzles to its water service customers to further encourage water conservation.
- High Efficiency Washing Machines Rebate Program: The District currently has a washing machine rebate program for its customers who wish to purchase a water efficient washing machine with a water factor of 5.0 or less. The rebate amount for this program is a credit of $100.00 per washer bought on the customer's account.
- Cash for Grass: The District has been working with the City of Palmdale, the local high school, local elementary schools, and residential customers to substitute grass on large landscape areas by implementing the cash for grass program. This program encourages the replacement of grass with "water-smart" landscaping to conserve water.
- Smart Controllers Rebate Program: The District offers a rebate program to District customers to replace their in-ground sprinkler system with a WeatherTRAK smart controller to further encourage water conservation.

3.4.2 Potential Economic Impacts

In 1991, an MOU regarding Urban Water Conservation in California formed the CUWCC. The District signed the MOU on August 14, 2008. Although the MOU was signed, the District was facing economic problems at the time, which resulted in reduced costs and staff furloughs in 2009. The conservation budget was cut drastically in 2008 and 2009, although rebate programs were approved and funded during this same time period. Although economic hardships have caused the District to scale down some of the conservation programs, the various rebate programs for residential, multifamily and commercial customers will continue, including; Cash for Grass, toilet rebates, MP rotator rebates, washing machine rebates, and smart controller rebates.

Section 4
System Supplies









Section 4 System Supplies

The UWMPA requires that the UWMP include a description of the District's existing and future water supply sources for the next 20 years. The description of the District's water supplies includes an overview of the District's supplies, water entitlements, groundwater (including a discussion of adjudication), surface water, imported water, recycled water, desalinated water and alternative new sources[8] of supply.

4.1 Overview of the District's Supplies

The District currently receives water from three sources: Groundwater, Littlerock Dam Reservoir, and imported water from the SWP. Groundwater is obtained from the Antelope Valley Groundwater Basin via 25 active wells[9] scattered throughout the District. The District's local surface water supply is from Littlerock Dam Reservoir. This water is transferred from the reservoir to Lake Palmdale for treatment and distribution. The District's imported water is provided by the SWP and is conveyed to Lake Palmdale which acts as a forebay for the District's 35 million gallon per day (mgd) water treatment plant. Lake Palmdale can store approximately 4,250 AF of SWP and Littlerock Dam Reservoir water.

The District currently does not have recycled water supplies but is in the process of developing the use of non-potable water to offset potable water demand and to diversify its water supply options. Additionally, the District is developing new sources of supply via groundwater banking and anticipated new supplies from transfer and exchange opportunities. Table 4-1 provides a summary of the District's current and planned water supply sources.

Table 4-1: Existing and Planned Sources of Water (AF)[1]

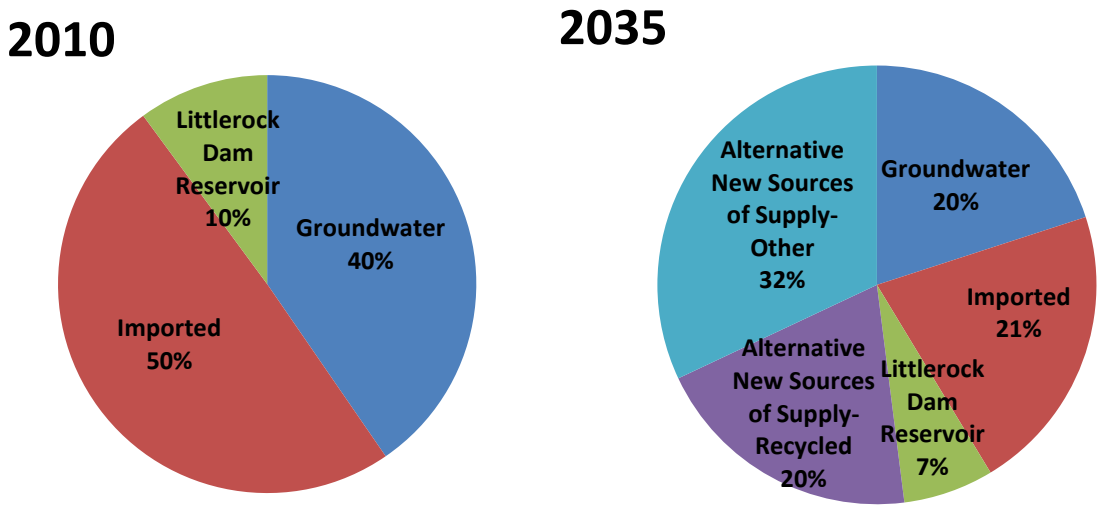
Water Supply Sources	2010	2015	2020	2025	2030	2035
Groundwater[2,3]	8,000	12,000	12,000	12,000	12,000	12,000
SWP[4]	9,800	12,800	12,800	12,800	12,800	12,800
Littlerock Dam Reservoir	2,000	4,000	4,000	4,000	4,000	4,000
Recycled Water	0	1,000	3,000	6,000	9,000	12,000
Groundwater Banking	0	2,600	4,100	5,100	8,600	9,600
Anticipated New Sources[5]	0	2,600	4,100	5,100	8,600	9,600
Total	**19,800**	**35,000**	**40,000**	**45,000**	**55,000**	**60,000**

Notes:
1. All numbers are rounded to the nearest 100 AF
2. Assumes groundwater is available at the existing pumping rate
3. Projected groundwater pumping will consist of native groundwater, imported replenishment, and other banked supplies
4. Projected SWP water delivery at 60 percent of Table A amount available
5. Further information on anticipated new sources can be found in Section 4.7

Figure 4-1 provides a snapshot of the District's water supply portfolio in 2010, which is heavily dependent on imported water from the SWP. This figure also shows the expected portfolio in 2035, which is projected to be diversified with new supply sources.

[8] Alternative new sources: Transfer and Exchange Opportunities
[9] Palmdale Water District "Consumer Confidence Report", 2009

Figure 4-1: Current and Planned Sources of Water Supply



4.1.1 Water Entitlements

The District and LCID currently hold a join diversion right of 5,500 AFY from Littlerock Dam Reservoir. LCID is entitled to purchase from the District, in any one calendar year, 1,000 acre-feet of water or 25 percent of the yield from Littlerock Dam Reservoir, whichever is less (see Section 4.3.1). The District has a SWP Table A maximum annual allocation of 21,300 AF. The District does not currently have a groundwater entitlement as the Antelope Valley Groundwater Basin has not been adjudicated. Table 4-2 summarizes the District's water entitlements.

Table 4-2: District Water Supply Entitlements

Sources	Entitlements - AFY
Groundwater	N/A
Littlerock Dam Reservoir[1,2]	5,500
SWP[3,4]	21,300
Totals	**26,800**

Notes:
1. Full allotment per year from Littlerock Dam Reservoir for the District and LCID
2. Urban Water Management Plan, Palmdale Water District, 2005
3. The District's maximum annual SWP Table A amount
4. State Water Project Delivery Report, Department of Water Resources, 2009

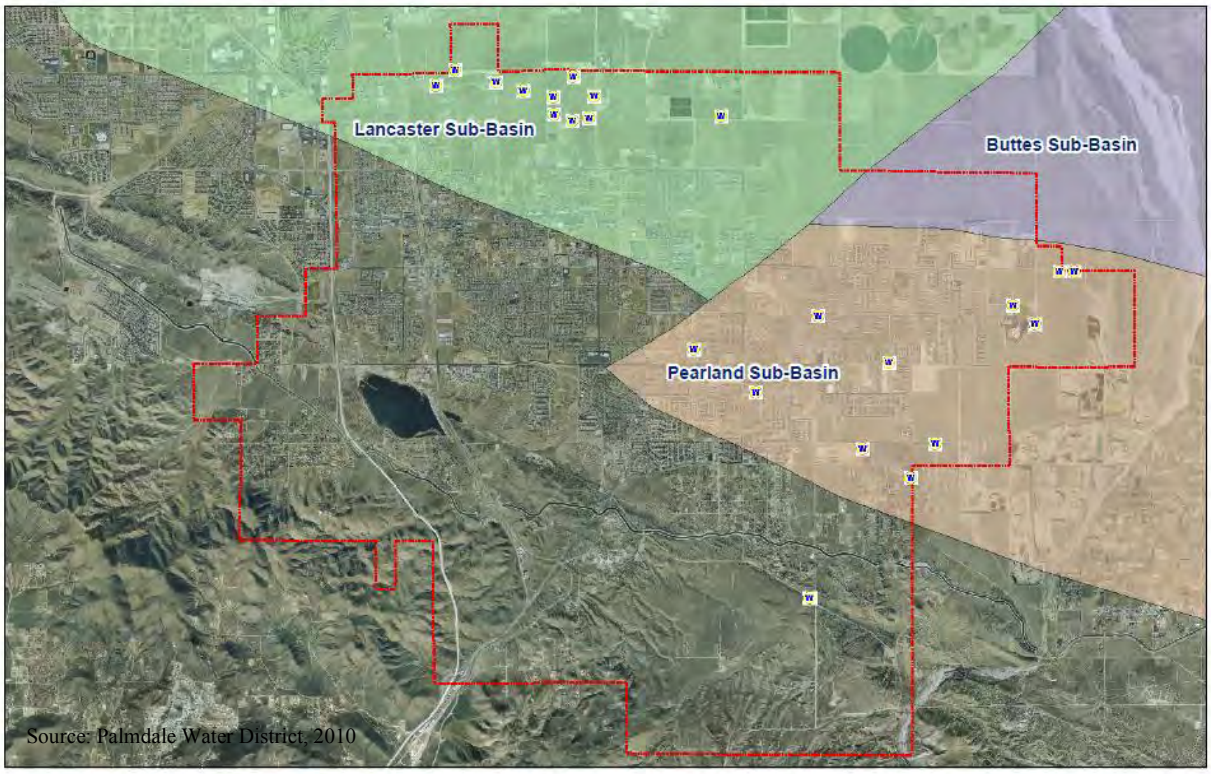
4.2 Groundwater

Groundwater pumping currently makes up a significant proportion of the District's water supply portfolio, accounting for 40 percent of supplies during a normal year. The District's groundwater supply is the Antelope Valley Groundwater Basin where there are 25 active wells currently drawing from the aquifer. This water is treated with chlorine disinfection and pumped directly into the District's potable distribution system. Since 1995, the District has produced on average 10,310 AF of groundwater per year. The availability of groundwater supply for the District does not vary throughout the course of a year.

4.2.1 Groundwater Subbasins

The U.S. Geological Survey has identified a series of subbasins in the Antelope Valley Groundwater Basin. The District overlies the Lancaster, Buttes, and Pearland groundwater subbasins as shown in Figure 4-2. The boundaries between the three subbasins are determined by discontinuity or by steepening of the groundwater surface as measured in wells, rather than by surface evidence of faults. The groundwater transfer from the Pearland and Buttes subbasins to the Lancaster subbasin is slowed across these boundaries. The total amount of water transferred between these three subbasins is unknown[10].

Figure 4-2: District Groundwater Subbasins



Note: This map does not include the San Andreas Rift Zone groundwater bearing areas

Lancaster Subbasin

The Lancaster subbasin is located in the center of the Antelope Valley groundwater basin with its southern-most portions lying within the District service area. It is bounded by bedrock to the south and by the Buttes and Pearland subbasins to the east. Alluvium in this subbasin reaches a thickness of about 1,100 feet in the northern portion of the service area. Two aquifer zones occur in this subbasin. The principal (upper) aquifer is confined and is several hundred feet thick within the District service area. The District operates 12 wells in the Lancaster subbasin, with a pumping capability of approximately 12,500 gpm. This is approximately 75 percent of the District's total annual groundwater production and approximately 30 percent of the District's total water demand.

[10]Palmdale Water District 2005 Urban Water Management Plan

Buttes Subbasin

The Buttes subbasin is located southeast of the Lancaster subbasin. A small portion underlies the District's service area. The District does not currently have any wells or pump water from this subbasin. The aquifer zone consists of approximately 150 feet of saturated alluvial deposits.

Pearland Subbasin

The Pearland subbasin is also located southeast of the Lancaster Subbasin. This subbasin is bounded on the south by bedrock, on the north by a fault separating it from Buttes subbasin and on the West by the basin boundary. The northern most portion of the subbasin lies within the District service area. A single aquifer zone occurs within the Pearland subbasin and consists of approximately 250 feet of saturated alluvial deposits. The District operates 10 wells in the Pearland subbasin, with a pumping capability of 3,500 gpm. This accounts for approximately 20 percent of the District's groundwater production and 10 percent of the District's total water demand.

San Andreas Rift Zone

The San Andreas rift zone has two general groundwater-bearing areas. These areas generally lie east and west of the intersection of Pearblossom Highway and Barrel Springs Road. The area to the east is a narrow valley, with poor groundwater production potential. The area to the west is a broader valley with more extensive groundwater-bearing deposits. The District has four wells in the San Andreas rift zone, two in the western area and 2 in the eastern area. Currently, the District operates three of these wells pumping approximately 150 AF each year. This amount equals approximately two percent of the total annual groundwater production.

The depth to water along the San Andreas rift zone is generally about 25 feet below the ground surface, with a seasonal groundwater level fluctuation of 15 feet. Over the long term, groundwater levels in sediments within the fault zone have remained relatively stable, suggesting that the groundwater-bearing sediments have not been overdrawn.

4.2.2 Adjudication

In late 2004, the County of Los Angeles Water Works District No. 40 filed a civil complaint for the adjudication of all the groundwater rights in the Antelope Valley Groundwater Basin. The District later joined in the adjudication. The adjudication is still pending in Superior Court. Since the adjudication has not yet been completed, each groundwater pumper currently has an unquantified right to pump water for beneficial use. At some future time, however, the court will determine all the water rights in the basin, and will order either the reduction of groundwater extractions to levels that will stabilize or reverse groundwater level declines, or the purchase of imported water to replace over extraction of groundwater, or both. Such adjudication proceedings can take from 10 to 15 years, or longer, to resolve. A copy of the First Amended Cross-Complaint for Declaratory and Injunctive Relief and Adjudication of Water Rights is included in Appendix H.

4.2.3 Groundwater Management Plan

The District has not adopted a groundwater management plan, and no regional groundwater management plan currently exists for the basin. It is expected that the adjudication will result in a court-ordered physical solution, which will include a groundwater management plan.

4.2.4 Overdraft

The most recent version of DWR's Bulletin 118, California's Groundwater (2003), did not characterize the groundwater basin as overdrafted. The prior version (1980) identified the Antelope Valley groundwater basin as overdrafted. The court in the adjudication referred to above has made a preliminary

finding that the basin is overdrafted, and the District agrees that the basin is overdrafted. The District seeks a judgment from the court that eliminates, over time, the long-term overdraft, either by reduction of pumping or the purchase of replacement water.

4.2.5 Historical and Projected Groundwater Pumping

The historical and current volume of total groundwater pumped from the Antelope Valley Groundwater Basin by the District is shown in Table 4-3. The District's groundwater supplies accounted for 33 to 41 percent of water supplies between 2006 and 2010. The projected groundwater pumping volumes are shown in Table 4-4. Pumping in the Antelope Valley Groundwater Basin is expected to increase and remain at a constant 12,000 AF, based on pumping capacity. Given the District's efforts to diversify its water supply portfolio in the next several years, groundwater levels are expected to be managed. Projected groundwater supplies will consist of a combination of native groundwater, imported replenishment, and other banked supplies.

Table 4-3: Historical and Current Groundwater Pumping (AF)

Basin name	Metered or Unmetered	2006	2007	2008	2009	2010
Antelope Valley	Metered	11,359	10,247	9,786	7,764	8,000
Total		**11,359**	**10,247**	**9,786**	**7,764**	**8,000**
Percent of total water supply		**41%**	**34%**	**41%**	**33%**	**41%**
Source: Personal Communication with Palmdale Water District, May 2011						

Table 4-4: Projected Groundwater Pumping (AF)

Basin name	2015	2020	2025	2030	2035
Antelope Valley	12,000	12,000	12,000	12,000	12,000
Total	**12,000**	**12,000**	**12,000**	**12,000**	**12,000**
Percent of total water supply	**34%**	**30%**	**27%**	**23%**	**20%**

4.3 Local Surface Water

Littlerock Dam Reservoir was built in 1922. This reservoir constitutes the District's local surface water supply source and is located in the hills southwest of the District. Recent renovations to Littlerock Dam Reservoir have increased its storage capacity to 3,500 AF, or 1.1 billion gallons of water.

Littlerock Dam reservoir is fed by natural run-off from snow packs in the local San Gabriel Mountains and from rainfall. The principal tributary streams to the District service area are Littlerock and Big Rock Creeks, which flow north from the San Gabriel Mountains along the southern District boundary. Numerous intermittent streams also flow into the service area, however run-off is meager.



Littlerock Creek Dam Reservoir

The Littlerock Dam Reservoir intercepts flows from the Littlerock and Santiago Canyons. Runoff from the 65 square mile watershed in the Angeles National Forest to the reservoir is seasonal and varies widely from year to year.

The water is transferred from Littlerock Dam Reservoir to Palmdale Lake. Although Littlerock Creek flows mainly during winter and spring months, this influx is buffered somewhat by Littlerock Dam Reservoir, allowing this water to be available throughout the year.

4.3.1 Local Surface Water Entitlements

Since 1922, the District has shared water from this source with LCID. The District and LCID jointly hold long-standing water rights to divert 5,500 AFY from Littlerock Creek flows. Per an agreement between the two districts, the first 13 cubic feet per second (cfs) of creek flows is available to LCID (with modifications as described below). Any flow above 13 cfs is shared between the two districts with 75 percent going to the District and 25 percent to LCID. Each of the districts is entitled to 50 percent of the reservoir's storage capacity. On average, the District has taken approximately 4,000 AF per year from Littlerock Dam Reservoir.

In 1992, during renegotiations of the Districts' agreement, a plan to rehabilitate the existing dam was implemented. The plan involved reinforcing the original multiple-arch construction with a roller-compacted concrete buttress, raising the dam by 12 feet to increase capacity, providing recreational facilities around the reservoir, and replacing the historic wooden trestle between the creek and the reservoir with an underground siphon. The entire project was completed by the end of 1995. This agreement gives the District the authority to manage the reservoir. LCID granted ownership of its water rights to the District for the fifty-year term of the agreement in lieu of contributing financial resources for the rehabilitation work. LCID is currently entitled to purchase from the District, in any one calendar year, 1,000 AF of water or 25 percent of the yield from Littlerock Dam Reservoir, whichever is less.

4.3.2 Historical and Projected Local Surface Water Production

The District's historical and current production from Littlerock Dam Reservoir is shown in Table 4-5. Historically the District local surface water production accounts for approximately 9 to 15 percent of its water supplies. The projected local surface water production from Littlerock Dam Reservoir is shown in Table 4-6. It is assumed the District will diversify its water supply portfolio and maintain constant production volumes from Littlerock Dam Reservoir.

Table 4-5: Historical and Current Local Surface Water (AF)

Water source	Metered or Unmetered	2006	2007	2008	2009	2010
Littlerock Dam Reservoir	Metered	4,173	0	3,045	79	1,861
Total (AF)		**4,173**	**0**	**3,045**	**79**	**1,861**
Percent of total water supply		**15%**	**0%**	**13%**	**0%**	**9%**

Source: Personal Communication with Palmdale Water District, May 2011
Note: Historical and current amounts shown represent withdrawals from Littlerock Dam Reservoir

Table 4-6: Projected Local Surface Water (AF)

Water Source	2015	2020	2025	2030	2035
Littlerock Dam Reservoir	4,000	4,000	4,000	4,000	4,000
Total (AF)	**4,000**	**4,000**	**4,000**	**4,000**	**4,000**
Percent of total water supply	**11%**	**10%**	**9%**	**7%**	**7%**

4.4 Imported Water

Imported water from the SWP is the current primary source of water supply to the District, providing approximately 50 percent of the District's water supply. The main transport structure of the SWP is the California Aqueduct, which conveys water from Northern California to Southern California. The aqueduct is an artificial concrete-lined channel that is about 450 miles in length. This facility is managed by DWR.

4.4.1 Imported Water Entitlements

The District is one of 29 contracting agencies entitled to receive Table A water from the SWP. The District has been able to take delivery of SWP water since 1985 from the East branch of the California Aqueduct, which passes through the service area. The District receives its entitlement from a 30 cfs connection on the East Branch, where SWP water is conveyed to Lake Palmdale via a 30-inch diameter pipeline. Lake Palmdale acts as a forebay for the District's 35 mgd water treatment plant and stores approximately 4,250 AF of SWP water and Littlerock Dam Reservoir water.



California Aqueduct

The District is contractually entitled to receive a Table A amount of 21,300 AF per year of SWP water. Availability of SWP water varies from year to year and depends on precipitation, regulatory restrictions, legislative restrictions, and operational conditions. Availability is greatly reduced during dry years. Over the last decade, the District has received between 41 percent and 77 percent of its 21,300 AF contractual amount.

4.4.2 Historical and Projected Imported Water Deliveries

The District's historical and current SWP deliveries are shown in Table 4-7. Historically, imported water accounts for approximately 44 to 50 percent of the District's water supply. The projected imported water deliveries to the District are shown in Table 4-8.It is assumed the District will diversify its water supply portfolio in the coming years and maintain a constant overall use of imported water at 12,800 AFY or 60 percent of its Table A amount.

Table 4-7: Historical and Current Imported Water Deliveries (AF)

Water Source	Metered or Unmetered	2006	2007	2008	2009	2010
SWP	Metered	12,224	20,303	11,272	15,387	9,800
Total		**12,224**	**20,303**	**11,272**	**15,387**	**9,800**
Percent of total water supply		**44%**	**66%**	**47%**	**66%**	**50%**
Source: Personal Communication with Palmdale Water District, May 2011						

Table 4-8: Projected Imported Water Deliveries (AF)

Water Source	2015	2020	2025	2030	2035
SWP	12,800	12,800	12,800	12,800	12,800
Total	**12,800**	**12,800**	**12,800**	**12,800**	**12,800**
Percent of total water supply	**37%**	**32%**	**28%**	**23%**	**21%**

4.5 Recycled Water

The District currently does not have a recycled water program. However, due to current and anticipated growth, as well as increasing uncertainty of the District's ability to meet local water demands with imported water and groundwater, the District is taking proactive steps towards expanding the use of non-potable water to meet a variety of non-potable and indirect potable uses. The District has been actively working with Los Angeles County Waterworks, City of Palmdale, City of Lancaster, and Los Angeles County Sanitation Districts (LACSD) to develop a regional recycled water system.

The District developed a Recycled Water Facilities Plan[11] as part of the first non-potable reuse phase for the Antelope Valley Recycled Water Project Facilities Planning (WPFP) Report[12]. The Antelope Valley WPFP Report provides alternatives for construction of a new distribution system that would deliver recycled water from the Palmdale Water Reclamation Plant (WRP) to some of the District's municipal and industrial customers.



Palmdale WRP

The Palmdale WRP, owned by LACSD, was constructed in the City of Palmdale in 1953 with an initial treatment capacity of 0.75 mgd. Currently, the Palmdale WRP has a secondary treatment capacity of 15.0 mgd and produces an average of 9.0 mgd of disinfected secondary treated water. This recycled water has been used by LACSD for the irrigation of crops and trees on nearby agricultural land. The current secondary treatment facility consist of comminution, grit removal, primary sedimentation, secondary treatment via oxidation ponds, chlorination, and solids processing through anaerobic sludge digestion and sludge drying beds.

In 2007, the Palmdale WRP received an average 9.5 mgd of inflow and discharged 8.5 mgd of disinfected secondary treated water. LACSD plans to construct an upgrade to 12.0 mgd of tertiary capacity by 2011.The planned tertiary modifications will upgrade the secondary process to activated sludge, and provide tertiary filtration and chlorination. The upgraded process will consist of comminution, grit removal, primary sedimentation, aeration basins, secondary clarifiers, filtration and chlorination. The aeration basin will be operated in nitrification/denitrification mode to increase nitrogen removal. Secondary effluent equalization basins will be constructed following the secondary treatment process to provide a tertiary effluent flow that is constant and approximately equal to the average influent flow. Future capacity will be expanded as needed to treat increased wastewater flow.

4.5.1 Wastewater

Wastewater collection and treatment for the cities of Palmdale and Lancaster are provided by LACSD, which provides service to the Antelope Valley through Districts No. 14 and 20. The two districts serve a

[11] Palmdale Water District 2010 Recycled Water Facilities Plan
[12] Antelope Valley Recycled Water Project Facilities Planning Report

combined wastewater service area of approximately 76 square miles and over approximately 310,000 people. Collection is provided through a network of 104 miles of trunk sewers, which are all designed to provide wastewater conveyance through gravity flow.

LACSD prepared the Palmdale Water Reclamation Plant 2025 Facilities Plan and Environmental Impact Report (EIR)[13] to identify effluent management methods that could replace land application and agricultural irrigation above agronomic rates. As discussed above, LACSD is currently upgrading the Palmdale WRP with tertiary treatment facilities, seasonal storage reservoirs, and expanded agricultural irrigation. These improvements will provide the capability to dispose of all effluent at agronomic rates. At completion of the tertiary treatment upgrades, land application will no longer be used. Starting in 2011, all tertiary effluent will need to be delivered to recycled water users, recharged, or delivered to seasonal storage.

Table 4-9 shows the projected wastewater flows to Palmdale WRP that will be treated and available for recycled water use.

Table 4-9: Projected Wastewater Flows to Palmdale WRP (AF)

	2011	2015	2020	2025	2030	2035
Wastewater Flows	11,200	14,100	17,800	21,100	24,800	28,500
Total	**11,200**	**14,100**	**17,800**	**21,100**	**24,800**	**28,500**
Source: Strategic Water Resources Plan, Palmdale Water District, 2010						

4.5.2 Planned Treatment Facilities

The Palmdale WRP will provide recycled water to District customers. The Palmdale WRP construction activities commenced in early 2008 and production of tertiary treated water from the plant will begin in 2011. The Palmdale WRP will provide up to 10 mgd of recycled water upon completion of its upgrades in 2011, with expansions of plant capacity planned in the future. Table 4-10 shows the projected Palmdale WRP tertiary water supply through the year 2035.

Table 4-10: Projected Tertiary Effluent from Palmdale WRP (AF)

	2011	2015	2020	2025	2030	2035
Palmdale WRP Tertiary Water Supply	11,200	14,100	17,800	21,100	24,800	28,500
Total	**11,200**	**14,100**	**17,800**	**21,100**	**24,800**	**28,500**
Source: Strategic Water Resources Plan, Palmdale Water District, 2010						

4.5.3 Projected Recycled Water Production

The District's municipal recycled and non-potable water opportunities represent the primary non-potable reuse potential for the District, which includes municipal/industrial, agricultural uses, and groundwater recharge. Though there currently aren't any identified industrial uses for recycled water within the District, new developments in the future could use non-potable water.

[13] Palmdale Water Reclamation Plant 2025 Facilities Plan and Environmental Impact Report, LACSD, 2005

Through 2011 to 2025, recycled water will be only used for the irrigation of parks, golf courses, schools and agricultural fields. In 2030, the District plans to expand its recycled water use to recharge the groundwater basin. Table 4-11 shows the District's projected future recycled water use by user type.

Table 4-11: Projected Future Use of Recycled Water (AF)

User type	Description	Feasibility	2015	2020	2025	2030	2035
Municipal, Industrial, and Agricultural Irrigation	Landscape irrigation of parks, golf courses, and schools; Irrigation of agricultural fields	Technically and economically feasible	1,000	3,000	6,000	6,000	6,000
Groundwater Recharge	Recharge local groundwater basins	Technically and economically feasible	0	0	0	3,000	6,000
		Total	**1,000**	**3,000**	**6,000**	**9,000**	**12,000**

Source: Palmdale Water District 2010 Strategic Water Resources Plan

4.5.4 Encouraging Recycled Water Use

The District plans to use financial incentives to assist and encourage possible users to connect and utilize recycled water. These financial incentives will consist of recycled water rates that are lower than potable rates (typically 70 to 90 percent). A lower rate provides an incentive for existing customers to convert and for new developments to use recycled water in place of potable water. The anticipated recycled water supplies generated by these incentives are summarized in Table 4-12.

Table 4-12: Methods to Encourage Recycled Water Use (AF)

Actions	Projected Results					
	2010	**2015**	**2020**	**2025**	**2030**	**2035**
Financial Incentives	0	1,000	3,000	6,000	9,000	12,000
Total	**0**	**1,000**	**3,000**	**6,000**	**9,000**	**12,000**

Source: Strategic Water Resources Plan, Palmdale Water District, 2010

4.6 Desalinated Water

4.6.1 Brackish Water and/or Groundwater Desalination

The groundwater that underlies the District is not brackish in nature and does not require desalination. However, the District could provide financial assistance to other SWP contractors to construct brackish desalination facilities in exchange for SWP supplies. Communities near a desalination plant would receive the desalinated water and an equivalent volume of SWP supplies would be exchanged and allocated to the District. Should the need arise, the District may consider this option in the future.

4.6.2 Seawater Desalination

Since the District is not located in a coastal area, it is not practical nor economically feasible to implement a seawater desalination program. However, the District could provide financial assistance to other SWP Contractors to construct seawater desalination facilities in exchange for SWP supplies.

In March 2004, the California Coastal Commission released the "Seawater Desalination and the

California Coastal Act" which included a summary and status of existing and proposed seawater desalination plants in California. However, most of the listed facilities would not be operated by agencies that are SWP contractors. Thus for an exchange of SWP supplies to take place, a third party would have to be involved.

At this point in time, the District has determined that desalination is not a cost-effective solution for water supply needs due to the local project and water resource opportunities that are currently available at a lower cost.

4.7 Alternative Future Sources of Supply

The ability of the District to reliably meet future water demands with its current water supplies is not certain. Therefore the District is diversifying its water supply sources to meet its service area's future water demands by using three new sources: 1) recycled water, 2) groundwater banking and 3) anticipated new sources. Anticipated new sources consist of transfer and exchange opportunities that will be used to meet future water demands within the District's service area. Table 4-13 shows the projected water supply volumes for each of the District's new water supply sources. The supply reliability analysis of the three new water supply sources can be found in Section 5.4 Projected Water Supply Reliability.

4.7.1 Recycled Water

Currently the District is actively working with LACSD to develop recycled water supplies for its service area customers. Further details on the District's recycled water plans can be found in Section 4.5.

4.7.2 Groundwater Banking

The District currently does not operate a systematic banking program but is actively pursuing this future water supply source. Groundwater banking will be an important strategy for the District to maintain and improve water supply reliability. The water to be banked will come from above-average year supplies (i.e., when SWP allocations are greater than the typical 60 percent). As needed, additional water supplies could be purchased from other sources.

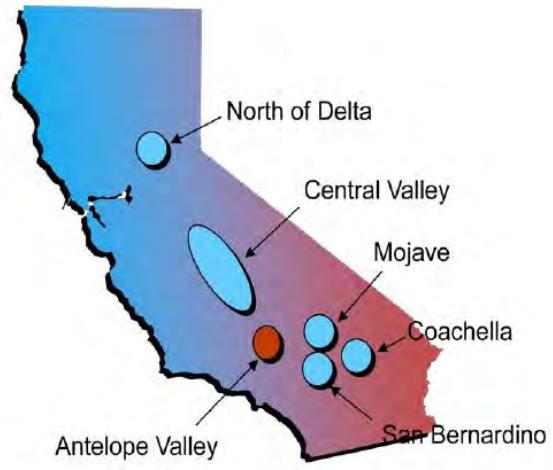
Currently there are water banks operating in a variety of locations throughout the state (see Figure 4-3) and in various forms. The District is currently exploring banking opportunities within and outside the Antelope Valley. The list below includes the District's current groundwater water banking options[14].

- **Central Valley Storage**: This would consist of using a share system in the Semitropic Water Bank which is currently in operation. The District could store over 60,000 AF and recover 10,000 to 20,000 AF.
- **Storage South of the District**: This would consist of banking above-average allocations by providing these supplies to agencies for groundwater recharge or in-lieu recharge and in turn, during dry-years, the District would receive SWP water from these agencies. The District could store 10,000 to 30,000 AF and recover 5,000 to 15,000 AF.
- **Storage North of Delta**: This would consist of an exchange or transfer with agricultural entities north of the Delta in site specific areas for an interim or short-term basis. The District could store 5,000 to 10,000 AF and recover 2,500 to 5,000 AF.
- **Storage within the Antelope Valley**: This would consist of banking above-average allocations in planned water banking projects in locations within the Antelope Valley. The District could store over 60,000 AF and recover 10,000 to 15,000 AF.

[14] Palmdale Water District 2009 Strategic Water Resources Plan

- **Storage within the District**: This would consist of installing a recharge and recovery facility within the District's groundwater basin area to augment banked supplies. The District would store 39,000 to 105,000 AF in the local groundwater basin and would recover 13,000 to 35,000 AF.

Figure 4-3: Statewide Water Banking Locations



Source: PWD SWRP, 2010

4.7.3 Anticipated New Sources

The District's anticipated new sources consist of water supply transfer and exchange opportunities. The District will utilize a combination of various transfer and exchange opportunities to meet its projected water demands. Section 4.8 provides additional information on these sources.

The projected water supplies that will be used to meet District demands are summarized in Table 4-13.

Table 4-13: Projected Water Supply of Future Projects (AF)

New Water Sources	Potential project constraints	2015	2020	2025	2030	2035
Recycled Water	Availability of supplies, Water Quality, and Regulatory Requirements	1,000	3,000	6,000	9,000	12,000
Groundwater Banking	Regulatory Requirements, Outcome of Adjudication, and Suitability of Local Geology	2,600	4,100	5,100	8,600	9,600
Anticipated New Sources	Availability and Price	2,600	4,100	5,100	8,600	9,600
	Total	**6,200**	**11,200**	**16,200**	**26,200**	**31,200**

4.8 Transfer and Exchange Opportunities

The projected water demands for the study area will exceed the existing available water supply in the foreseeable future. As such, the District has evaluated various transfer and exchange opportunities that will aid in meeting projected water demands.

The District recently completed and adopted its Strategic Water Resources Plan wherein the District identified additional needed surface water acquisitions and transfers as a component of its overall water supply strategy. Table 4-14 describes these potential water transfer and acquisition opportunities.

Table 4-14: Transfer and exchange opportunities

Transfer agency	Transfer or exchange	Short term or long term	Proposed Volume (AF)
DWR	Excess Wet Year Water	Short Term	5,000-10,000
SWP	Wet-Year (1 Year)	Short Term	26,000
DWR	Dry year	Short Term	5,000-10,000
		Subtotal	**36,000-46,000**
SWP	Long-Term Lease	Long Term	15,000
SWP/CVP	Permanent	Long Term	34,500
		Subtotal	**49,500**
SWP	Table A SWP Water	Short Term/ Permanent	10,000
CVP	CVP Water	Short Term/ Permanent	10,000
PRE-14	Non-SWP Water	Short Term/ Permanent	5,000-10,000
		Subtotal	**25,000-30,000**
Source: Personal Communication with Palmdale Water District, May 2011			

For transfer and exchange strategic purposes, the District will:

- Establish the ability to bank available imported water as soon as possible
- Focus first on developing storage within the Antelope Valley Groundwater Basin
- Pursue partners to participate in developing the District's storage facilities including other Antelope Valley State Water Contractors Association (AVSWCA)
- Consider water banking in locations outside the District if it is cost effective and the project produces a value-added benefit (such as additional aqueduct delivery capacity)

Section 5
Water Reliability and Water Quality









Section 5 Water Reliability and Water Quality

5.1 Water Shortage Contingency Planning

5.1.1 History of Water Shortage and Conservation Resolutions

In 1991, the State of California experienced a four-year drought condition. Subsequently, the District's Board of Directors approved several resolutions for voluntary and mandatory water conservation measures.

On February 21, 1991, the Board of Directors approved Resolution 91-4 (included in Appendix F) adopting a voluntary water conservation program with a goal of reducing water use by 15 percent. This resolution encouraged District customers to practice water conservation methods including adjustment of sprinklers to avoid over spray and runoff; avoidance of watering during the daytime or during peak morning and evening hours; installation of drought tolerant landscaping and efficient irrigation systems; reduction/elimination of decorative fountains; reduction/avoidance of hosing down of driveways, sidewalks or other paved surfaces; installation of pool and spa covers; reduction/avoidance of hose runoff while washing vehicles; retrofitting of indoor plumbing fixtures with low flow devices, and audits to check plumbing and irrigation systems for leaks and provide subsequent repairs.

On April 9, 1991, the Board of Directors approved Resolution 91-9 (included in Appendix F) declaring a water shortage emergency condition and adopting regulations and restrictions on the delivery and consumption of water for public use. This resolution authorized the General Manager to implement the regulations and restrictions set forth in the resolution, including issuing a moratorium on new connections and mandatory water rationing.

On July 9, 1991, the Board of Directors approved Resolution 91-10 (included in Appendix F) establishing conservation regulations. This resolution established the base water use for the customers as the amount of water delivered to that customer during the water year ending on December 31, 1990. Water consumed in excess of the established conservation percentage was charged at a rate of $3.00 per 100 cubic feet, in addition to the base water rate. A conservation goal of twenty percent was established. A method of adjusting the base amount was included in the resolution for special circumstances. Mandatory water conservation regulations were imposed. These included restrictions on hosing down paved areas; washing of vehicles in public eating areas, commercial nurseries, parks and other public open spaces; noticing requirements for water conservation methods at public lodging facilities, including hotels, inns and motels; and restrictions on the use of water from fire hydrants.

On August 13, 1991, the Board of Directors adopted a Water Waste Policy as an addition to the District Policy Manual (included in Appendix F). The Water Waste Policy imposes fines for water or misuse of water and provides for disconnection of service for repeated offenses.

In March 1992, the District Board of Directors moved to withdraw from the voluntary water rationing program.

On May 23, 2007 the District Board of Directors adopted Resolution No. 07-04 adopting a voluntary water conservation program (included in Appendix F).

On August 29, 2007 the District Board of Directors adopted Resolution No. 07-9 declaring a water shortage emergency condition and adopting regulations and restrictions on the delivery and consumption of water for public use (included in Appendix F). This resolution authorized the General Manager to implement the regulations and restrictions set forth in the resolution, including issuing a moratorium on

new connections and mandatory water rationing.

Resolution No. 07-9 was revised on November 14, 2007, to include exemptions to the regulations under section 4, items #6 and item #9 (described below).

Resolution No. 07-9

Section 4, Items #6 and #9

6) No lawn, landscape, or other turf area shall be watered more often than three (3) days per week and no more often than every other day nor during the hours between 10:00 a.m. and 8:00 p.m. Water days will be set as follows: addresses ending in an even number starting on Monday, and; addresses ending in an odd number starting on Tuesday.

Exemptions:

1. No watering hour restrictions during the months of November, December, January, and March. Watering can occur between the hours of 6:00 a.m. and 8:00 p.m.
2. The District will allow an exemption from the watering schedule if an ET controller is installed and operating. The ET controller Exemption Form must be completed and the installation verified by a licensed landscape architect or PWD staff.

9) Commercial nurseries, golf courses, parks, school yards, and other public open space, and landscaped areas shall be prohibited from watering lawn, landscaping, and other turf areas more often than five days per week and between the hours of 10:00 a.m. and 8:00 p.m., except that there shall be no restriction on watering utilizing reclaimed water or where public use requires a modified and approved watering schedule.

Exemptions:

1. Athletic field watering can occur between the hours of 6:00 p.m. and 10:00 a.m. the following morning.
2. No watering hour restrictions during the months of November, December, January, and March. Watering can occur between the hours of 6:00 a.m. and 6:00 p.m.
3. The District will allow an exemption from the watering schedule if an ET controller is installed and operating. The ET controller Exemption Form must be completed and the installation verified by a licensed landscape architect or PWD staff.
4. Watering schedules must be adhered to at all times. The District requires advance written notice of maintenance activities requiring water use between the hours of 6:00 a.m. and 6:00 p.m.

On March 11, 2009, the Board of Directors adopted and approved Resolution No. 09-04 declaring a water shortage emergency condition and adopting regulations and restrictions on the delivery and consumption of water for public use.

On December 9, 2009 the Board of Directors adopted and approved Resolution No. 09-19 declaring water conservation regulations and amending the mandatory water conservation measures in resolution No. 09-04. The District's new water budget allocation based rate has reduced water demand, although the waste of water policy is still in effect. The resolution also sets an ultimate conservation goal of a 20 percent reduction by 2020.

The District will commence using these same resolutions of water conservation regulations as necessary, depending on shortages of rainfall or reductions in the District allotment of SWP water. Reduced

availability of SWP water and the District's intent to provide up to 40 percent of supply with groundwater may result in the need to use voluntary conservation measures when dry years occur.

5.1.2 Mandatory Prohibitions and Consumption Reduction

Mandatory compliance measures enacted during a water shortage are more severe than voluntary measures, produce greater savings, and are less costly to the utility. The principal drawback to these measures is customer resentment if the measures are not seen as equitable. These types of measures need to be accompanied by effective public relations campaigns. Mandatory measures may include:

- Ordinances prohibiting water waste
- Ordinances controlling landscape irrigation
- Ordinances restricting outdoor irrigation water uses
- Prohibitions on new connections of the incorporation of new areas
- Rationing of water supplies

Prohibitions on new development may conflict with other policies and needs. However, if existing customers are called upon to make sacrifices during a drought period, they may feel that water agencies should concentrate on fulfilling current obligations rather than taking on new customers. Such prohibitions may need to be considered in the event of a critical shortage, such as the District's 40-50 percent reduction program. If necessary, an offset program might be considered whereby developers demonstrate that they will implement measures to conserve at least as much water in the existing community as their new project will use. In some cases, a two to one offset may be required of the new development.

Upon specific authorization by the Board of Directors, the General Manager shall implement phased water rationing to protect the water supply of the District and to guarantee adequate supply for domestic use, sanitation, and fire protection. Table 5-1 lists the District's consumption reduction methods.

Table 5-1: Consumption Reduction Methods

Consumption Reduction Methods	Stage When Method Takes Effect	Projected Reduction (%)
Water Rationing	1	20% of water deliveries to all District customers
Water Rationing	2	30% of water deliveries to all District customers
Water Rationing	3	40% of water deliveries to all District customers

During a water shortage the District will enforce Resolution 91-10 (included in Appendix F). Resolution 91-10 becomes mandatory when a Stage 1 Water Shortage Emergency is declared. Table 5-2 lists the District's mandatory prohibitions.

Table 5-2: Mandatory Prohibitions

Prohibitions	Stage When Prohibition Becomes Mandatory
There shall be no washing of sidewalks, walkways, buildings, walls, patios, driveways, parking areas, or other paved surfaces, or walls, except to eliminate conditions dangerous to public health or safety or when required as surface preparation for application of architectural coating or painting.	Stage 1 Water Shortage Emergency

Prohibitions	Stage When Prohibition Becomes Mandatory
Washing of motor vehicles, trailers, boats and other types of equipment shall be done only with a hand held bucket or a hose equipped with a positive shut off nozzle for quick rinses. Washing may also be done with reclaimed wastewater or by a commercial car wash using a recycled system.	Stage 1 Water Shortage Emergency
No water shall be used to clean, fill or maintain levels in decorative fountains, ponds, lakes or other similar aesthetic structures unless such water is part of a recycling system.	Stage 1 Water Shortage Emergency
No restaurant, hotel, café, cafeteria or other public place where food is sold, served or offered for sale, shall serve drinking water to any customer unless expressly requested and shall display a notice to that effect.	Stage 1 Water Shortage Emergency
All water users shall promptly repair all leaks from indoor and outdoor plumbing fixtures.	Stage 1 Water Shortage Emergency
No lawn, landscape or other turf area shall be watered more than once every other day nor during the hours between 10:00 a.m. and 4:00 p.m.	Stage 1 Water Shortage Emergency
No water users shall cause or allow the water to runoff landscape areas into adjoining streets, sidewalks, or other paved areas due to incorrectly directed or maintained sprinklers or excessive watering.	Stage 1 Water Shortage Emergency
The owner and manager of every hotel, motel, inn, guest-house, bed and breakfast facility and short-term commercial lodging shall post a notice to such shortage and any necessary compliance measures.	Stage 1 Water Shortage Emergency
Commercial nurseries, golf courses, parks, school yards, and other public open space and landscaped areas shall be prohibited from watering lawn, landscaping, and other turf areas more often than every third day and between the hours of 6:00 a.m. and 6:00 p.m.	Stage 1 Water Shortage Emergency
The use of water from fire hydrants shall be limited to fire fighting and related activities and other uses of water for municipal purposes shall be limited to activities necessary to maintain public health, safety and welfare.	Stage 1 Water Shortage Emergency

The District has developed a three-stage rationing plan that will be invoked during declared water shortages. Each stage includes a water reduction objective, in percent of normal demands. The rationing plan is dependent on the cause; severity and anticipated duration of the water supply shortage (see Table 5-3).

Table 5-3: Rationing Stages to Address Water Supply Shortages

Stage No.	Water Supply Conditions	% Shortage
1	Minor Shortage Potential	20% reduction in supplies
2	Moderate Shortage Potential	35% reduction in supplies
3	Critical Shortage Potential	40-50% reduction in supplies

5.1.3 Penalties and Charges

Customers found wasting or misusing water shall be subject to the actions listed in Table 5-4 based on the number of violations. A customer that has been assessed a penalty for violating or exceeding the water use allocation will have the right to a review of the penalty by the District's General Manager. The customer has five working days to file a request for reconsideration. If the customer is not satisfied with

the General Manager's decision; the customer has 15 days to file an appeal with the Board. The Board's decision is final and conclusive.

Table 5-4: Penalties and Charges

Penalties or Charges	Stage When Penalty Takes Effect
A written warning of the violation shall be issued by District personnel to the respective water customer. Photographic record of the violation will be made and the warning will be logged in the customer's service record.	First Violation
A written warning of the violation shall be issued by District personnel to the respective water customer stating that a third violation will result in disconnection. The customer will also be charged a $50.00 penalty.	Second Violation
A written warning of the violation shall be issued by District personnel to the respective water customer stating that disconnection will occur within five days after the notice. The customer will be charged a disconnection fee, as well as a reconnection fee if service is later restored.	Third Violation

5.1.4 Water Reduction Stage Triggering Mechanism

Emergency response stage actions become effective when the Board of Directors declares that the District is unable to provide sufficient water supply to meet ordinary demands, to the extent that insufficient supplies would be available for human consumption, sanitation and fire protection. Then the General Manager is authorized to implement regulations and restrictions, including a moratorium on new connections and mandatory water rationing.

A combination of voluntary and mandatory water conservation measures would be used to reduce water usage in the event of water shortages. Reduction in deliveries is based upon the amount of water delivered to that customer during the preceding year.

5.1.5 Administration of Water Shortage Program

The administration of a water shortage program as described in this section would involve coordination between a number of local agencies. A District staff individual would be identified as the Program Manager and be the primary coordinator of water shortage activities.

An appropriate organizational structure for a water shortage management team would be determined based on the actual situation. Specific individuals would be designated to fill the identified roles (see Figure 5-1). The District would probably not have to hire additional staff or outside contractors to implement the program.

The major elements to be considered in administering and implementing the program include:

- *Identifying the District staff members to fill the key roles on the water shortage management team.* It is anticipated that the General Manager for the District would designate the appropriate individuals.

- *Intensifying the public information program to provide comprehensive information on the water shortage as necessary actions that must be undertaken by the District and by the public.* The scope of the public information program can be developed by reviewing published references, especially those published by DWR, and researching successful aspects of the current programs conducted by neighboring water agencies. A public information hotline may be advisable to answer any questions regarding the program.

- *Monitoring program effectiveness.* Ongoing monitoring will be needed to track supply availability and actual water user reductions. This procedure will allow the District to continuously re-evaluate the situation and make informed decisions as to whether another reduction level is needed.

- *Enforcing program requirements.* For the 20 to 40 percent reduction programs, enforcement of water use prohibitions and water use allocations will be more important in achieving the program goals than other measures. Inspectors and enforcement personnel could be identified among District staff that is in the community on other business.

- *Dealing with equity issues that might arise from the mandatory restrictions or higher water rates.* Depending on the level of restriction, there may be a greater need to address specific concerns of individual customers who might have special conditions or extenuating circumstances and are unduly affected by the program. A procedure should be identified for dealing with such special requests and/or for reviewing specific accounts.

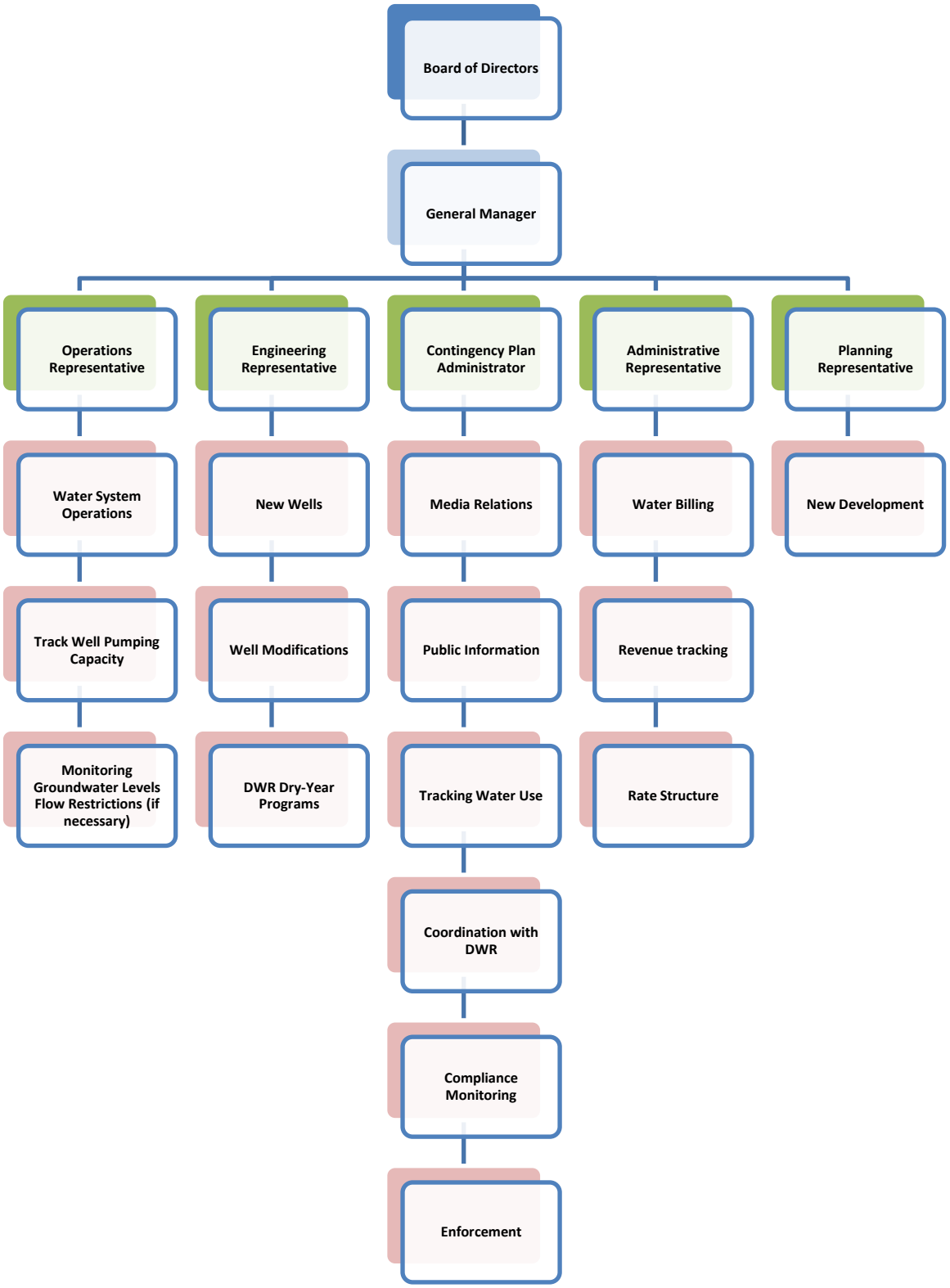
- *Coordinating with other agencies.* Since most of the District's primary service area lies within the Palmdale city limits, it is critical to have ongoing coordination with a specific contact person at the City who will be aware of District developments.

- *Adjusting water rates.* Revenues from water sales should be reviewed periodically to determine whether an increase in rates might be needed to cover revenue shortfalls due to the decrease in demand.

- *Addressing new development proposals.* During periods of severe water shortage, it may be necessary to impose additional requirements on new developments to reduce new demand or to temporarily curtail new connections.

It is required that the water shortage contingency plan undergoes a formal public review process, including a public hearing. A thorough public review process will help minimize future objections when mandatory prohibitions are needed.

Figure 5-1: District Management Team in Water Shortage Contingency Plan[15]



[15] Water Shortage Contingency Plan, Palmdale Water District, 2010

5.1.6 Actions during a Catastrophic Interruption

During declared shortages, or when a shortage declaration appears imminent, the General Manager will activate a water shortage response team. The team includes: water, fire, planning, health, and emergency personnel. Other actions and procedures to follow during catastrophic events will be developed.

An interconnection exists between AVEK and the District for reciprocal emergency water supply.

5.1.7 Reduction Measuring Mechanism

The District's water system is supplied by groundwater wells and treated surface water. The District measures the amount of water entering the distribution system through flow monitoring devices installed on each well and at the Water Treatment Plant. There are also meters on all connections that measure the amount of water used. These devices will be used to monitor District-wide reduction in water use.

5.1.8 Impact on Revenues and Expenditures

When significant conservation programs are undertaken, a budget deficit is likely to occur (see Table 5-5).The District has annual revenue of approximately twenty million dollars. Surplus revenues are carried over in a reserve fund for maintenance, capital improvement and budget deficits. However, the District can also purchase dry-year water in lieu of implementing conservation measures. Though this will impact the District's expenditures, it will not significantly impact revenues.

Table 5-5 shows a detailed breakdown of the District revenues, expenses, and change in net assets for 2009 and 2010. This table demonstrates that revenues can remain relatively constant as the overall value of net assets fluctuates year to year.

Table 5-5: District Statement of Revenues, Expenses and Change in Net Assets[16]

	Actual 2010 ($)	Actual 2009 ($)
Water sales and Service Fees	21,640,582	21,024,619
Administration	4,159,831	4,149,701
Finance and Customer Service	3,829,205	3,602,566
Engineering	1,281,197	1,422,431
Water Conservation	313,260	263,376
Facilities	5,188,578	5,362,757
Operations and Production	3,567,635	2,527,780
Purchased Water	4,752,425	3,484,933
Total Operating Expenses	**23,092,131**	**20,813,544**
Operating income (loss) before overhead	(1,451,549)	211,075
Overhead absorption	576,109	1,493,912
Operating income (loss) before depreciation	(875,440)	1,704,987
Depreciation expense	(7,010,721)	(5,971,865)
Operating (Loss) Income	**(7,886,161)**	**(4,266,878)**
Property Taxes	5,855,862	5,991,668
Investment earnings	88,771	48,201
Energy refunds and rebates	13,985	1,342
Rental income	116,979	93,010
Legal Settlements	(391,900)	184,312
SWP amortization expense	(1,317,226)	(1,317,226)
Gain/(loss) on sale/disposition of capital assets	977,979	
Amortization	(37,894)	(37,894)
Interest expense- Long term debt	(22,550,410)	(2,594,491)
Other non operating revenues (expenses)	133,667	126,655
Total non-operating revenues	2,842,944	2,495,577
Net loss before capital contributions	(5,043,217)	(1,771,301)
Capital contributions	**(92,810)**	**892,581**
Capital improvement fees	**148,777**	**37,115**
State capital grants	**-**	**1,304,813**
Total capital contributions	**55,967**	**2,234,509**
Change in net assets	**(4,987,250)**	**463,208**
Note: Palmdale Water District 2009		

[16] Source: Personal Communication with Palmdale Water District, May 2011

5.2 Water Quality

Water quality is an important factor in determining overall supply reliability; if adequate drinking water quality cannot be maintained, then the supply will no longer be available for use. The District is currently able to effectively meet all drinking water standards for each of its supplies. However, the District also understands that the quality of supply sources can change over time and is therefore constantly working to anticipate and mitigate those changes. The District's regular monitoring of its water supply quality and understanding of current and potential regulations will allow it to respond readily to any quality induced reliability issues.

5.2.1 Groundwater Quality

Groundwater quality is suitable for municipal, irrigation and most industrial uses. Total dissolved solids (TDS) and nitrate are the two primary constituents that present concerns for groundwater quality in the Antelope Valley Groundwater Basin. Arsenic has also emerged as a potential concern. Groundwater quality sampling data shows TDS concentrations that range from 110 to 1,480 milligrams per liter (mg/L), with samples at four wells above the recommended secondary drinking Maximum Concentration Level (MCL) of 500 mg/L. Nitrate levels ranged from non-detect to 15 mg/L and exceeded the primary drinking water MCL of 10 mg/L in three wells.

The District provides its customers with water quality consumer confidence reports to provide a better understanding of its drinking water quality. The District also created a Groundwater Assessment and Protection Program and Wellhead Protection Plan to continue protecting the groundwater quality. Further information on these is provided below:

Groundwater Assessment and Protection Program

In November of 1998, the District and Standish-Lee consultants prepared the District's Source Water Assessment Program (SWAP)[17]. The purpose of the program is to develop a Groundwater and Wellhead Protection Plan for the District and to meet the State of California's requirements for source assessment and protection.

The District relies on groundwater to provide at least 40 percent of its water supply. Groundwater rehabilitation projects are time consuming and costly and can result in water shortages.

The goals of this project were:

- Locate District wells and prepare an assessment map.
- Delineate the groundwater protection areas.
- Evaluate the drinking water source and its site characteristics in terms of effectiveness of the physical barriers to contaminants.
- Conduct an inventory of Potential Contaminating Activities (PCAs) within the delineated areas, rank their risk level and identify them on the assessment map.
- Evaluate the risk from PCAs to each source.
- Start developing management strategies for the drinking water protection areas of existing wells.
- Develop a strategy for public involvement and public education.

[17] Urban Water Management Plan, Palmdale Water District, 2005

Wellhead Protection Plan

On November 8, 2000, the District adopted the Wellhead Protection Plan[18]. The goal of local source water protection is to identify, develop and implement local measures that provide protection to the drinking water supply. Wellhead protection provides one more barrier to contamination in a multi-barrier protection treatment train.

To encourage states and local agencies to go beyond source water assessment and into implementation of management techniques to protect sources of drinking water, the U.S. Environmental Protection Agency (EPA) incorporated amendments to the Safe Drinking Water Act. Although the amendments do not impose regulatory or enforcement provisions the prevention of source water contamination provides great benefits to the public and is almost always less expensive than treatment and monitoring after a drinking water source has been contaminated.

Management of the wellhead protection areas to prevent groundwater contamination involves several steps:

- Identification of protection options appropriate for the types of PCAs present
- Selection of those that are technically and politically feasible
- Implementation
- Monitoring the effectiveness of management options and application of additional Best Management Practices (BMPs) if required

5.2.2 Imported Water

The District does not currently experience and does not foresee issues with its imported water quality as it receives treatment from the Palmdale Water Treatment Plant (PWTP).

5.2.3 Local Surface Water

Surface water from Littlerock Creek Dam Reservoir is generally of very high quality. The District does not currently experience and does not foresee issues with its local surface water as it receives treatment from the PWTP.

5.2.4 Palmdale Water Treatment Plant

The PWTP provides treatment for water extracted from Lake Palmdale. Lake Palmdale receives water from the two sources: SWP and Littlerock Creek Dam Reservoir. Water is conveyed from the SWP via a 30-inch diameter pipeline while water from Littlerock Creek Dam Reservoir is conveyed through an open canal.

The PWTP consists of chemical addition, flocculation, sedimentation, filtration, and disinfection. The capacity of the existing plan is 30 mgd. However, a water supply permit from the Department of Health Services (DHS) requires that one filter be kept off-line as a redundant source. This limits the capacity of the plant to 28 mgd.

In 2008, the District made significant upgrades to the PWTP. Several of the upgrades include the installation of a self cleaning screen at the lake outlet, addition of a third stage of flocculation, included plate settlers, a new sludge removal system to existing sedimentation basins and upgrades to the influent piping.

[18] Urban Water Management Plan, Palmdale Water District, 2005

5.3 Water Supply Reliability

The District's supply reliability can be impacted by many factors, including changes in the availability of supplies due to climatic or infrastructure changes, as well as the efficient use of those supplies in both average and dry periods. These factors can result in immediate (facility failures), near-term (SWP limitations, or long-term (climate change) impacts to reliability and must therefore be considered in future planning.

The impacts of these factors on supply reliability increase under single dry and multiple dry year hydrologic patterns. Although not all shortages can be prevented, the District's overall goal to further diversify its supply portfolio is the most important step toward improving the immediate, near- and long-term reliability of supplies. If shortages do occur, the District has completed a comprehensive water shortage contingency plan to manage these situations.

The reliability within the District's service area is a composite of the reliability of each source of supply. Table 5-6 summarizes the factors that impact each resource's supply reliability.

Table 5-6: Factors Resulting in Inconsistency of Water Supply

Water supply sources	Specific source name, if any	Limitation quantification	Legal	Environmental	Water quality	Climatic
Groundwater	Antelope Valley Groundwater Basin	Limited by well production capacity	x		x	
Imported Water	SWP (California Aqueduct)	Limited by Table A maximum amount and hydrologic conditions	x	x	x	x
Local Surface Water	Littlerock Creek and Dam Reservoir	Limited by Allocation				x

5.3.1 Groundwater Reliability

Groundwater is traditionally considered a highly reliable supply since it is not immediately susceptible to changes in climate and surface flows. However, the two main factors that impact the reliability of groundwater supplies are legal and water quality.

Legal Factors

The Antelope Valley Groundwater Basin is in overdraft and is currently in the process of adjudication, which will limit and possibly decrease the allowable annual extraction of groundwater for the District. Changes to the basin operations, including pumping and storage, will be considered legal impacts once the Antelope Valley Groundwater Basin becomes adjudicated.

Water Quality Factors

The water quality of groundwater supplies is a factor in the District's reliability as it needs to meet drinking water standards. The District relies on groundwater to provide a large portion of its water supply and therefore has taken measures to ensure protection of groundwater quality. These measures are discussed in detail in Section 5.2.1.

5.3.2 Imported Water Reliability

The District receives its imported water from the SWP. The factors affecting the reliability of imported water supplies from the SWP include legal, environmental, water quality, and climatic.

Legal Factors

Legal factors include policies and contract stipulations from DWR. Any legal actions can impact supplies from SWP water supplies in various ways, such as the recent federal district court decision limiting SWP pumping due to perceived impacts on endangered fish in the Sacramento-San Joaquin Delta (Delta) estuary.

Environmental Factors

Environmental factors such as impacts to endangered species, their habitat, and other related concerns can impact SWP water supplies such the recent court decision to limit SWP pumping due to the perceived impact on endangered fish in the Delta estuary.

Water Quality Factors

The water quality of SWP water sources can impact the availability of supplies due to treatment or remediation needed to ensure compliance with drinking water standards.

Climatic Factors

Imported water supplies rely heavily on runoff from rainfall and snowpack. If annual snowpack and rainfall amounts change significantly without corresponding investment in infrastructure and/or management practices, the quantity of water available from the SWP in any given year is subject to potential reductions. At this time, the impacts of climate change to imported water supplies are uncertain.

5.3.3 Local Surface Water Reliability

The District expects a certain amount of Littlerock Dam Reservoir water to be available for supply in all years. This amount is estimated at 50 percent of the average available historical yield (8,000 AF) such that 4,000 AF is available in all years. The District recognizes that annual climatic changes can impact the reliability of Littlerock Dam Reservoir water in amounts above 4,000 AF.

Climatic Factors

The District diverts surface water from Littlerock Dam Reservoir which receives flows from Littlerock Creek. Littlerock Creek flows can be variable given changes in local precipitation and ETo. Most Littlerock Creek flows occur seasonally during the winter months and conversely decrease significantly during dry months. The District recognizes that annual climatic changes can impact the reliability of Littlerock Dam Reservoir water in amounts above 4,000 AF.

5.4 Projected Water Supply Reliability

There are two aspects of supply reliability. The first relates to immediate service needs and is primarily a function of the availability and adequacy of the supply facilities. The second aspect is climate-related, and involves the availability of water during mild or severe drought periods. This section considers the District's water supply reliability during three water scenarios: normal water year, single dry water year, and multiple dry water years. These scenarios are defined as follows:

- **Normal Year**: The normal year is a year in the historical sequence that most closely represents median runoff levels and patterns. The supply quantities for this condition are derived from historical average yields.
- **Single Dry Year**: This is defined as the year with the minimum useable supply. The supply quantities for this condition are derived from the minimum historical annual yield.

- **Multiple Dry Years**: This is defined as the three consecutive years with the minimum cumulative useable supply. Water systems are more vulnerable to these droughts of longer duration because they deplete water storage reserves in local and state reservoirs and in groundwater basins. The supply quantities for this condition are derived from historical three-year running minimum average yields.

For groundwater, the District expects pumping to be consistent under normal, single-dry year, and multiple-dry years of 12,000 AF. For Littlerock Dam Reservoir, the District used driest year on record of 1951. The District expects to use 4,000 AF of its diversion rights under normal, single-dry year, and multiple-dry years. This amount is calculated as 50 percent of the average available yield from the Littlerock Dam Reservoir (50 percent of 8,000 AF) and is considered to be available for supply in all years.

For SWP water, the District used the 2009 SWP Delivery Report[19] to identify its single-dry and multiple-dry water years. A single year drought, such as the one that occurred in 1977, would result in a yield of approximately 7 to 11 percent of the District's Table A amount (see Section 4.1.1). In an extended drought, such as the one that occurred in 1990-1992, the District expects to receive an average of 34 to 37 percent of its Table A amount.

5.4.1 Current Total Water Supply Reliability

The District's available minimum water supply by source based on current water supply sources under a normal, single-dry year, and multiple-dry year is presented in Table 5-7. Groundwater pumping and Littlerock Dam Reservoir diversions will remain the same during a normal water year, single-dry year, and multiple-dry year. SWP water is the only water supply source that is considered to have variability during single-dry and multiple-dry water years.

The 2009 SWP Delivery Report[20] states that a single year drought would result a yield of approximately 7 to 11 percent of the Districts Table A amount. Therefore, the average of 7 to 11 percent, 9 percent, was used to calculate the District's SWP water availability under a single-dry water year. The 2009 SWP Delivery Report states the overall delivery of SWP water to the District will be available at 34 to 37 percent of the District's Table A amount. Therefore, the average of 34 to 37 percent, 35.5 percent, was used to calculate the District's SWP water availability under a multiple-dry water year scenario.

Table 5-7: Current Total Water Supply Reliability (AF)

Water supply sources	Normal Water Year	Single Dry Water Year	Multiple Dry Water Year		
			2010	2011	2012
Groundwater	12,000	12,000	12,000	12,000	12,000
SWP	9,800	1917	7,562	7,562	7,562
Littlerock Dam Reservoir	4,000	4,000	4,000	4,000	4,000
Total	**25,800**	**17,278**	**22,816**	**22,816**	**22,816**
Percent of Normal year	**100%**	**67%**	**88%**	**88%**	**88%**

5.4.2 Normal Year

Table 5-8 shows the projected reliability of planned water supplies under a normal water year for five year increments between 2015 and 2035. Groundwater pumping and Littlerock Dam Reservoir diversions are expected to remain the same during a normal water year, single-dry year, and multiple-dry year. SWP

[19] State Water Project Delivery Reliability Report, Department of Water Resources, 2009
[20] State Water Project Delivery Reliability Report, Department of Water Resources, 2009

water is the only water supply source the District expects to have variability during single-dry and multiple-dry water years. SWP water is expected to be consistently available as 60 percent of the Districts Table A amount for a normal year.

Table 5-8: Projected Normal Year Water Supply and Demand (AF)

Supplies	2015	2020	2025	2030	2035
Current Water Supplies					
Groundwater	12,000	12,000	12,000	12,000	12,000
SWP	12,800	12,800	12,800	12,800	12,800
Littlerock Dam Reservoir	4,000	4,000	4,000	4,000	4,000
Planned Water Supplies					
Recycled Water	1,000	3,000	6,000	9,000	12,000
Groundwater Banking	2,600	4,100	5,100	8,600	9,600
Anticipated New Supplies	2,600	4,100	5,100	8,600	9,600
Total Supply	**35,000**	**40,000**	**45,000**	**55,000**	**60,000**
Total Demand[1]	**35,000**	**40,000**	**45,000**	**55,000**	**60,000**
Surplus/(shortage)	**0**	**0**	**0**	**0**	**0**

Note:
1. Demands are not expected to change during drought conditions; the region typically receives little rain, and with implementation of DMMs, water demands for irrigation do not increase in the District under single-dry year and multiple-dry year conditions.

5.4.3 Single Dry Year

Table 5-9 shows the projected reliability of water supplies under single dry year conditions for five year increments between 2015 and 2035. Groundwater pumping and Littlerock Dam Reservoir diversions are expected to remain the same during a normal water year, single-dry year, and multiple-dry year. SWP water is the only water supply source the District expects to have variability during single-dry and multiple-dry water years.

Overall, SWP water delivery to the District was estimated to be available at 7 to 11 percent of the Districts Table A amount[21] for a single-dry year. To determine the single-dry year supplies for the District, the following assumptions were made:

- 7 percent of the District's Table A amount will be available in 2015
- 8 percent of the District's Table A amount will be available in 2020
- 9 percent of the District's Table A amount will be available in 2025
- 10 Percent of the District's Table A amount will be available in 2030
- 11 percent of the District's Table A amount will be available in 2035

As shown in Table 5-9, the District will have sufficient supply to meet its demand through 2035 with implementation of the new planned water supplies and assuming the availability of groundwater remains the same as it is today.

[21] State Water Project Delivery Reliability Report, Department of Water Resources, 2009

Table 5-9: Single Dry Supply and Demand Comparison (AF)

Supplies	2015	2020	2025	2030	2035
Current Water Supplies					
Groundwater	12,000	12,000	12,000	12,000	12,000
SWP	1,491	1,704	1,917	2,130	2,343
Littlerock Dam Reservoir	4,000	4,000	4,000	4,000	4,000
Planned Water Supplies					
Recycled Water	1,000	3,000	6,000	9,000	12,000
Groundwater Banking	8,254	9,648	10,541	13,935	14,828
Anticipated New Supplies	8,255	9,648	10,542	13,935	14,829
Total Supply	**35,000**	**40,000**	**45,000**	**55,000**	**60,000**
Total Demand[1]	**35,000**	**40,000**	**45,000**	**55,000**	**60,000**
Surplus/(shortage)	**0**	**0**	**0**	**0**	**0**

Note:
1. Demands are not expected to change during drought conditions; the region typically receives little rain, and with implementation of DMMs, water demands for irrigation do not increase in the District under single-dry year and multiple-dry year conditions.

5.4.4 Multiple Dry Years

Table 5-10 through Table 5-14 show the projected reliability of supplies under three consecutive multiple-dry year conditions for the five year increments between 2010 and 2035. Groundwater pumping and Littlerock Dam Reservoir diversions is expected to remain the same during a normal water year, single-dry year, and multiple-dry year. SWP water is the only water supply source the District expects to have variability during single-dry and multiple-dry water years.

Overall, SWP water to the District during a multiple-dry year event is estimated to be available 34 to 37 percent of the District's Table A[22] amount. To determine the multiple-dry year supplies for the District, the following assumptions were made:

- 34 percent of the District's Table A amount will be available in 2015
- 35 percent of the District's Table A amount will be available in 2020
- 36 percent of the District's Table A amount will be available in 2025
- 37 Percent of the District's Table A amount will be available in 2030
- 37 percent of the District's Table A amount will be available in 2035

As under single dry year conditions, groundwater banking and anticipated new supplies can be used to meet annual increases in demand (combined with conservation measures). As a result, there are no anticipated shortages under any multiple-year scenarios. These tables show that the District can provide reliable water supplies under both the single driest year and multiple dry year conditions.

[22] State Water Project Delivery Reliability Report, Department of Water Resources, 2009

Table 5-10: Projected Multiple Dry-Year (2013-2015) Water Supply and Demand (AF)

Supplies	2013	2014	2015
Current Water Supplies			
Groundwater	12,000	12,000	12,000
SWP	7,242	7,242	7,242
Littlerock Dam Reservoir	4,000	4,000	4,000
Planned Water Supplies			
Recycled Water	0	0	1,000
Groundwater Banking	4,879	5.429	5,379
Anticipated New Supplies	4,879	5.429	5,379
Total Supply	**33,000**	**34,100**	**35,000**
Total Demand[1]	**33,000**	**34,100**	**35,000**
Surplus/(shortage)	**0**	**0**	**0**

Note:
1. Demands are not expected to change during drought conditions; the region typically receives little rain, and with implementation of DMMs, water demands for irrigation do not increase in the District under single-dry year and multiple-dry year conditions.

Table 5-11: Projected Multiple Dry-Year (2018-2020) Water Supply and Demand (AF)

Supplies	2018	2019	2020
Current Water Supplies			
Groundwater	12,000	12,000	12,000
SWP	7,455	7,455	7,455
Littlerock Dam Reservoir	4,000	4,000	4,000
Planned Water Supplies			
Recycled Water	2,000	3,000	3,000
Groundwater Banking	5,822	5,872	6,772
Anticipated New Supplies	5,823	5,873	6,773
Total Supply	**37,100**	**38,200**	**40,000**
Total Demand[1]	**37,100**	**38,200**	**40,000**
Surplus/(shortage)	**0**	**0**	**0**

Note:
1. Demands are not expected to change during drought conditions; the region typically receives little rain, and with implementation of DMMs, water demands for irrigation do not increase in the District under single-dry year and multiple-dry year conditions.

Table 5-12: Projected Multiple Dry-Year (2023-2025) Water Supply and Demand (AF)

Supplies	2023	2024	2025
Current Water Supplies			
Groundwater	12,000	12,000	12,000
SWP	7,668	7,668	7,668
Littlerock Dam Reservoir	4,000	4,000	4,000
Planned Water Supplies			
Recycled Water	5,000	6,000	6,000
Groundwater Banking	6,716	6,766	6,666
Anticipated New Supplies	6,716	6,766	6,666
Total Supply	**42,100**	**43,200**	**45,000**
Total Demand[1]	**42,100**	**43,200**	**45,000**
Surplus/(shortage)	**0**	**0**	**0**

Note:
1. Demands are not expected to change during drought conditions; the region typically receives little rain, and with implementation of DMMs, water demands for irrigation do not increase in the District under single-dry year and multiple-dry year conditions.

Table 5-13: Projected Multiple Dry-Year (2028-2030) Water Supply and Demand (AF)

Supplies	2028	2029	2030
Current Water Supplies			
Groundwater	12,000	12,000	12,000
SWP	7,881	7,881	7,881
Littlerock Dam Reservoir	4,000	4,000	4,000
Planned Water Supplies			
Recycled Water	8,000	9,000	9,000
Groundwater Banking	7,609	7,609	11,059
Anticipated New Supplies	7,610	7,610	11,060
Total Supply	**47,100**	**48,100**	**55,000**
Total Demand[1]	**47,100**	**48,100**	**55,000**
Surplus/(shortage)	**0**	**0**	**0**

Note:
1. Demands are not expected to change during drought conditions; the region typically receives little rain, and with implementation of DMMs, water demands for irrigation do not increase in the District under single-dry year and multiple-dry year conditions.

Table 5-14: Projected Multiple Dry-Year (2033-2035) Water Supply and Demand (AF)

Supplies	2033	2034	2035
Current Water Supplies			
Groundwater	12,000	12,000	12,000
SWP	7,881	7,881	7,881
Littlerock Dam Reservoir	4,000	4,000	4,000
Planned Water Supplies			
Recycled Water	10,000	11,000	12,000
Groundwater Banking	12,159	12,159	12,059
Anticipated New Supplies	12,160	12,160	12,060
Total Supply	**58,200**	**59,200**	**60,000**
Total Demand[1]	**58,200**	**59,200**	**60,000**
Surplus/(shortage)	**0**	**0**	**0**

Note:
1. Demands are not expected to change during drought conditions; the region typically receives little rain, and with implementation of DMMs, water demands for irrigation do not increase in the District under single-dry year and multiple-dry year conditions.

Section 6
Demand Management Measures (DMMs)









Section 6 Demand Management Measures (DMMs)

The UWMPA identifies fourteen DMMs for urban water suppliers to address. In 1991, an MOU regarding Urban Water Conservation in California formed the CUWCC and BMPs were derived, in part from the original DMMs.

A description of each DMM that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, is presented below:

(A) Water survey programs for single-family residential and multifamily residential customers

(B) Residential plumbing retrofit

(C) System water audits, leak detection, and repair

(D) Metering with commodity rates for all new connections and retrofit of existing connections

(E) Large landscape conservation programs and incentives

(F) High-efficiency washing machine rebate programs

(G) Public information programs

(H) School education programs

(I) Conservation programs for commercial, industrial, and institutional accounts

(J) Wholesale agency programs

(K) Conservation pricing

(L) Water conservation coordinator

(M) Water waste prohibitions

(N) Residential ultra-low-flush toilet replacement programs

The District signed the MOU on August 14, 2008. Although the MOU was signed, the District was facing economical problems, which in 2009 resulted in reduced costs and staff furloughs. The conservation budget was cut drastically in 2008 and 2009, although rebate programs were approved and funded by the end of 2009.

The District is committed to implementing water conservation and water recycling programs to maximize sustainability in meeting future water needs for its customers.

The District's previous Urban Water Management Plan (2005 Plan), provided information regarding the District's conservation measures already in place and those that would improve the efficiency of water use within the District.

DWR has assigned an enhanced terminology to the BMPs. Accordingly; this section will refer to them as DMMs.

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

This program consists of offering water audits to residential customer. Audit components include reviewing water usage history with the customer, identifying leaks inside and outside, and recommending improvements.

The District performs water audits for multi-family and residential customers by appointment. In 2002, the District sent out letters to the largest multi-family customers with only a few customers requesting

water audits. After each audit the District sent each customer a follow up letter providing information on water saving techniques the customer could do to reduce water use. Water saving devices and materials were also given to each customer.

In 2008, the District started its HydroPoint WeatherTrak irrigation audit and smart controller installation program. The program includes an irrigation audit by HydroPoint Data System's certified technicians. The District identified 3000 customers that used over 65 units of water within the summer months, and by direct mail, asked them to participate in the smart controller program. The program included a water audit of the irrigation system, the installation and programming of the smart WeatherTrak controller. The cost to each customer is $14.99 per month on their water bill for 5 years. There are 25 customers set up with this program. The program slowed when the District approved a water budget rate structure in June 2009. The District may alter the HyrdoPoint program and charge customers less per month or nothing at all to audit and install the smart controller.

Since the District adopted the water budget rate structure, in June of 2009, it has accelerated the outreach and awareness of the importance of repairing the leaks to irrigation systems and other fixtures in District newsletters.

The District also provides regular free landscape workshops, gives out lists of water tolerant plants and provides customers with information on the newest techniques and equipment for better irrigation control. The Fair Board of the Antelope Valley sponsors the annual Home & Garden Show where the District gives out faucet aerators, showerheads, moisture meters, hose nozzles and other plumbing retrofits. The District attends other events through the year, which gives the District the opportunity to provide information and plumbing retrofits to its customers.

6.1.2 DMM 2- Residential Plumbing Retrofit

This program consists of installing physical devices to reduce the amount of water used or to limit the amount of water, which can be served to the customer. In accordance with State Law, low flow fixtures have been required on all new construction since 1978. In addition, State legislation enacted in 1990 requires all new buildings after January 1, 1992 to install Ultra-Low Flush Toilets (ULFT).

Several studies suggest that savings resulting from miscellaneous interior retrofit fixtures can range between 25 and 65 gpd per housing unit. The studies also suggest that installation of retrofit fixtures in older single-family homes tend to produce more savings, while newer multi-family homes tend to produce fewer saving per housing unit.

Water conservation kits for retrofitting existing plumbing fixtures are made available to District customers at the District office. The District gives out water conservation kits, showerheads, faucet aerators, moisture meters, hose nozzles and other items at all community events throughout the year and upon request.

6.1.3 DMM 3- System Water Audits, Leak Detection and Repair

A water audit is a process of accounting for water use throughout a water system in order to quantify the unaccounted-for water, now referred to as "nonrevenue water (NRW)". Water losses-is the difference between system input volume and authorized consumption, consisting of apparent losses and real losses.

The District purchased leak detection equipment a few years ago. A rapid rise in reported leaks occurred in 1989-1990, much of it was due to construction activity. At that time, it also became apparent that many of the older water mains were in need of replacement. As a result, a pipeline replacement program was instituted and funded by revenues from water sales

The District has also completed repairs to the existing leakage areas in the Palmdale Ditch, which carries

water from the Littlerock Dam to the Palmdale Lake. In 2000, a construction project was completed that repaired and lined several leak areas in the Ditch with bentonite. Bentonite is mixed with soil from the ditch is then re-compacted and forms a clay-like lining that reduces leakage. This procedure has reduced leakage from approximately 17-20 percent to 12 percent.

The District received a grant from the State Regional Water Quality Control Board for non-point pollution control (Prop 13). In 2009, the District completed the installation of 5,200 lineal ft. of 48-inch concrete pipe in the Palmdale Ditch, which will not only protect the ditch from local run off, but has prevented leakage. The Palmdale Ditch carries raw water from the Littlerock Reservoir to Lake Palmdale, where the turn out to the District's water treatment plant is located.

The District has continued with an aggressive maintenance replacement program, which identifies main replacement locations through documented leak history and age, type of materials and coatings of the pipe. System water audits indicate that unaccounted for water is less than 10 percent of production and has been calculated, in 2009, at 0.92.

The District uses AWWA's "Water Audit and Leak Detection Guidebook" as a source for water audits and the District's Water Loss Plan. The District has established a written program for leak detection.

6.1.4 DMM 4- Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections

This DMM requires water meters for all new constructions and billing by volume of use, as well as establishing a program for retrofitting any existing unmetered connections.

This DMM also calls for agencies to commence assigning reference evapotranspiration-based (ETo) water budgets to accounts with dedicated irrigation meters and provide water-use audits to accounts with mixed-use meters.

Meters are installed on all existing residential, commercial and landscape service connections in the District's service area. The District also requires meters on all new connections. During the sudden growth period in Palmdale, the District discovered a considerable number of poor quality and potentially inefficient water meters which were placed in service. The District then embarked upon a meter replacement program, which was completed by 1992.

The District currently has a water budget rate billing structure designed to promote water conservation, which was approved and adopted May 13, 2009. The water budget rates will be implemented over the next 5 years. Each customer has an allocation based on an indoor and an outdoor allocation.

In 2000, the District started a program that uses an automatic meter reading system. Between 2001-2004 the failure rate for the Ramar meters increased considerably. In 2005 the District turned to an automatic meter system using the Itron unit. The District has changed out approximately 22,767 meters within the District's service area with Itron remote reading meters. There are approximately 3,859 meters left to change out, which will happen within the next two years as the economy permits.

The District has established a written program for meter replacement based on size, type, and year installed and follows AWWA's guidelines.

6.1.5 DMM 5- Large Landscape Conservation Programs and Incentives

The City of Palmdale's park areas and Elementary and High School District's sports field areas are the large landscape customers within the District's service area.

In 1993, the City of Palmdale passed a Water Efficient Landscape Ordinance implementing low water use standards for commercial and industrial new landscapes. These include low water use plant pallets, requirements for re-circulating fountains and efficiency standards for irrigation systems.

In 2002, the District started free landscape workshops for the public including landscape contractors and maintenance professionals. The District provides workshops either on Thursday evenings or Saturday mornings to provide different times for customers to attend free landscape workshops.

The landscape booklet the District produced with help from other agencies, "Plants for the California High Desert" is also provided to large landscape users.

The District partnered with several other water agencies again, in 2008-2009 to produce a landscape CD that works with the landscape booklet. The landscape CD offers a plant data base, local Xeriscape designs, irrigation terminology, how to fix irrigation problems, how to water and other landscape information. The plant data base is also located on District's web site, www.palmdalewater.org.

6.1.6 DMM 6- High-Efficiency Washing Machine Rebate Program

The District approved its washing machine rebate program at the end of 2009. Each customer of the District that wishes to receive a rebate for the purchase of a water saving washing machine must buy one that has a water factor of 5.0 or less. The customer then fills out the rebate application and attaches the appropriate receipt. If approved, the rebate amount is a credit of $100.00 back on the customer's account in good standing.

6.1.7 DMM 7- Public Information Programs

This program consists of distributing information to the public through a variety of methods including brochures, radio and television, school presentations and videos, and web sites.

Public Events

Since 1995, the District has participated in the California Water Awareness Campaign (CWAC) sponsored by the Association of California Water Agencies (ACWA). The campaign advisory committee has several subcommittees, the District has served on the education and public relations/marketing committees at different times. Through the campaign and participation in public functions the District has expanded public awareness of the importance of water conservation, which has resulted in an increase in requests for pamphlets and information on methods of water conservation.

The District participates in several community functions such as:

- City of Palmdale's Fall Festival
- District's Water Awareness Fair
- Antelope Valley's Home and Garden Show and Fair
- Jethawks Stadium water awareness night
- City of Palmdale's eight weeks of "Thursday Night on the Square"
- Antelope Valley Airport's the Santa Fly-In
- City of Palmdale's Chamber Christmas Parade

The District sponsored a Water Fair & Festival for twelve years. Due to the economic climate in 2008 and 2009, the District cancelled the Water Fair & Festival. The water fair did provide information and education on water conservation. Landscape contractors provide talks, materials and literature on plants and irrigation products. Events such as the Dr. Wilderness show provide fun with water history and educational water facts. The fair was instrumental in providing the public with information on water conservation and it was a fun and interesting way for students to learn about their environment. The kid's tent was the focal point for the fair where educational games are played that introduce a variety of water conservation concepts and ideas. The vendor's tent gave the community an opportunity to be a part of the District's effort to inform the public about water conservation. Other water districts have joined the

District's efforts by either sponsoring books for the Youth Library or by having a booth at the fair. Landscape contractors and nurseries also provided the public with information on landscape conservation design and water tolerant plants.

Although the economy has forced the cancellation of the fair the District has continued to provide the same kind of information for District customers through brochures and the District's "Water News".

Aquadog

The District has benefited from an increasingly positive public image using the District's mascot, "Aquadog." Aquadog has been visible for the last nine years and has gained in popularity so much that he is in high demand. School functions and community events keep him in constant demand. Aquadog, and other mascots, have been used as tools for greater acceptance and appreciation of water conservation.



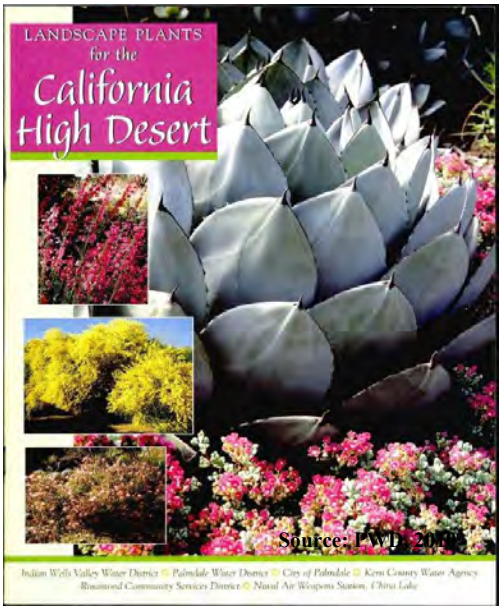
Source: PWD, 2010

Conservation Mascots: Aquadog, Dew Drop, and Wesley Weasel

Brochures

Brochures outlining water conservation measures are available at the District's public counter and by mail upon request. The District mails a quarterly newsletter to its customers entitled Water News (Appendix F). The newsletter describes water conservation articles, current capital improvement projects; Aquadog tips for water conservation and a water tolerant flower of the quarter, plus Board of Directors meetings and general information about the District.

In 2004-2005 the District partnered with Indian Wells Valley Water District, City of Palmdale, Kern County Water Agency, Rosamond Community Services District and the Naval Air Weapons Station in China Lake to produce a booklet, "Landscape Plants for the California High Desert." The booklet encourages customers to appreciate the beauty and character of plants that are in tune with the desert environment and are efficient water users. The booklet has a guide to the 7 steps of Xeriscape and simple landscape techniques showing step-by-step ways to create water conserving landscape designs.



Source: PWD, 2010

Cover of Landscape Plants for the California High Desert

The District and the City of Palmdale partnered in a marketing and media campaign plan to distribute the booklet throughout the Antelope Valley. Several Ads and story write-ups have been produced in the AV Press's "Lifestyle" magazine to notify residents of the booklet. The City and the District have been on the local TV station (Adelphia) to educate the public about conservation and the booklet. Booklets are given out at landscape workshops and other community events. The District provides a free booklet to all District customers and asks for a small donation to anyone outside the District. The landscape booklet,

"Landscape Plants for the California High Desert" has continued to be one of the most popular projects the District has produced and is used with the District's "Cash for Grass Program".

In 2008-2009 the District sought out partners for a landscape CD, "Beautiful High Desert Gardening" to compliment the landscape booklet. The District, L.A. County Water Works, Victorville Water District, City of Lancaster, Mojave Water Agency and the City of Palmdale sponsored the development and printing of the landscape CD. The City of Palmdale and the District have partnered to design and keep the landscape CD on each of the District's websites.

Website
In 2003/2004, the District presented its new web site (palmdalewater.org). The District's new web site is easy to use and full of information from water rates to the Kid's Corner. There are water saving tips, all about Xeriscape, water conservation facts, what's your water IQ, water quality and many other informational services. In 2005, a web brochure was produced to inform the public on all activities provided on the web site. The District is in the process of updating its current website to make it more user friendly with additional information.

6.1.8 DMM 8- School Education Program

This DMM requires water supplier to implement a school education program that includes providing educational materials and instructional assistance.

The District produces a yearly "Water Awareness Program" brochure that is sent out to every teacher in the Palmdale School District. This brochure outlines the District's upcoming contests and events for the year. The water awareness program is intended to develop an awareness of water conservation and protection of a valuable resource that will carry over into adult life. The school program provides tours to the District's treatment plant and Littlerock Dam, staff presentations on conservation and the environment, contests, and curriculum materials.

Over the last fifteen years, the District has sponsored several school contests for grades kindergarten through high school. In 2010, the District partnered with Quartz Hill Water District and LA County Water Works in a speech contest for high school students. Each school provided a first round winner and runner up. The final found was awarded at the District office and a grand prize winner received $500.00 cash. The District's sponsored contests have included; coloring, essay, jingle, and landscape in a box. The themes for the contests are designed to educate and bring water awareness to the forefront especially in the month of May, which is water awareness month. The panel of five judges is made up of two members of the District's Board of directors, two members of the Palmdale School Board of Trustees and one other community leader. Prizes are awarded for first, second and third place in each grade, with prizewinner for all grades. Each classroom participating also receives a token prize and water conservation material for each student.

In 2004, the District presented a new contest called Landscape-in-a-box for fourth through eighth grades. The contest was an overwhelming success. Many teachers used the contest as a science project. The contest was designed to present early education on the concept of the 7 steps to xeriscape or the 7 steps to good landscape design. The main concepts targeted are planning and design first followed by plant selection and grouping plants into appropriate watering zones. The District provided the box, soil, mulch, seeds, instructions on the 7 steps to xeriscape and samples of plants. This was a class plus contest which presented the winner with a cash prize and the class with a cash prize. Prizes are awarded for first, second and third place in each grade. The District added a few more judges that included landscape professionals. Winning entries are displayed at the District's Water Awareness Fair in May and other District functions.

The District supports the California Water Awareness Campaign in Sacramento which provides unit

booklets on water education. Education booklets are bought and distributed to teachers within the Palmdale School District. The District has formed a good relationship with the teachers and parents and provide information and materials for projects on request.

6.1.9 DMM 9- Conservation Programs for Commercial, Industrial, and Institutional Accounts

The District works closely with the Palmdale Chamber of Commerce in providing information to commercial, industrial and institutional accounts including participation in the annual Business Show Case.

The District sponsors landscape workshops that provide speakers and suppliers the opportunity to give out information on the newest landscape technology, which has included three-hour sessions on ET and smart based controllers for commercial use

In 2009-2010 the District approved several rebate programs for residential and commercial customers, which include; Cash for Grass, toilet rebates, MP Rotor rebates, and S.W.A.T tested smart controller rebates.

Within the District's service area there are only about 14 industrial and 129 institutional customers. The institutional customers are the elementary schools, the high schools and a few others. There are very little heavy industrial customers within the District's service area except for Lockheed Martin, which is the largest industrial customer. Several years ago Lockheed received a grant to change out all toilets to 1.6 gallons per flush. They were also able to upgrade their cooling towers.

The District has kept in touch with the superintendent of schools and now provides the Palmdale School District maintenance department with spread sheets with account data to help reduce indoor and outdoor water use. The elementary school district is providing the District with a list of locations to take advantage of the District's "Cash for Grass" program and the smart controller program.

The District is also working with Pete Knight High School and the Natural Solutions on a Pilot program to save water by providing natural solutions to irrigate and fertilize the sports areas. Pete Knight High School has a very sandy type of soil which uses approximately three times the amount of water other high schools use in the District's service area. By providing the proper natural nutrition the root balls will expand and hold the water longer at the surface.

6.1.10 DMM 10- Wholesale Agency Programs

This DMM applies to wholesale agencies and defines a wholesaler's role in terms of financial, technical, and programmatic assistance to its retail agencies implementing DMMs.

6.1.11 DMM 11- Conservation Pricing

According to American Water Works Association, water budgets are volumetric allotments of water to customers based on customer-specific characteristics and conservative resource standards.

The District currently has a water budget rate billing structure designed to promote water conservation, which was approved and adopted May 13, 2009. The water budget rates will be implemented over the next 5 years. Each customer has an allocation based on an indoor and an outdoor allocation.

The indoor allocation is based on 60 gallons of water per day per person with four persons being the default number. If the customer has more than four people living within the residence they can fill out a variance form with proper identification to receive an additional allotment.

The outdoor allocation is based on irrigable area (IA) determined by the total square footage of the parcel from the assessor's data and the amount of water required to maintain a healthy landscape. For residential customers the irrigable area is 45 percent of the total lot area as if it was watered with cool season grass. For irrigation customers the irrigable area is assumed to be 100 percent of the total parcel area.

The amount of water needed for irrigation is based on:

- Weather: determined by evapotranspiration (ETo) data gathered from local weather station, Station 197.
- Landscape factor: the state California code regulations Title 23, Section 491, provides a landscape factor ("LF") adjustment of 70 percent to the amount of water needed for irrigation to encourage conservation.
- Conservation factor: approved by the District Board to account for water supply shortages (currently set at 100 percent).

To calculate customer-specific monthly water budget allocation:

- Indoor allocation= GPCD*Household Size*days per billing cycle/ (749 gallons/ccf)
- Outdoor allocation= (ETo/(12 in/ft) * IA*LF* conservation factor/ (100 ft^3/ 1 ccf)

In November of 2000, the District established a surcharge to pass on the increased costs of delivering water to customers in higher elevation zones. This surcharge continues under the new rate structure.

Figure 6-1: District's Water Budget Rate Structure

Classifications	Residential (SFR)	Commercial	Irrigation Only
	Multi-Family (MFR)	Industrial	
		Institutional	
Water Budget Allocation	SFR: Indoor + Outdoor MFR: 3-yr Historical Average	CII: 3-yr Historical Average	Irrigable area (IA) 100 percent
Tier Definitions	***SFR/MFR***	***CII***	***IRR***
	Percent of Water Budget Allocation		
Tier 1	0-100%	0-100%	0-100%
Tier 2	100-125%	100-130%	100-110%
Tier 3	125-150%	125-160%	120-125%
Tier 4	150-175%	150-190%	130-150%
Tier 5	Above 175%	Above 190%	Above 150%
Notes: 1. Rates effective since May 13, 2009			

6.1.12 DMM 12- Water Conservation Coordinator

The Special Projects Coordinator Position was hired in 1992 to comply with Demand Management Practices. In 2003-2004, the District change the Special Projects Coordinator position to Water Conservation Manager and hired a Water Conservation Aid to enhance water conservation activities.

In addition, staff training is a key element of water conservation training. Water auditing, irrigation planning, landscape design, public relations, marketing courses and water conservation certifications are encouraged for all staff members.

6.1.13 DMM 13- Water Waste Prohibition

In 1991, the District Board of Directors enacted several resolutions adopting water conservation polices and requirements, having both voluntary and mandatory provisions and penalties for violations. The resolutions provide for prohibition of water wastage at all times, not only in times of drought. This is the District's Waste of Water Policy, Appendix O.

In 2005, the Board of Directors approved a "Don't Waste Water Hot-Line" to give the public a number to actively use when they see water being wasted due to: visible over lawn watering practices, broken sprinkler heads, or incorrectly directed sprinkler heads and broken pipes leading to street run off. As a

discipline, the District will implement its Water Waste policy set forth in Appendix O of District's Rules & Regulations.

In 2007-2009 the District enacted several additional resolutions adopting water conservation requirements due to drought conditions. On May 23, 2007- the District Board of Directors adopted resolution No. 07-04 adopting a voluntary water conservation program. On August 29, 2007- the District Board of Directors adopted Resolution No.07-9 declaring a water shortage emergency condition and adopting regulations on the delivery and consumption of water for public use. On March 11, 2009, the Board of Directors adopted and approved Resolution No. 09-04 declaring a water shortage emergency condition and adopting regulations and restrictions on the delivery and consumption of water for public use. On December 9, 2009 the Board of Directors adopted and approved Resolution No. 09-19 declaring water conservation regulations and amends the mandatory water conservation measures in resolution No. 09-04. The District's new water budget allocation based rate has reduced water demand although the waste of water policy is still in effect. The resolution also sets an ultimate conservation goal of reduction in water use of 20 perecnt by 2020.

In 2008, the District hired two temporary employees to monitor the waste of water during the summer months. Letters were given to customers that were not following the District's "Waste of Water Policy". Each letter included the "Waste of Water Policy" and the resolutions on drought conditions. The letter explained that continued waste of water could result in a fee or disconnection of water service.

6.1.14 DMM 14- Residential Ultra-Low-Flush Toilet Replacement Programs

State legislation requires the installation of efficient plumbing in new construction, and effective 1994 require that only ULFTs be sold in California. Subsequently, homes constructed since 1994 in the District have ULFTs.

In 2009, the District started a toilet rebate program for residential and commercial customers. The toilet rebates are a credit back on the customers water bill if they provide and install a HET, 1.28 gallons per flush (GPF) or a Dual Flush Toilet. Applications are available at the District office or on the District's website. Customers must complete the application and include a proper receipt. If approved, the customer will receive a credit back on their water bill of $60.00 per toilet. If the customer has an ULFT and wants to change it out for an HET, 1.288 gpd, with the proper receipt, the customer will receive a $30.00 credit back on their water bill.

Appendix A
UWMP Act









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

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

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

WATER CODE
SECTION 10610-10610.4

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

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

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

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

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

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

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

(6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.

(7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.

(8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.

(9) The quality of source supplies can have a significant impact

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

10610.4. The Legislature finds and declares that it is the policy of the state as follows:
(a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.
(b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.
(c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

WATER CODE
SECTION 10611-10617

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

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

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

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

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

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

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

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

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

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

WATER CODE
SECTION 10620-10621

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

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

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

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

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

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

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

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

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

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

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

WATER CODE
SECTION 10630-10634

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

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

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

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

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

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

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

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

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

(A) An average water year.

(B) A single dry water year.

(C) Multiple dry water years.

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

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

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

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

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

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

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

(A) Water survey programs for single-family residential and multifamily residential customers.

(B) Residential plumbing retrofit.

(C) System water audits, leak detection, and repair.

(D) Metering with commodity rates for all new connections and retrofit of existing connections.

(E) Large landscape conservation programs and incentives.

(F) High-efficiency washing machine rebate programs.

(G) Public information programs.

(H) School education programs.

(I) Conservation programs for commercial, industrial, and institutional accounts.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(i) Compliance on an individual basis.

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

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

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

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

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

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

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

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

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

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

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

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

sequence for the agency's water supply.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

WATER CODE SECTION 10635

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

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

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

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

WATER CODE
SECTION 10640-10645

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

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

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

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

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

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

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

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

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

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

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

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

WATER CODE
SECTION 10650-10656

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

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

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

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

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

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

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

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

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

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

Appendix B
2010 UWMP Checklist









Appendix B Urban Water Management Plan checklist, organized by subject

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
PLAN PREPARATION				
4	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	10620(d)(2)		Section 1.3
6	Notify, at least 60 days prior to the public hearing on the plan required by Section 10642, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Any city or county receiving the notice may be consulted and provide comments.	10621(b)		Appendix C
7	Provide supporting documentation that the UWMP or any amendments to, or changes in, have been adopted as described in Section 10640 et seq.	10621(c)		N/A
54	Provide supporting documentation that the urban water management plan has been or will be provided to any city or county within which it provides water, no later than 60 days after the submission of this urban water management plan.	10635(b)		Appendix C
55	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	10642		Appendix C
56	Provide supporting documentation that the urban water supplier made the plan available for public inspection and held a public hearing about the plan. For public agencies, the hearing notice is to be provided pursuant to Section 6066 of the Government Code. The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water. Privately-owned water suppliers shall provide an equivalent notice within its service area.	10642		Appendix D
57	Provide supporting documentation that the plan has been adopted as prepared or modified.	10642		Appendix E
58	Provide supporting documentation as to how the water supplier plans to implement its plan.	10643		Throughout All Sections of Document

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
59	Provide supporting documentation that, in addition to submittal to DWR, the urban water supplier has submitted this UWMP to the California State Library and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. This also includes amendments or changes.	10644(a)		Appendix C
60	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the urban water supplier has or will make the plan available for public review during normal business hours	10645		Appendix C
SYSTEM DESCRIPTION				
8	Describe the water supplier service area.	10631(a)		Section 2
9	Describe the climate and other demographic factors of the service area of the supplier	10631(a)		Section 2.3
10	Indicate the current population of the service area	10631(a)	Provide the most recent population data possible. Use the method described in "Baseline Daily Per Capita Water Use." See Section M.	Section 2.4
11	Provide population projections for 2015, 2020, 2025, and 2030, based on data from State, regional, or local service area population projections.	10631(a)	2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	Section 2.4
12	Describe other demographic factors affecting the supplier"s water management planning.	10631(a)		Section 2.3.1
SYSTEM DEMANDS				
1	Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	10608.20(e)		Section 3.3
2	*Wholesalers:* Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. *Retailers:* Conduct at least one public hearing that includes general discussion of the urban retail water supplier"s implementation plan for complying with the Water Conservation Bill of 2009.	10608.36 10608.26(a)	Retailers and wholesalers have slightly different requirements	Appendix D

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
3	Report progress in meeting urban water use targets using the standardized form.	10608.40		N/A
25	Quantify past, current, and projected water use, identifying the uses among water use sectors, for the following: (A) single-family residential, (B) multifamily, (C) commercial, (D) industrial, (E) institutional and governmental, (F) landscape, (G) sales to other agencies, (H) saline water intrusion barriers, groundwater recharge, conjunctive use, and (I) agriculture.	10631(e)(1)	Consider „past" to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years.	Section 3.2.2
33	Provide documentation that either the retail agency provided the wholesale agency with water use projections for at least 20 years, if the UWMP agency is a retail agency, OR, if a wholesale agency, it provided its urban retail customers with future planned and existing water source available to it from the wholesale agency during the required water-year types	10631(k)	Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030.	Section 5.4
34	Include projected water use for single-family and multifamily residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)		Section 3.2.3
SYSTEM SUPPLIES				
13	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, and 2030.	10631(b)	The „existing" water sources should be for the same year as the "current population" in line 10. 2035 and 2040 can also be provided.	Section 4
14	Indicate whether groundwater is an existing or planned source of water available to the supplier. If yes, then complete 15 through 21 of the UWMP Checklist. If no, then indicate "not applicable" in lines 15 through 21 under the UWMP location column.	10631(b)	Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other.	Section 4
15	Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	10631(b)(1)		Section 4.2.3
16	Describe the groundwater basin.	10631(b)(2)		Section 4.2
17	Indicate whether the groundwater basin is adjudicated? Include a copy of the court order or decree.	10631(b)(2)		Section 4.2.2, Appendix H

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
18	Describe the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. If the basin is not adjudicated, indicate “not applicable” in the UWMP location column.	10631(b)(2)		N/A
19	For groundwater basins that are not adjudicated, provide information as to whether DWR has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition. If the basin is adjudicated, indicate “not applicable” in the UWMP location column.	10631(b)(2)		Section 4.2.4
20	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	10631(b)(3)		Section 4.2
21	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	10631(b)(4)	Provide projections for 2015, 2020, 2025, and 2030.	Section 4.2.5
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)		Section 4.8
30	Include a detailed description of all water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years, excluding demand management programs addressed in (f)(1). Include specific projects, describe water supply impacts, and provide a timeline for each project.	10631(h)		Section 4.7, Section 5.4
31	Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and groundwater.	10631(i)		Section 4.6
44	Provide information on recycled water and its potential for use as a water source in the service area of the urban water supplier. Coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	10633		Section 4.5
45	Describe the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	10633(a)		Section 4.5.1 and 4.5.2

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
46	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	10633(b)		Section 4.5.2
47	Describe the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633(c)		Section 4.5
48	Describe and quantify the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633(d)		Section 4.5
49	The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	10633(e)		Section 4.5.3
50	Describe the actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633(f)		Section 4.5.4
51	Provide a plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633(g)		Section 4.5
WATER SHORTAGE RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING [b]				
5	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	10620(f)		Throughout All Sections of Document
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage and provide data for (A) an average water year, (B) a single dry water year, and (C) multiple dry water years.	10631(c)(1)		Section 5.4
23	For any water source that may not be available at a consistent level of use - given specific legal, environmental, water quality, or climatic factors - describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631(c)(2)		Section 5.3
35	Provide an urban water shortage contingency analysis that specifies stages of action, including up to a 50-percent water supply reduction, and an outline of specific water supply conditions at each stage	10632(a)		Section 5.1

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
36	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.	10632(b)		Section 5.4
37	Identify actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.	10632(c)		Section 5.1
38	Identify additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.	10632(d)		Section 5.1
39	Specify consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.	10632(e)		Section 5.1
40	Indicated penalties or charges for excessive use, where applicable.	10632(f)		Section 5.1
41	Provide an analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.	10632(g)		Section 5.1
42	Provide a draft water shortage contingency resolution or ordinance.	10632(h)		Appendix F
43	Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)		Section 5.1
52	Provide information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments, and the manner in which water quality affects water management strategies and supply reliability	10634	For years 2010, 2015, 2020, 2025, and 2030	Section 5.2

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
53	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. Base the assessment on the information compiled under Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.	10635(a)		Section 5.4
DEMAND MANAGEMENT MEASURES				
26	Describe how each water demand management measures is being implemented or scheduled for implementation. Use the list provided.	10631(f)(1)	Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules.	Section 6
27	Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMP.	10631(f)(3)		Section 6
28	Provide an estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the ability to further reduce demand.	10631(f)(4)		Section 6
29	Evaluate each water demand management measure that is not currently being implemented or scheduled for implementation. The evaluation should include economic and non-economic factors, cost-benefit analysis, available funding, and the water suppliers' legal authority to implement the work.	10631(g)	See 10631(g) for additional wording.	Section 6
32	Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29.	Appendix G

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

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

Appendix C
Notice of Preparation









PALMDALE WATER DISTRICT

2029 East Avenue Q • Palmdale, California 93550 • Telephone (661) 947-4111
Fax (661) 947-8604
www.palmdalewater.org

Board of Directors

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GORDON G. DEXTER
Division 2

LINDA J. GODIN
Division 3

RAUL FIGUEROA
Division 4

STEVE R. CORDOVA
Division 5

LAGERLOF, SENECAL, GOSNEY & KRUSE LLP
Attorneys

ACWA

April 12, 2011

Mr. Robert Neal
City of Lancaster
Public Works Department
44933 Fern Avenue
Lancaster, CA 93534

Subject: Urban Water Management Plan Update

Existing state law requires each urban water supplier that serves three thousands or more customers, or supplies 3000 or more acre feet, to prepare and adopt an urban water management plan, and up-date that plan at least once every 5 years. The Palmdale Water District is currently preparing an update to its Urban Water Management Plan (UWMP), which was last adopted in December 19, 2005. A copy of the 2005 UWMP is available at the Palmdale Water District website http://www.palmdalewater.org/IS/RP/future.html. The UWMP documents the District's plans to ensure adequate water supplies to meet existing and future demands for water under a range of water supply conditions, including water shortages.

In conformance with California Water Code Division 6, Part 2.6, Section 10621, Palmdale Water District is notifying any city or county within which the District provides water service that the UWMP is being reviewed and updated. It is anticipated that the draft plan will be available for public review in May. The final plan will be submitted to the California Department of Water Resources by July 1, 2011.

Please contact me at (661) 947-4111, extension 105 if you have any questions about the District's Urban Water Management Plan update.

Sincerely,

Jon Pernula
Water and Energy Resource Director
Palmdale Water District

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Attorneys

ACWA

April 12, 2011

Mr. Mike Mischel
City of Palmdale
Public Works Department
38300 Sierra Highway
Palmdale, CA 93550

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Palmdale Water District

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April 12, 2011

David Rydman
Water Resources Manager
LA County Waterworks District
Los Angeles County Department of Public Works
900 S. Fremont Avenue
Alhambra, CA 91803

Subject: Urban Water Management Plan Update

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Sincerely,

Jon Pernula
Water and Energy Resource Director
Palmdale Water District

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STEVE R. CORDOVA
Division 5

April 19, 2011

Los Angeles County Dept of Regional Planning
LDCC Section
320 West Temple ST. 13th floor
Los Angeles, Ca. 90012

Subject: Urban Water Management Plan Update

Existing state law requires each urban water supplier that serves 3000 or more customers, or supplies 3000 or more acre feet, to prepare and adopt an urban water management plan at least once every 5 years. The Palmdale Water District is currently preparing an update to its Urban Water Management Plan (UWMP), which was last adopted in December 19, 2005. A copy of the 2005 UWMP is available at the Palmdale Water District website http://www.palmdalewater.org/IS/RP/future.html. The UWMP documents the District's plans to ensure adequate water supplies to meet existing and future demands for water under a range of water supply conditions, including water shortages.

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Please contact me at (661) 947-4111, extension 105 if you have any questions about the District's Urban Water Management Plan update.

Sincerely,

Jon Pernula,
Water and Energy Resource Manager
Palmdale Water District

Appendix D
Notice of Public Hearing









NOTICE OF PUBLIC HEARING
FOR
ADOPTION OF THE
2010 URBAN WATER
MANAGEMENT PLAN
FOR
PALMDALE WATER DISTRICT
(California Water Code §10642)

NOTICE IS HEREBY GIVEN that Palmdale Water District will hold a public hearing on June 22, 2011, at 7:00 p.m., or as soon thereafter as the matter may be heard, in the Board room of Palmdale Water District's office at 2029 East Avenue Q, Palmdale, California 93550, to consider adoption of the 2010 Urban Water Management Plan for Palmdale Water District. The Plan has been prepared in compliance with the Urban Water Management Plan Act *(California Water Code §§10620-10656)*. Copies of the Plan are available for public review during normal business hours at the District office located at 2029 East Avenue Q, Palmdale, California 93550, and at the public libraries located in the City of Palmdale.

In addition, the document may be viewed on the District website at: http:\\www.PalmdaleWater.org.

For further information regarding this matter, you may contact Mr. Jon Pernula, Water and Energy Resources Manager at Palmdale Water District, at (661) 947-4111, Extension 105.

Written comments are requested by the close of business on June 22, 2011, but in all events by the end of the public hearing.

Publish: 6/8, 6/15, 2011

Appendix E
Resolution for UWMP Adoption









PALMDALE WATER DISTRICT
RESOLUTION NO. 11-5

RESOLUTION ADOPTING, DIRECTING FILING OF, AND IMPLEMENTING THE PALMDALE WATER DISTRICT 2010 URBAN WATER MANAGEMENT PLAN

WHEREAS, the California Legislature enacted Assembly Bill 797 during the 1983-1984 Regular Session of the California Legislature (Water Code Section 10610 et.seq.) known as the Urban Water Management Plan Act (the Act).

WHEREAS, the Act mandates that every urban water supplier of water providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, prepare, and every five (5) years thereafter update, its Urban Water Management Plan, (the Plan), the primary objective of which is to plan for the conservation and efficient use of water.

WHEREAS, the latest update of the Plan was due at the end of 2010, but a six-month extension was granted by the Legislature for submittals of the 2010 Urban Water Management plan to provide time for urban water suppliers to address Senate Bill X7-7 (SB X7-7), which requires water retailers like the Palmdale Water District to develop plans to reduce per capita water use by 20 percent by the year 2020, with an interim target of a 10 percent reduction by 2015; and

WHEREAS, the Palmdale Water District prepared and filed a Plan with the California Department of Water Resources in December 1985, December 1990, December 1995, December 2000, and December 2005; and

WHEREAS, considering the six (6) month extension granted by the Legislature, the 2010 Plan should be adopted by July 1, 2011, and filed with the California Department of Water Resources, the California State Library and the City of Palmdale within thirty days of adoption; and

WHEREAS, the Act further requires that the adopted Plan be available for public review during normal business hours for thirty (30) days following its submission to the Department of Water Resources; and

WHEREAS, as an urban water supplier providing water service to over 109,000 customers, Palmdale Water District is subject to the Act and has, therefore, prepared and circulated for public view a Draft 2010 Urban Water Management Plan in compliance with the requirements of the Act, and a properly noticed public hearing regarding the proposed Plan was duly held by the Palmdale Water District on June 22, 2011.

NOW, THEREFORE, BE IT RESOLVED by the Board of the Directors of the Palmdale Water District as follows:

1. The 2010 Urban Water Management Plan is hereby approved and adopted.

2. The General Manager is hereby authorized and directed to file the Plan with the California Department of Water Resources, the California State Library and the City of Palmdale within thirty days of adoption in accordance with the Act.

3. When required by conditions contained in the Plan, the General Manager is authorized to declare a Water Shortage Emergency and to implement water conservation programs as detailed in the Plan, including recommendations to the Board of Directors regarding necessary procedures, rules and regulations to carry out effective and equitable water conservation programs.

4. The General Manager and staff are hereby further authorized and directed to take such other and further actions as may be reasonably necessary to carry out the purposes and intent of the Plan.

PASSED AND ADOPTED at the regular meeting of the Board of Directors held on June 22, 2011.

GORDON DEXTER, President,
Palmdale Water District Board of Directors

ATTEST:

RAUL FIGUEROA, Secretary,
Palmdale Water District Board of Directors

Appendix F
Water Shortage Contingency Plan Resolutions









3/11/2009

PALMDALE WATER DISTRICT
RESOLUTION NO. 09-04

RESOLUTION OF THE BOARD OF DIRECTORS OF PALMDALE WATER DISTRICT DECLARING A WATER SHORTAGE EMERGENCY CONDITION AND ADOPTING REGULATIONS AND RESTRICTIONS ON THE DELIVERY AND CONSUMPTION OF WATER FOR PUBLIC USE

WHEREAS, Palmdale Water District ("District") is a water district empowered to provide water service within District boundaries; and

WHEREAS, due to persistent inadequate rainfall, California is suffering from a chronic and continuing water shortage which is predicted to severely impact the District's service area; and

WHEREAS, precipitation remains substantially below normal locally, particularly in the watersheds of the sources of water supply serving Southern California and many communities in the state are suffering water shortages; and

WHEREAS, the District relies on rainfall and water supply from the State Water Project to meet its water needs; and

WHEREAS, State Water Project deliveries to the District have been reduced by eighty-five percent (85%) in response to the continuing arid conditions and could be exacerbated further by legal restrictions on the flow of State Water Project water through the Bay-Delta; and

WHEREAS, these arid conditions and reduced supplies from the State Water Project have led to a greater reliance on groundwater to meet the needs of District customers with the corresponding depletion of groundwater supplies in the District's service area; and

WHEREAS, the District's ability to rely upon and entitlement to utilize groundwater is under attack in a basin adjudication action now pending in the court system; and

WHEREAS, with increasing water demand and limitations on water supplies, it is anticipated that the District will not have enough water to meet customer demand for water for the remainder of this year; and

WHEREAS, the ordinary demands and requirements of the District customers cannot be satisfied without depleting the available water supply to such an extent that there would be insufficient available water for human consumption, sanitation and fire protection; and

WHEREAS, following due public notice, the conduct of a public hearing and the making of findings as required by law, the District has the power and authority to adopt mandatory water conservation measures within its boundaries; and

District, to conserve the water supply for the greatest public benefit with particular regard to domestic use, sanitation, and fire protection.

Section 3: Authorization to Implement Restrictions on Water Consumption: The Board of Directors of the District hereby authorizes the General Manager of the District to take specific steps to meet water conservation goals and avoid an imminent danger that the District will be unable to supply sufficient water for human consumption, sanitation, and fire protection, to implement the regulations and restrictions on water consumption as hereinafter set forth.

Section 4: Conservation Goal and Authorized Actions. The initial conservation goal of the District is a reduction in water use of ten percent (10%), which goal is subject to adjustment from time to time based upon demands, supplies, and conservation, with an ultimate conservation goal of a reduction in water use of 20% by 2020. The General Manager is authorized to implement Action 1, Paragraphs 1 through 9 of this resolution to meet said conservation goal.

Action 1. Mandatory Water Conservation Regulations. The General Manager shall take all steps necessary to advise the District's customers of the following mandatory regulations and to enforce them in accordance the District's existing Waste of Water Policy:

1. There shall be no hose washing of sidewalks, walkways, buildings, walls, patios, driveways, parking areas or other paved surfaces, or walls, except to eliminate conditions dangerous to public health or safety or when required as surface preparation for the application of architectural coating or painting.

2. Washing of motor vehicles, trailers, boats and other types of equipment shall be done only with a hand-held nozzle for quick rinses, except that washing may be done with reclaimed wastewater or by a commercial car wash using recycled water.

3. No water shall be used to clean, fill or maintain levels in decorative fountains, ponds, lakes or other similar aesthetic structures unless such water is part of a closed recycling system.

4. No restaurant, hotel, cafe, cafeteria or other public place where food is sold, served or offered or sale, shall serve drinking water to any customer unless expressly requested and shall display a notice to that effect.

5. All water users shall promptly repair all leaks from indoor and outdoor plumbing fixtures.

6. No lawn, landscape, or other turf area shall be watered more often than three (3) days per week and no more often than every other day

nor during the hours between 10:00 a.m. and 8:00 p.m. Water days will be set as follows: addresses ending in an even number starting on Monday, and; addresses ending in an odd number starting on Tuesday.

Exemptions:

1. No watering hour restrictions during the months of November, December, January, February, and March. Watering can occur between the hours of 10:00 a.m. and 8:00 p.m.

2. The District will allow an exemption from the watering schedule if an ET based controller is installed and operating. *The ET Controller Exemption Form* must be completed and the installation verified by a licensed landscape architect or PWD staff.

7. No water users shall cause or allow the water to run off landscape areas into adjoining streets, sidewalks, or other paved areas due to incorrectly directed or maintained sprinklers or excessive watering. If cited, random acts of vandalism will be considered in any appeal.

8. The owner and manager of every hotel, motel, inn, guest house, bed and breakfast facility, and short-term commercial lodging shall post a notice of such shortage and any necessary compliance measures.

9. Commercial nurseries, golf courses, parks, school yards, and other public open space, and landscaped areas shall be prohibited from watering lawn, landscaping, and other turf areas more often than five days per week and between the hours of 10:00 a.m. and 8:00 p.m., except that there shall be no restriction on watering utilizing reclaimed water or where public use requires a modified and approved watering schedule.

Exemptions:

1. No watering hour restrictions during the months of November, December, January, February, and March. Watering can occur between the hours of 10:00 a.m. and 8:00 p.m.

2. The District will allow an exemption from the watering schedule if an ET based controller is installed and operating. *The ET Controller Exemption Form* must be completed and the installation verified by a licensed landscape architect or PWD staff.

3. Watering schedules must be adhered to at all times. The District requires advance written notice of any maintenance activities requiring water use between the hours of 10:00 a.m. and 8:00 p.m.

10. The use of water from fire hydrants shall be limited to fire fighting and related activities and other nses of water for municipal purposes shall be limited to activities necessary to maintain the public health, safety, and welfare. Ongoing water system improvement projects qualifying with the exemption available under Action 2 are also exempt under this section and may continue to use construction meters in accordance with standard District policy.

Action 2: Moratorium on New Connections: Upon specific authorization by the Board of Directors, the General Manager shall impose a moratorium on new connections to the District's water system. Such moratorium shall take effect immediately pursuant to the authority authorized by this Resolution. Water system improvement projects that include new connections, have begun construction, and have not been activated at the time this resolution is effective can be exempted. The exemption is based on certification of the installation, proper programming, and proper operation of District-approved E/T irrigation system controller(s) for all irrigation systems in the project. These include those irrigation systems with separate water service connections and those connected to water service connections used for both irrigation and domestic purposes.

Action 3: Mandatory Water Rationing: Upon specific authorization by the Board of Directors, the General Manager shall the General Manager shall implement a phased water rationing to protect the water supply of the District and to guarantee adequate supply for domestic use, sanitation, and fire protection, as follows:

1. Stage 1: Water Rationing: A twenty percent (20%) reduction in water deliveries to all District customers.

2. Stage 2: Water Rationing: A thirty percent (30%) reduction in water deliveries to all District customers.

3. Stage 3: Water Rationing: A forty percent (40%) reduction in water deliveries to all District customers.

a) A Base water use shall be established for each residential, commercial and industrial consumer of the Palmdale water District corresponding to the amount of water delivered to that consumer during the last annual water year ending on December 31, 2006.

b) Water consumption by a consumer which is in excess of the specified conservation percentage of the base water use, as described in section 5 will be charged at a rate of $3.00 per 100 cubic feet of water, or fraction thereof, in addition to the current base water rate.

Section 5: Duration of Water Emergency: The regulations, restrictions, and actions set forth herein shall take full force and effect immediately upon authorization by the Board of Directors and shall remain in full force and effect until the supply of water available for distribution within the District service area has been replenished or augmented, as determined by the General Manager such that a sufficient supply of water is available for human consumption, sanitation, and fire protection, or until further action by the Board of Directors.

Section 6: Appeal: Decisions made by the District under the regulations set forth in this Resolution may be appealed by consumers in accordance with the procedure set forth in the District Rules and Regulations.

Section 7: Violation: A violation of the regulations and restrictions set forth herein may result in a fine and/or result in the discontinuance of service to consumers willfully violating the conservation measures set forth herein or such other penalty or restriction as may be allowed by law.

Section 8: Severability: If any portion of this Resolution is found to be unconstitutional or invalid, the District hereby declares that it would have enacted the remainder of this Resolution regardless of the absence of any such valid part.

Section 9: Effective Date: This Resolution shall take effect immediately.

BE IT FURTHER RESOLVED, that the Board of Directors finds that the provisions of this Resolution are exempt from the provisions of the California Environmental Quality Act as an action to mitigate emergency conditions and as a rate setting measure pursuant to Public Resources Code §21080(b)(4) and (8); and

BE IT FURTHER RESOLVED, that this resolution supersedes and replaces Resolution No. 07-09 adopted by the District on November 14, 2007, which resolution is hereby rescinded and of no further force or effect.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of Palmdale Water District held on March 11, 2009.

President
Palmdale Water District

Secretary
Palmdale Water District

8/29/07

PALMDALE WATER DISTRICT
RESOLUTION NO. 07-09

RESOLUTION OF THE BOARD OF DIRECTORS OF PALMDALE WATER DISTRICT DECLARING A WATER SHORTAGE EMERGENCY CONDITION AND ADOPTING REGULATIONS AND RESTRICTIONS ON THE DELIVERY AND CONSUMPTION OF WATER FOR PUBLIC USE

WHEREAS, Palmdale Water District ("District") is a water district empowered to provide water service within District boundaries; and

WHEREAS, due to persistent inadequate rainfall, California is suffering from a chronic and continuing water shortage which is predicted to severely impact the District's service area; and

WHEREAS, precipitation remains substantially below normal locally, particularly in the watersheds of the sources of water supply serving Southern California and many communities in the state are suffering water shortages; and

WHEREAS, the District relies on rainfall and water supply from the State Water Project to meet its water needs; and

WHEREAS, State Water Project deliveries to the District have been reduced by forty percent (40%) in response to the continuing arid conditions and could be exacerbated further by legal restrictions on the flow of State Water Project water through the Bay-Delta; and

WHEREAS, these arid conditions and reduced supplies from the State Water Project have led to a greater reliance on groundwater to meet the needs of District customers with the corresponding depletion of groundwater supplies in the District's service area; and

WHEREAS, the District's ability to rely upon and entitlement to utilize groundwater is under attack in a basin adjudication action now pending in the court system; and

WHEREAS, with increasing water demand and limitations on water supplies, it is anticipated that the District will not have enough water to meet customer demand for water for the remainder of this year; and

WHEREAS, the ordinary demands and requirements of the District customers cannot be satisfied without depleting the available water supply to such an extent that there would be insufficient available water for human consumption, sanitation and fire protection; and

REVISED
NOVEMBER 14, 2007

WHEREAS, following due public notice, the conduct of a public hearing and the making of findings as required by law, the District has the power and authority to adopt mandatory water conservation measures within its boundaries; and

WHEREAS, if following the District's implementation of both a voluntary water conservation program and water conservation regulations, it is determined such measures have not resulted in the necessary reduction in consumption, further and more severe measures may be required; and

WHEREAS, due to the critical water shortage, the District now finds it necessary to adopt additional water conservation measures, including mandatory water rationing and a moratorium on new connections, which measures shall be implemented should present conditions continue to the point where there is imminent danger of insufficient water available for human consumption, sanitation and fire protection.

NOW, THEREFORE, BE IT RESOLVED, by the Board of Directors of the Palmdale Water District as follows:

Section 1: Findings: The Board of Directors of the District hereby finds and declares as follows:

1) The State Water Project water available to the District has been reduced by forty percent (40%), with no guarantee that the District will receive emergency water deliveries.

2) Continued production of water from the groundwater basin without proportionate recharge of the basin through stream runoff, rainfall and snow melt, could result in irreparable damage to the storage capacity of the basin aquifers and impair the long-term water delivery capability of the District;

3) Voluntary water conservation measures have not resulted in the necessary reduction in consumption;

4) At present the anticipated water available to the District is insufficient to meet anticipated demands;

5) Should existing circumstances continue, or should the District lose its water production capacity, there will be insufficient water available for human consumption, sanitation and fire protection;

6) Any additional connections to the District's system would create additional burden and demand on the system that could not be met by existing supplies, and would further endanger the District's ability to provide water for human consumption, sanitation and fire protection.

REVISED
NOVEMBER 14, 2007

Section 2: Declaration of Water Shortage Emergency: The Board of Directors of the District, in accordance with the foregoing findings, hereby determines and declares the existence of an emergency condition of water shortage within its service area, and further determines and declares that the regulations and restrictions on delivery of water and consumption of water within its service area as hereinafter set forth are necessary, in the sound discretion of the Board of Directors of the District, to conserve the water supply for the greatest public benefit with particular regard to domestic use, sanitation, and fire protection.

Section 3: Authorization to Implement Restrictions on Water Consumption: The Board of Directors of the District hereby authorizes the General Manager of the District to take specific steps to meet water conservation goals and avoid an imminent danger that the District will be unable to supply sufficient water for human consumption, sanitation, and fire protection, to implement the regulations and restrictions on water consumption as hereinafter set forth.

Section 4: Conservation Goal and Authorized Actions. The initial conservation goal of the District is a reduction in water use of ten percent (10%), which goal is subject to adjustment from time to time based upon demands, supplies, and conservation. The General Manager is authorized to implement Action 1, Paragraphs 1 through 9 of this resolution to meet said conservation goal.

Action 1. Mandatory Water Conservation Regulations. The General Manager shall take all steps necessary to advise the District's customers of the following mandatory regulations and to enforce them in accordance the District's existing Waste of Water Policy:

1. There shall be no hose washing of sidewalks, walkways, buildings, walls, patios, driveways, parking areas or other paved surfaces, or walls, except to eliminate conditions dangerous to public health or safety or when required as surface preparation for the application of architectural coating or painting.

2. Washing of motor vehicles, trailers, boats and other types of equipment shall be done only with a hand-held nozzle for quick rinses, except that washing may be done with reclaimed wastewater or by a commercial car wash using recycled water.

3. No water shall be used to clean, fill or maintain levels in decorative fountains, ponds, lakes or other similar aesthetic structures unless such water is part of a closed recycling system.

4. No restaurant, hotel, cafe, cafeteria or other public place where food is sold, served or offered or sale, shall serve drinking water to any customer unless expressly requested and shall display a notice to that effect.

5. All water users shall promptly repair all leaks from indoor and outdoor plumbing fixtures.

6. No lawn, landscape, or other turf area shall be watered more often than three (3) days per week and no more often than every other day nor during the hours between 6:00 a.m. and 6:00 p.m. Water days will be set as follows: addresses ending in an even number starting on Monday, and; addresses ending in an odd number starting on Tuesday.

   Exemptions:

   1. No watering hour restrictions during the months of November, December, January, February, and March. Watering can occur between the hours of 6:00 a.m. and 6:00 p.m.

   2. The District will allow an exemption from the watering schedule if an ET based controller is installed and operating. *The ET Controller Exemption Form* must be completed and the installation verified by a licensed landscape architect or PWD staff.

7. No water users shall cause or allow the water to run off landscape areas into adjoining streets, sidewalks, or other paved areas due to incorrectly directed or maintained sprinklers or excessive watering. If cited, random acts of vandalism will be considered in any appeal.

8. The owner and manager of every hotel, motel, inn, guest house, bed and breakfast facility, and short-term commercial lodging shall post a notice of such shortage and any necessary compliance measures.

9. Commercial nurseries, golf courses, parks, school yards, and other public open space, and landscaped areas shall be prohibited from watering lawn, landscaping, and other turf areas more often than five days per week and between the hours of 6:00 a.m. and 6:00 p.m., except that there shall be no restriction on watering utilizing reclaimed water or where public use requires a modified and approved watering schedule.

   Exemptions:

   1. Athletic field watering can occur between the hours of 6:00 p.m. and 10:00 a.m. the following morning.

2. No watering hour restrictions during the months of November, December, January, February, and March. Watering can occur between the hours of 6:00 a.m. and 6:00 p.m.

3. The District will allow an exemption from the watering schedule if an ET based controller is installed and operating. *The ET Controller Exemption Form* must be completed and the installation verified by a licensed landscape architect or PWD staff.

4. Watering schedules must be adhered to at all times. The District requires advance written notice of any maintenance activities requiring water use between the hours of 6:00 a.m. and 6:00 p.m.

10. The use of water from fire hydrants shall be limited to fire fighting and related activities and other uses of water for municipal purposes shall be limited to activities necessary to maintain the public health, safety, and welfare. Ongoing water system improvement projects qualifying with the exemption available under Action 2 are also exempt under this section and may continue to use construction meters in accordance with standard District policy.

Action 2: Moratorium on New Connections: Upon specific authorization by the Board of Directors, the General Manager shall impose a moratorium on new connections to the District's water system. Such moratorium shall take effect immediately pursuant to the authority authorized by this Resolution. Water system improvement projects that include new connections, have begun construction, and have not been activated at the time this resolution is effective can be exempted. The exemption is based on certification of the installation, proper programming, and proper operation of District-approved E/T irrigation system controller(s) for all irrigation systems in the project. These include those irrigation systems with separate water service connections and those connected to water service connections used for both irrigation and domestic purposes.

Action 3: Mandatory Water Rationing: Upon specific authorization by the Board of Directors, the General Manager shall the General Manager shall implement a phased water rationing to protect the water supply of the District and to guarantee adequate supply for domestic use, sanitation, and fire protection, as follows:

1. Stage 1: Water Rationing: A twenty percent (20%) reduction in water deliveries to all District customers.

2. Stage 2: Water Rationing: A thirty percent (30%) reduction in water deliveries to all District customers.

3. Stage 3: Water Rationing: A forty percent (40%) reduction in water deliveries to all District customers.

a) A Base water use shall be established for each residential, commercial and industrial consumer of the Palmdale water District corresponding to the amount of water delivered to that consumer during the last annual water year ending on December 31, 2006.

b) Water consumption by a consumer which is in excess of the specified conservation percentage of the base water use, as described in section 5 will be charged at a rate of $3.00 per 100 cubic feet of water, or fraction thereof, in addition to the current base water rate.

Section 5: Duration of Water Emergency: The regulations, restrictions, and actions set forth herein shall take full force and effect immediately upon authorization by the Board of Directors and shall remain in full force and effect until the supply of water available for distribution within the District service area has been replenished or augmented, as determined by the General Manager such that a sufficient supply of water is available for human consumption, sanitation, and fire protection, or until further action by the Board of Directors.

Section 6: Appeal: Decisions made by the District under the regulations set forth in this Resolution may be appealed by consumers in accordance with the procedure set forth in the District Rules and Regulations.

Section 7: Violation: A violation of the regulations and restrictions set forth herein may result in a fine and/or result in the discontinuance of service to consumers willfully violating the conservation measures set forth herein or such other penalty or restriction as may be allowed by law.

Section 8: Severability: If any portion of this Resolution is found to be unconstitutional or invalid, the District hereby declares that it would have enacted the remainder of this Resolution regardless of the absence of any such valid part.

Section 9: Effective Date: This Resolution shall take effect immediately.

BE IT FURTHER RESOLVED, that the Board of Directors finds that the provisions of this Resolution are exempt from the provisions of the California Environmental Quality Act as an action

to mitigate emergency conditions and as a rate setting measure pursuant to Public Resources Code §21080(b)(4) and (8); and

BE IT FURTHER RESOLVED, that this resolution supersedes and replaces Resolution No. 07-04 adopted by the District on May 23, 2007, which resolution is hereby rescinded and of no further force or effect.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of Palmdale Water District held on August 29, 2007.

Richard Wells, President
Palmdale Water District

Linda Godin, Secretary
Palmdale Water District

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REVISED
NOVEMBER 14, 2007

APPENDIX O

WATER WASTE POLICY

Due to the drought throughout California, Palmdale Water District is experiencing a serious water shortage. The District has enacted various conservation programs in an attempt to protect its limited water supply.

California law prohibits the waste and unreasonable use of water and requires that the District take all appropriate actions to prevent waste and unreasonable use of this limited resource.

Despite its conservation efforts, the District is experiencing instances of over-irrigation by certain Consumers, resulting in run off and waste of water.

In order to prevent continued waste and unreasonable use of water and to protect its limited available water supply, the District shall implement the following:

Procedure

1. Upon notification or observation of waste or misuse of water, the District shall:

   a. Make a photographic record of such waste or misuse;

   b. Give notice to the Consumer in writing or by use of a door tag; and

   c. Log the warning on the Consumer's service record.

2. Upon the second offense, the District shall:

   a. Assess a surcharge of $50.00 upon the Consumer;

   b. Give notice to the Consumer in writing that if such waste or misuse occurs again, the Consumer will be subject to disconnection.

3. Upon the third offense, the District shall:

   a. Give notice to the Consumer that disconnection of service will occur within 5 days after notice.

   b. Charge the Consumer a disconnection fee as set forth in Appendix D, as well as a reconnection fee as set forth in Appendix D, if service is later restored.

5/23/07

PALMDALE WATER DISTRICT
RESOLUTION NO. 07-4

RESOLUTION OF THE BOARD OF DIRECTORS OF PALMDALE WATER DISTRICT ADOPTING A VOLUNTARY WATER CONSERVATION PROGRAM

WHEREAS, Palmdale Water District ("District") was established for the purpose of providing adequate reliable potable water to its inhabitants at a reasonable cost; and

WHEREAS, due to inadequate snowfall and rainfall, opposition to the development and construction of water supply facilities and legal restrictions on the flow of State Water Project water to Southern California, California in general, and the Antelope Valley in particular, is experiencing shortages in water supplies; and

WHEREAS, the State Water Project deliveries have therefore been drastically curtailed in response to the inadequacy of water supplies; and

WHEREAS, groundwater supplies which provide a supplemental source of water to the District are limited in nature, being subjected to increased demands and now subject to legal challenges arising from a basin adjudication action that could further limit the District groundwater supplies; and

WHEREAS, conservation of water by all District consumers will help relieve the problems caused by the shortage in water supplies; and

WHEREAS, the District has attempted through its public information program to advise and alert the consumers to the serious nature of the water supply situation but has not experienced any significant reduction in consumer demand; and

WHEREAS, the District has the power and authority to adopt water conservation measures for activities within its boundaries; and

WHEREAS, given the current water supply conditions, and uncertainties related thereto, the District finds it necessary and beneficial to undertake a phased water conservation program.

NOW, THEREFORE, BE IT RESOLVED, that the General Manager he and hereby is authorized to implement a voluntary water conservation program, with the goal of reducing total customer water use by fifteen percent (15%), to reduce the risk and severity of a possible water shortage; and

BE IT FURTHER RESOLVED, that the District will:

a. Audit its landscape irrigation systems to maximize irrigation efficiency; adjust sprinklers and irrigation systems to avoid overspray, runoff, and waste;

b. Not irrigate its landscape areas during the hot hours of the day, during windy days, and avoid watering between the hours of 6:00 a.m. and 6:00 p.m.;

c. Not hose down driveways, sidewalks and other paved surfaces, except for health or sanitary reasons;

d. Retrofit its plumbing fixtures with low-flow devices, except for those fixtures that require high-flow fixtures for health and/or sanitary reasons;

e. Check its faucets, toilets, and pipes, both indoor and outdoor, for leaks and repair them immediately; and

BE IT FURTHER RESOLVED, that the District urges its customers to:

a. Adjust sprinklers and irrigation systems to avoid overspray, runoff, and waste;

b. Avoid watering in the hot of the day, on windy days, and between the hours of 6:00 a.m. and 6:00 p.m.;

c. Install new drought-tolerant landscaping, low-water-using trees and plants, and efficient irrigation systems;

d. Shut off decorative fountains, unless a water recycling system is used;

e. Not hose down driveways, sidewalks, and other paved surfaces, except for health or sanitary reasons;

f. Install pool and spa covers to minimize water loss due to evaporation;

g. Not allow the hose to run while washing any vehicle and to use a bucket or a hose with an automatic cutoff valve;

h. Retrofit indoor plumbing fixtures with low-flow devices;

i. Check faucets, toilets, and pipes, both indoor and outdoor, including house service laterals and sprinkler piping, for leaks and repair them immediately, or upon demand of the District;

j. Restaurants, hotels, cafes, cafeterias, or other public places where food is sold, served, or offered for sale, should serve drinking water to any customer only upon request and display a notice to that effect; and

BE IT FURTHER RESOLVED, that the District finds that a program of voluntary measures to reduce consumption will assist in achieving the goal of conserving the water supply without causing unnecessary adverse economic consequences; and

BE IT FURTHER RESOLVED, that if critical water shortages continue to exist, and if voluntary measures prove insufficient to accomplish the necessary conservation, the District will consider further action to curtail customer water use; and

BE IT FURTHER RESOLVED, that this resolution supersedes and replaces Resolution No. 01-03 adopted by the District on July 9, 2001, which resolution is hereby rescinded and of no further force or effect.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of Palmdale Water District held on May 23, 2007.

Richard Wells, President
Palmdale Water District

Linda Godin, Secretary
Palmdale Water District

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12/9/09

PALMDALE WATER DISTRICT
RESOLUTION NO. 09-19

RESOLUTION OF THE BOARD OF DIRECTORS
OF THE PALMDALE WATER DISTRICT
DECLARING WATER CONSERVATION REGULATIONS

WHEREAS, Palmdale Water District ("District") is a water district empowered to provide water service for domestic, sanitation and fire protection uses; and

WHEREAS, due to persistent inadequate rainfall, California is suffering from a chronic and continuing water shortage which impacts the water supply available to the District's service area; and

WHEREAS, precipitation remains substantially below normal locally, particularly in the watersheds of the sources of water supply serving Southern California and many communities in the state are suffering water shortages; and

WHEREAS, the District relies on rainfall and water supply from the State Water Project to meet its water needs; and

WHEREAS, State Water Project deliveries to the District have been reduced in response to the continuing arid conditions and could be exacerbated further by legal restrictions on the flow of State Water Project water through the Bay-Delta; and

WHEREAS, these arid conditions and reduced supplies from the State Water Project have led to a greater reliance on groundwater to meet the needs of District customers with the corresponding depletion of groundwater supplies in the District's service area; and

WHEREAS, the District's ability to rely upon and entitlement to utilize groundwater will be subject to court decisions in the basin adjudication action now pending in the court system; and

WHEREAS, following due public notice, the conduct of a public hearing and the making of findings as required by law, the District has the power and authority to adopt mandatory water conservation measures within its boundaries; and

WHEREAS, by Resolution No. 09-04 adopted by the District on March 11, 2009, a water shortage emergency was declared; and

WHEREAS, the District's new water budget allocation based rate has reduced water demand; and

WHEREAS, the District amends the mandatory water conservation measures in Resolution No. 09-04.

NOW, THEREFORE, BE IT RESOLVED, by the Board of Directors of the Palmdale Water District as follows:

Section 1: Findings: The Board of Directors of the District hereby finds and declares as follows:

1) The State Water Project water available to the District has been reduced with no guarantee that the District will receive emergency water deliveries.

2) Continued production of water from the groundwater basin without proportionate recharge of the basin through artificial recharging, stream runoff, rainfall and snow melt could impair the long-term water delivery capability of the District.

3) There are potential scenarios of reduced imported water supply availability combined with peak local demands that could result in insufficient water for human consumption, sanitation and fire prevention. The District is working to reduce the likelihood of such a scenario by reducing existing water demands through rates and conservation, increasing groundwater production capability, and by developing new supply sources such as recycled water.

Section 2: Authorization to Implement Restrictions on Water Consumption: The Board of Directors of the District hereby authorizes the General Manager of the District to take specific steps to meet water conservation goals and ensure adequate water supply for human consumption, sanitation, and fire protection, and to implement the regulations and restrictions on water consumption as hereinafter set forth.

Section 3: Conservation Goal and Authorized Actions. The initial conservation goal of the District is a reduction in water use of ten percent (10%), which goal is subject to adjustment from time to time based upon demands, supplies, and conservation, with an ultimate conservation goal of a reduction in water use of 20% by 2020. The General Manager is authorized to implement this resolution to meet said conservation and water supply goals.

Action 1. Mandatory Water Conservation Regulations. The General Manager shall take all steps necessary to advise the District's customers of the following mandatory regulations and to enforce them in accordance the District's existing Waste of Water Policy:

1. There shall be no hose washing of sidewalks, walkways, buildings, walls, patios, driveways, parking areas or other paved surfaces, or walls, except to eliminate conditions dangerous to public health or safety or when required as surface preparation for the application of architectural coating or painting.

2. Washing of motor vehicles, trailers, boats and other types of equipment shall be done only with a hand-held nozzle for quick rinses, except that washing may be done with reclaimed wastewater or by a commercial car wash using recycled water.

3. No water shall be used to clean, fill or maintain levels in decorative fountains, ponds, lakes or other similar aesthetic structures unless such water is part of a closed recycling system.

4. No restaurant, hotel, cafe, cafeteria or other public place where food is sold, served or offered for sale, shall serve drinking water to any customer unless expressly requested.

5. All water users shall promptly repair all leaks from indoor and outdoor plumbing fixtures.

6. Irrigation of landscaping is not to occur between 10:00 a.m. and 8:00 p.m. April to October. The District will allow an exemption from the watering schedule if an ET based controller is installed and operating.

7. No water users shall cause or allow the water to run off landscape areas into adjoining streets, sidewalks, or other paved areas due to incorrectly directed or maintained sprinklers or excessive watering. If cited, random acts of vandalism will be considered in any appeal.

8. The use of water from fire hydrants shall be limited to fire fighting and related activities and other uses of water for municipal purposes shall be limited to activities necessary to maintain the public health, safety, and welfare. The use of construction meters in accordance with standard District policy is permitted.

Section 4: Appeal: Decisions made by the District under the regulations set forth in this Resolution may be appealed by consumers in accordance with the procedure set forth in the District Rules and Regulations.

Section 5: Violation: A violation of the regulations and restrictions set forth herein may result in a fine and/or result in the discontinuance of service to consumers willfully violating the conservation measures set forth herein or such other penalty or restriction as may be allowed by law.

Section 6: Severability: If any portion of this Resolution is found to be unconstitutional or invalid, the District hereby declares that it would have enacted the remainder of this Resolution regardless of the absence of any such valid part.

Section 7: Effective Date: This Resolution shall take effect immediately.

BE IT FURTHER RESOLVED, that the Board of Directors finds that the provisions of this Resolution are exempt from the provisions of the California Environmental Quality Act as an action to mitigate emergency conditions and as a rate setting measure pursuant to Public Resources Code §21080(b)(4); and

BE IT FURTHER RESOLVED, that this resolution supersedes and replaces Resolution No. 09-04 adopted by the District on March 11, 2009, which resolution is hereby rescinded and of no further force or effect.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of Palmdale Water District held on December 9, 2009.

Gordon Dexter, President, Board of Directors
Palmdale Water District

Raul Figueroa, Secretary, Board of Directors
Palmdale Water District

Appendix G
Best Management Practices Report









The fields in red are required.

Agency name: PALMDALE WATER DISTRICT

Reporting unit name (District name): PALMDALE WATER DISTRICT

Reporting unit number: 7034

Primary contact:

First name: CLAUDETTE

Last name: ROBERTS

Email: croberts@palmdalewater.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Base Year Data

Link to FAQs

Reporting Unit Base Year

Base Year: 2008

What is your reporting period? Select a reporting perio

BMP 1.3 Metering

Number of unmetered accounts in Base Year: 0

BMP 3.1 & BMP 3.2 & BMP 3.3 Residential Programs

Number of Single Family Customers in Base Year: 24,186

Number of Multi Family Units in Base Year: 528

BMP 3.4 WaterSense Specification (WSS) Toilets

Number of Single Family Housing Units constructed prior to 1992: 17558

Number of Multi Family Units prior to 1992: 453

Average number of toilets per single family household: 1.87

Average number of toilets per multi family household: 1.26

Five year average resale rate of single family households: 28.5%

Five-year average resale rate of multi family households: 9%

Average number of persons per single family household: 3.97

Average number of persons per multi family household: 2.56

BMP 4.0 & BMP 5.0 CII & Landscape

Total water use (in Acre Feet) by CII accounts: 1715.4

Number of accounts with dedicated irrigation meters: 389

Number of CII accounts without meters or with Mixed Use Meters: 126

Number of CII accounts: 691

Comments:

The fields in red are required.

Agency name: PALMDALE WATER DISTRICT

Division name (Reporting unit): PALMDALE WATER DISTRICT

Reporting unit number: 7034

Primary contact:

First name: CLAUDETTE

Last name: ROBERTS

Email: croberts@palmdalewater.org

Service Area Population: 102513

2009

Non- Potable Water

Own Supply Source Name	AF/YEAR	Water Supply Type	If you select Other for type, enter Water Supply Description
WELLS/ PUMPING	7,764.00	Groundwater	PUMPING
LITTLEROCK RESERVOIR	75.50	Surface	SURFACE/RESERVOIR
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	

Imported Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
SWP	15,388.00	Surface	SURFACE SWP-
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	

Exported Water Name	AF/YEAR	Where Exported? such as groundwater recharge, retail,

The fields in red are required.

Agency name: PALMDALE WATER DISTRICT

Division name (Reporting unit): PALMDALE WATER DISTRICT

Reporting unit number: 7034

Primary contact:

First name: CLAUDETTE

Last name: ROBERTS

Email: croberts@palmdalewater.org

WATER SOURCES

2009

Service Area Population: 102513

Potable Water

Own Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
PUMPING	6,896.50	Groundwater	WELLS/ PIMPING
LITTLEROCK RESERVOIR	70.17	Surface	RESERVOIR
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	

Imported Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
SWP	13,669.00	Surface	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	

Exported Water Name	AF/YEAR	Where Exported?

The fields in red are required.

Agency name: PALMDALE WATER DISTRICT

Division name (Reporting unit): PALMDALE WATER DISTRICT

Reporting unit number: 7034

Primary contact:

First name: CLAUDETTE

Last name: ROBERTS

Email: croberts@palmdalewater.org

Water Uses

2009

Potable Water Billed

Make sure to enter numbers in AF/Year.

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Single Family	24,676.00	16,169.00			
Multi-Family	538.00	1,932.00			
Commercial	544.00	1,161.00			
Industrial	29.00	38.00			
Institutional	50.00	355.00			
Dedicated Irrigation	356.00	1,445.00			
Other	21.00	121.00			
Other	1.00	9.00			Littlerock Creek Irrigation District
Other					
Other					
Other					
Other					
Other					

Potable Water Un-Billed

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					

The fields in red are required.

Agency name: PALMDALE WATER DISTRICT

Reporting unit name (District name): PALMDALE WATER DISTRICT

Reporting unit number: 7034

Primary contact:

First name: CLAUDETTE

Last name: ROBERTS

Email: croberts@palmdalewater.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Link to FAQs

2009

See the complete MOU: View MOU

See the coverage requirements for this BMP:

BMP 1.1 Operations Practices

Comments:

Conservation Coordinator

Conservation Coordinator (•) Yes ( ) No

Contact Information

First Name: CLAUDETTE

Last Name: ROBERTS

Title: WATER CONSERVATION MANAGE

Phone: 661-456-1020

Email: croberts@palmdalewater.org

Note that the contact information may be the same as the primary contact information at the top of the page. If this is your case, excuse the inconvenience but please enter the information again.

Water Waste Prevention

Water Agency shall do one or more of the following:

a. Enact and enforce an ordinance or establish terms of service that prohibit water waste
b. Enact and enforce an ordinance or establish terms of service for water efficient design in new development
c. Support legislation or regulations that prohibit water waste
d. Enact an ordinance or establish terms of service to facilitate implementation of water shortage response measures
e. Support local ordinances that prohibit water waste
f. Support local ordinances that establish permits requirements for water efficient design in new

To document this BMP, provide the following:

a. A description of, or electronic link to, any ordinances or terms of service
b. A description of, or electronic link to, any ordinances or requirements adopted by local jurisdictions or regulatory agencies with the water agency's service area.
c. A description of any water agency efforts to cooperate with other entities in the adoption or enforcement of local requirement
d. description of agency support positions with respect to adoption of legislation or regulations

You can show your documentation by providing files, links (web addresses), and/or entering a description.

File name(s): Email files to natalie@cuwcc.org: PWD Waste of Water Policy

Web address(s) URL: comma-separated list:

Enter a description: The Policy will be emailed to Natalie

The fields in red are required.

Agency name: PALMDALE WATER DISTRICT

Reporting unit name (District name): PALMDALE WATER DISTRICT

Reporting unit number: 7034

Primary contact:

First name: CLAUDETTE

Last name: ROBERTS

Email: croberts@palmdalewater.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Link to FAQs

View MOU

2009 BMP 1.2 Water Loss Control

Did your agency complete a pre-screening system audit in 2009? Yes (●) No ( )

If yes, answer the following:

Determine metered sales in AF: 20,635.00

Definition: other accountable uses not included in metered sales, such as unbilled water use, fire suppression, etc.

Determine system verifiable uses AF: 200.00

Determine total supply into the system in AF: 22,310.00

Does your agency keep necessary data on file to verify the answers above? Yes (●) No ( )

Did your agency complete a full-scale system water audit during 2009? Yes ( ) No (●)

Does your agency maintain in-house records of audit results or the completed AWWA worksheet for the completed audit which could be forwarded to CUWCC? Yes (●) No ( )

Did your agency operate a system leak detection program? Yes (●) No ( )

Comments:

Palmdale Water District keeps records of leaking pipes and has a Pipe Replacement Plan

The fields in red are required.

Agency name: PALMDALE WATER DISTRICT

Reporting unit name (District name): PALMDALE WATER DISTRICT

Reporting unit number: 7034

Primary contact:

First name: CLAUDETTE

Last name: ROBERTS

Email: croberts@palmdalwater.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Link to FAQs

View MOU

2009 BMP 1.2 Water Loss Control

AWWA Water Audit

Agency to complete a Water Audit & Balance Using The AWWA Software ◉ Yes ○ No

Email to natalie@cuwcc.org - Worksheets (AWWA Water Audit). Enter the name of the file below:

2009 AWWA water loss worksheet

Water Audit Validity Score from AWWA spreadsheet: 86

Agency Completed Training In The AWWA Water Audit Method ◉ Yes ○ No

Agency Completed Training In The Component Analysis Process ◉ Yes ○ No

Completed/Updated the Component Analysis (at least every 4 years)? ○ Yes ◉ No

Component Analysis Completed/Updated Date:

Water Loss Performance

Agency Repaired All Reported Leaks & Breaks To The Extent Cost Effective ◉ Yes ○ No

Recording Keeping Requirements:

Date/Time Leak Reported	Leak Location
Type of Leaking Pipe Segment or Fitting	Leak Running Time From Report to Repair
Leak Volume Estimate	Cost of Repair

Agency Located and Repaired Unreported Leaks to the Extent Cost Effective ◉ Yes ○ No

Type of Program Activities Used to Detect Unreported Leaks

The District uses the GIS system to record all pipes in the distribution system ans records pipe repairs and dates

Annual Summary Information

Complete the following table with annual summary information (required for reporting years 2-5 only)

Total Leaks Repaired	Economic Value Of Real Loss	Economic Value Of Apparent Loss	Miles Of System Surveyed For Leaks	Pressure Reduction Undertaken for loss reduction	Cost Of Interventions	Water Saved (AF/Year)
603		$0.64	11.9			

Comments: One unit of water (1-CCF) in tier one costs $.64 cents

The fields in red are required.

Agency name: PALMDALE WATER DISTRICT

Reporting unit name (District name): PALMDALE WATER DISTRICT

Reporting unit number: 7034

Primary contact:

First name: CLAUDETTE

Last name: ROBERTS

Email: croberts@palmdalwater.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

BMP 1.3 Metering with Commodity

Link to FAQs

See the complete MOU: View MOU

See the coverage requirements for this BMP:

Implementation

Does your agency have any unmetered service connections? ○ Yes ◉ No

If YES, has your agency completed a meter retrofit plan? ○ Yes ◉ No

Enter the number of previously unmetered accounts fitted with meters during reporting year:

Are all new service connections being metered? ◉ Yes ○ No

Are all new service connections being billed volumetrically? ◉ Yes ○ No

Has your agency completed and submitted electronically to the Council a written plan, policy or program to test, repair and replace meters? ◉ Yes ○ No

Please Fill Out The Following Matrix

Account Type	# Metered Accounts	# Metered Accounts Read	# Metered Accounts Billed by Volume	Billing Frequency Per Year	# of estimated bills/yr
Single-Family	24,075	24,075	24,075	Monthly	25,877
Multi-Family	526	526	526	Monthly	580
Commericial	545	545	545	Monthly	585
Industrial	14	14	14	Monthly	14
Institutional	129	129	129	Monthly	129
Dedicated Irrigatic	388	388	388	Monthly	416
Other	21	21	21	Monthly	21
Other	1	1	1	Monthly	1
Other				Other	
Other				Other	

Number of CII Accounts with Mixed-use Meters: 129

Number of CII Accounts with Mixed-use Meters Retrofitted with Dedicated Irrigation Meters during Reporting Period: 0

Feasibility Study

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? ○ Yes ⊙ No

If YES, please fill in the following information:

A. When was the Feasiblity Study conducted

B. Email or provide a link to the feasibility study (or description of):

File name(s): Email files to natalie@cuwcc.org Enter the file name here e.g. WaterWastePreventionOrdinanc

Web address(s) URL: comma-separated list Enter the URL to your documentation.

General Comments about BMP 1.3: PWD's Meter Replacement Plan has been sent to the CUWCC

Agency name: PALMDALE WATER DISTRICT
First name: CLAUDETTE
Reporting unit name (District name): PALMDALE WATER DISTRICT
Last name: ROBERTS
Reporting unit number: 7034
Email: croberts@palmdalewater.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

BMP 1.4 Retail Conservation Pricing

Link to FAQs

View MOU

If you are reporting more rate structures than this form allows, add the structures to a spreadsheet and send the file to natalie@cuwcc.org.

2009

Implementation (Water Rate Structure)

Enter the Water Rate Structures that are assigned to the majority of your customers, by customer class

Rate Structure	Customer Class	Total Revenue Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Allocation Based	Single-Family	8,894,676.99	5,927,920.86
Allocation Based	Multi-Family	874,500.66	358,023.07
Allocation Based	Commercial	1,651,520.00	495,234.20
Allocation Based	Industrial	87,737.00	26,309.20
Allocation Based	Institutional	232,233.84	69,642.00
Select a Rate Struc	Other	759,722.04	230,782.43
Select a Rate Struc	Other	93,111.47	132,696.24

Implementation Option (Conservation Pricing Option)

- (•) Use Annual Revenue As Reported
- ( ) Use Canadian Water & Wastewater Association Rate Design Model

If CWWA is select, enter the file name and email the spreadsheet to natalie@cuwcc.org

Retail Waste Water (Sewer) Rate Structure by Customer Class

Agency Provide Sewer Service ( ) Yes (•) No

Select the Retail Waste Water(Sewer) Rate Structure assigned to the majority of your customers within a specific customer class.

Rate Structure	Customer Class	Total Revenue Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Select a Rate Struc	Other		
Select a Rate Struc	Other		
Select a Rate Struc	Other		
Select a Rate Struc	Other		
Select a Rate Struc	Other		
Select a Rate Struc	Other		
Select a Rate Struc	Other		

Comments:

The fields in red are required.

Agency name: PALMDALE WATER DISTRICT

Reporting unit name (District name): PALMDALE WATER DISTRICT

Reporting unit number: 7034

Primary contact:

First name: CLAUDETTE

Last name: ROBERTS

Email: croberts@palmdalewater.org

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

Link to FAQs

View MOU

2009

BMP 2.1 Public Outreach - Retail Reporting

Is a Wholesale Agency Performing Public Outreach?

Are there one or more wholesale agencies performing public outreach which can be counted to help your agency comply with the BMP? ○ Yes ◉ No

Enter the name(s) of the wholesale agency (comma delimited)

Is your agency performing public outreach?

Report a minimum of 4 water conservation related contacts your agency had with the public during the year.

Public Information Programs List

Did at least one contact take place during each quarter of the reporting year? ☑

Number of Public Contacts	Public Information Programs
4	Newsletter articles on conservation
3	Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets
6	Landscape water conservation media campaigns
6	General water conservation information
	Select a public contact

Contact with the Media

Are there one or more wholesale agencies performing media outreach which can be counted to help your agency comply with the BMP? ○ Yes ◉ No

Enter the name(s) of the wholesale agency (comma delimited)

OR Retail Agency (Contacts with the Media)

Media Contacts List

Did at least one contact take place during each quarter of the reporting year? ☑

Number of Media Contacts	Did at least one contact take place during each quarter of the reporting year?	Media Contact Types
12		Editorial board visits
4		Television contacts
5		News releases
4		Radio contacts
		Select a type of media contact
		Select a type of media contact

Is a Wholesale Agency Performing Website Updates?

Did one or more CUWCC wholesale agencies agree to assume your agency's responsibility for meeting the requirements of and for CUWCC reporting of this BMP? ○Yes ⊙No

Enter the name(s) of the wholesale agency (comma delimited)

Is Your Agency Performing Website Updates?

Enter your agency's URL (website address): www.palmdalewater.org

Describe a minimum of four water conservation related updates to your agency's website that took place during the year:

Press Releases on Landscape workshops
Water News (PWD's quarterly news letter)
Leak repair
Notice to customers on Prop 219, conservation

Did at least one Website Update take place during each quarter of the reporting year? ⊙Yes ○No

Public Outreach Annual Budget

Enter budget for public outreach programs. You may enter total budget in a single line or brake the budget into discrete categories by entering many rows. Please indicate if personnel costs are included in the entry.

Category	Amount		Personnel Costs Included? If yes, check the box.	Comments
Water News	$50,000		☐	
General Media	$8,000		☐	
Brochures	$6,000		☐	
Press	$2,000		☐	
			☐	
			☐	

Comments:

In 2009, the District established a water budget rate structure to its customers, the outreach program was extended to include additional information to the public.

The fields in red are required.

Agency name: PALMDALE WATER DISTRICT
Reporting unit name (District name): PALMDALE WATER DISTRICT
Reporting unit number: 7034

Primary contact:
First name: CLAUDETTE
Last name: ROBERTS
Email: croberts@palmdalewater.org

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

Link to FAQs

2009

BMP 2.1 Public Outreach Cont'd

View MOU

Public Outreach Expenses

Enter expenses for public outreach programs. Please include the same kind of expenses you included in the question related to your budget (Section 2.1.7, above). For example, if you included personnel costs in the budget entered above, be sure to include them here as well.

Expense Category	Expense Amount	Personnel Costs Included?
Water news	$44,964	
Brochures	$5,784	
Landscape water conservtion medi	$7,379	
General Conservation information	$1,600	

If yes, check the check box.

Additional Public Information Program

Please report additional public information contacts. List these additional contacts in order of how your agency views their importance / effectiveness with respect to conserving water, with the most important/ effective listed first (where 1 = most important).

Were there additional Public Outreach efforts? ○Yes ○No

Public Outreach Additional Information

Public Information Programs	Importance
Landscape workshops	$1
Public events	$3
Public Agency Presentations	$2

Social Marketing Programs

Branding

Does your agency have a water conservation "brand," "theme" or mascot? ○Yes ○No

Describe the brand, theme or mascot. Aquadog- PWD's friendly Water Wise Mascot

Market Research

Have you sponsored or participated in market research to refine your message? ⊙Yes ○No

Market Research Topic	Using the Calif Water Awareness Campaign
Brand Message	Use Water Wisely its a way of Life
Brand Mission Statement	PWD's conservtion Mission Statement-To provide education and public awareness on water conservation and the environment

Community Committees

Do you have a community conservation committee? ⊙ Yes ○ No

Enter the names of the community committees: The AV Water Conservation Coalition

Training

Training Type	# of Trainings	# of Attendees	Description of Other

Social Marketing Expenditures

Public Outreach Social Marketing Expenses

Expense Category	Expense Amount	Description

Partnering Programs - Partners

Name	Type of Program
☐ CLCA?	
☐ Green Building Programs?	
☐ Master Gardeners?	
☐ Cooperative Extension?	
☑ Local Colleges?	AV College AG department
☐ Other	Local Water Agencies-LACWW, QHWD,RCSD

☐ Retail and wholesale outlet; name(s) and type(s) of programs:

Partnering Programs - Newsletters

Number of newsletters per year: 6 -Vantage Palmdale Chamber

The fields in red are required.

Agency name: PALMDALE WATER DISTRICT

Reporting unit name (District name): PALMDALE WATER DISTRICT

Reporting unit number: 7034

Primary contact:

First name: CLAUDETTE

Last name: ROBERTS

Email: croberts@palmdalewater.org

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

Link to FAQs

2009

BMP 2.2 School Education Programs, Retail Agencies

View MOU

School Programs

Is a wholesale agency implementing school programs which can be counted to help your agency comply with this BMP? ○Yes ◉No

Enter Wholesaler Names, separated by commas:

☑ Materials meet state education framework requirements?

Description of Materials: PWD uses Project WET and California Water Awareness Campaign materials-water units 1-5

☑ Materials distributed to K-6 Students?

Description of materials distributed to K-6 Students: PWD uses pages from Project WET and CWAC materials for information that goes along with PWD's contests

Number of students reached: 0

☐ Materials distributed to 7-12 Students?

Description of materials distributed to 7-12 Students: PWD uses pages from Project WET and CWAC materials for information that goes along with PWD's contests

Number of Distribution: 0

Annual budget for school education program: $2,000.00

Description of all other water supplier education programs: 2009- Tours and presentaions . Normally the District provides other programs and contests this year the budget was reduced because of econmonic conditions.

School Program Activities

Classroom presentations:

Number of presentations: 5 Number of attendees: 135

Large group assemblies:

Number of presentations: 0 Number of attendees: 0

Children's water festivals or other events:

Number of presentations: 2 Number of attendees: 400

Cooperative efforts with existing science/water education programs (various workshops, science fair awards or judging) and follow-up:

Number of presentations: 0 Number of attendees: 0

Other methods of disseminating information (i.e. themed age-appropriate classroom loaner kits):

Description

Number distributed 0

Staffing children's booths at events & festivals:

Number of booths 2 Number of attendees 400

Water conservation contests such as poster and photo:

Description Since1996 the District has provided poster, jingle, coloring, essay, and the landscape in a box contests although this year the budget wad reduce due to econmomic conditions. Normally k,1,3 grades(400, 4-6-grades (900) 7-8 grades (25)

Number distributed 0

Offer monetary awards/funding or scholarships to students:

Number Offered 0 Total Funding 0

Teacher training workshops:

Number of presentations 0 Number of attendees 0

Fund and/or staff student field trips to treatment facilities, recycling facilities, water conservation gardens, etc.:

Number of tours or field trips 5 Number of participants 1500

College internships in water conservation offered:

Number of internships 0 Total funding 0

Career fairs/workshops:

Number of presentations 0 Number of attendees 0

Additional program(s) supported by agency but not mentioned above:

Description

Number of events (if applicable) Number of participants

Total reporting period budget expenditures for school education programs (include all agency costs): 1980

Comments

Under economic conditions the District reduced the education budget for 2009. Several contests and the Water Fair for 12 ye

AWWA WLCC Free Water Audit Software: Reporting Worksheet

Copyright © 2010, American Water Works Association. All Rights Reserved. WAS v5.0

Click to access definition

Water Audit Report for: PALMDALE WATER DISTRICT
Reporting Year: 2009 1/2009 - 12/2009

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

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

WATER SUPPLIED		<< Enter grading in column 'E'		
Volume from own sources:	10	7,532.000	acre-ft/yr	
Master meter error adjustment (enter positive value):		0.000		acre-ft/yr
Water imported:	10	14,778.000	acre-ft/yr	
Water exported:		0.000	acre-ft/yr	
WATER SUPPLIED:		22,310.000	acre-ft/yr	

AUTHORIZED CONSUMPTION				
Billed metered:	10	20,635.000	acre-ft/yr	
Billed unmetered:		0.000	acre-ft/yr	
Unbilled metered:	8	200.000	acre-ft/yr	
Unbilled unmetered:		278.875	acre-ft/yr	
Enter a positive value, otherwise a default percentage of 1.25% and a grading of 5 is applied				
AUTHORIZED CONSUMPTION:		21,113.875	acre-ft/yr	

Click here for help using option buttons below

Font: Value:

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

WATER LOSSES (Water Supplied - Authorized Consumption)		1,196.125	acre-ft/yr	
Apparent Losses				
Unauthorized consumption:	6	0.200	acre-ft/yr	0.200
Customer metering inaccuracies:	6	0.015	acre-ft/yr	0.015
Systematic data handling errors:	7	3.500	acre-ft/yr	
Apparent Losses:		3.715		

Choose this option to enter a percentage of billed metered consumption. This is NOT a default value

Real Losses (Current Annual Real Losses or CARL)			
Real Losses = Water Losses - Apparent Losses:		1,192.410	acre-ft/yr
WATER LOSSES:		1,196.125	acre-ft/yr

NON-REVENUE WATER			
NON-REVENUE WATER:		1,675.000	acre-ft/yr
= Total Water Loss + Unbilled Metered + Unbilled Unmetered			

SYSTEM DATA				
Length of mains:	10	402.0	miles	
Number of active AND inactive service connections:	8	27,623		
Connection density:		69	conn./mile main	
Average length of customer service line:	9	50.0	ft	(pipe length between curbstop and customer meter or property boundary)
Average operating pressure:	9	70.0	psi	

COST DATA			
Total annual cost of operating water system:	9	$20,813,544	$/Year
Customer retail unit cost (applied to Apparent Losses):	8	$17,240.00	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	8	$1,089.00	$/acre-ft

PERFORMANCE INDICATORS

Financial Indicators

Non-revenue water as percent by volume of Water Supplied:	7.5%
Non-revenue water as percent by cost of operating system:	142.8%
Annual cost of Apparent Losses:	$27,898,699
Annual cost of Real Losses:	$1,298,534

Operational Efficiency Indicators

Apparent Losses per service connection per day:	0.12	gallons/connection/day
Real Losses per service connection per day*:	38.54	gallons/connection/day
Real Losses per length of main per day*:	N/A	
Real Losses per service connection per day per psi pressure:	0.55	gallons/connection/day/psi
Unavoidable Annual Real Losses (UARL):	649.24	acre-feet/year
From Above, Real Losses = Current Annual Real Losses (CARL):	1,192.41	acre-feet/year
Infrastructure Leakage Index (ILI) [CARL/UARL]:	1.84	

* only the most applicable of these two indicators will be calculated

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 87 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Customer metering inaccuracies
2: Unauthorized consumption
3: Unbilled metered

To view more information about Real Loss Modeling, Master worksheet

TARGETS / COMPLIANCE
(SBx7-7)

Input cells:
Calculated cells:

Target Summary	2020	2015
Method 1	170.1	191.3
Method 2	N/A	N/A
Method 3	N/A	N/A
Method 4	0.0	0.0
	Min Value	Max Value

GPCD in 2010	147.2
Base daily per capita water use (10-15yr baseline)	212.6
Base daily per capita water use (5yr baseline)	213.4
Max. allowable GPCD target in 2020 (95% x 5yr baseline)	202.7

Method 1: Baseline per Capita Water Use

80% x Base daily per capita water use (10-15yr baseline): 170.1

2015 Target: 191.3
2020 Target: 170.1

Method 2: Performance Standards

TM 2 Indoor Water Use allowance: 0.0
TM 6 Landscaped Area Water Use: 0.0
TM 7 Baseline CII Water Use: 0.0

2015 Target: N/A
2020 Target: N/A

Method 3: Hydrologic Region Targets

Enter the percentage of your service area population in each hydrologic region

Region	Region Name	% Population	GPCD Target
1	North Coast		137
2	San Francisco Bay		131
3	Central Coast		123
4	South Coast		149
5	Sacramento River		176
6	San Jacinto		174
7	Tulare lake		188
8	North Lahontan		173
9	South Lahontan		170
10	Colorado River		211
		0.0%	

2015 Target: N/A
2020 Target: N/A

Method 4:

To be Developed

California Urban Water Conservation Council

TARGETS / COMPLIANCE
(CUWCC MOU)

Baseline / Initial GPCD
(Use option buttons to select)

GPCD in 2006 ○	
Baseline GPCD (1997 to 2006) ◎	212.3
GPCD in 2010	147.2
GPCD Target for 2018	174.1

Potable Water GPCD for each Year in the Baseline Period

Year	GPCD
2006	212.8
2005	209.5
2004	217.5
2003	216.8
2002	216.7
2001	216.0
2000	219.7
1999	215.5
1998	187.5
1997	210.8

Biennial GPCD Compliance Table

Year	Report	Target		Highest Acceptable Bound	
		% Base	GPCD	% Base	GPCD
2010	1	96.4%	204.6	100%	212.3
2012	2	92.8%	197.0	96.4%	204.6
2014	3	89.2%	189.4	92.8%	197.0
2016	4	85.6%	181.7	89.2%	189.4
2018	5	82.0%	174.1	82.0%	174.1

Monthly GPCD Data for Weather Normalization

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2
Baseline avg*	212.3	212.3	212.3	212.3	212.3	212.3	212.3	212.3	212.3	212.3	212.3	212.3

* The average for each month is based on the baseline period 1997 to 2006

California Urban Water Conservation Council

TARGETS / COMPLIANCE
(SBx7-7)

Input cells:
Calculated cells:

Target Summary	2020	2015
Method 1	170.1	191.3
Method 2	N/A	N/A
Method 3	N/A	N/A
Method 4	0.0	0.0
	Min Value	Max Value

GPCD in 2010	147.2
Base daily per capita water use (10-15yr baseline)	212.6
Base daily per capita water use (5yr baseline)	213.4
Max. allowable GPCD target in 2020 (95% x 5yr baseline)	202.7

Method 1: Baseline per Capita Water Use

80% x Base daily per capita water use (10-15yr baseline): 170.1

2015 Target: 191.3
2020 Target: 170.1

Method 2: Performance Standards

TM 2 Indoor Water Use allowance: 0.0
TM 6 Landscaped Area Water Use: 0.0
TM 7 Baseline CII Water Use: 0.0

2015 Target: N/A
2020 Target: N/A

Method 3: Hydrologic Region Targets

Enter the percentage of your service area population in each hydrologic region

Region	Region Name	% Population	GPCD Target
1	North Coast		137
2	San Francisco Bay		131
3	Central Coast		123
4	South Coast		149
5	Sacramento River		176
6	San Jacinto		174
7	Tulare lake		188
8	North Lahontan		173
9	South Lahontan		170
10	Colorado River		211
		0.0%	

2015 Target: N/A
2020 Target: N/A

Method 4:

To be Developed

California Urban Water Conservation Council

Main Data

Input cells:
Calculated cells:

Data Entry in acre-feet unless otherwise noted

Volume from Own Sources

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL TOTAL (INPUT)	METER ADJUST-MENT (%)	CALCULATED TOTAL
2010													8,430.000		8,430.000
2009													6,964.000		6,964.000
2008													12,341.000		12,341.000
2007													8,938.000		8,938.000
2006													14,388.000		14,388.000
2005													14,916.000		14,916.000
2004													13,570.000		13,570.000
2003													13,224.000		13,224.000
2002													7,367.000		7,367.000
2001													14,858.000		14,858.000
2000													15,050.000		15,050.000
1999													10,946.000		10,946.000
1998													11,264.000		11,264.000
1997													10,948.000		10,948.000
1996													11,032.000		11,032.000
1995													13,569.000		13,569.000
1994													11,508.000		11,508.000
1993													9,966.000		9,966.000
1992													12,447.000		12,447.000
1991													10,859.000		10,859.000
1990													8,418.000		8,418.000

Volume from Imported Sources

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL TOTAL (INPUT)	METER ADJUST-MENT (%)	CALCULATED TOTAL
2010													9,613.000		9,613.000
2009													13,664.000		13,664.000
2008													10,841.000		10,841.000
2007													17,171.000		17,171.000
2006													11,323.000		11,323.000
2005													9,632.000		9,632.000
2004													11,144.000		11,144.000
2003													10,706.000		10,706.000
2002													16,406.000		16,406.000
2001													8,484.000		8,484.000
2000													8,304.000		8,304.000
1999													11,279.000		11,279.000
1998													7,586.000		7,586.000

1997												
1996												
1995												
1994												
1993												
1992												
1991												
1990												

10,094.000		10,094.000
10,425.000		10,425.000
6,277.000		6,277.000
7,750.000		7,750.000
7,195.000		7,195.000
3,654.000		3,654.000
3,506.000		3,506.000
7,654.000		7,654.000

Volume of Water Exported to Another Water Utility or Jurisdiction

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010												
2009												
2008												
2007												
2006												
2005												
2004												
2003												
2002												
2001												
2000												
1999												
1998												
1997												
1996												
1995												
1994												
1993												
1992												
1991												
1990												

ANNUAL TOTAL (INPUT)	METER ADJUST-MENT (%)	CALCULATED TOTAL
		0.000
		0.000
		0.000
		0.000
		0.000
		0.000
		0.000
		0.000
		0.000
		0.000
		0.000
		0.000
		0.000
		0.000
		0.000
		0.000
		0.000
		0.000
		0.000
		0.000
		0.000

Recycled Water Delivered **NOTE: Only 2008 recycled water delivered is required; other years are optional**

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010												
2009												
2008												
2007												
2006												
2005												
2004												
2003												
2002												
2001												

ANNUAL TOTAL (INPUT)	METER ADJUST-MENT (%)	CALCULATED TOTAL
0.000		0.000
0.000		0.000
0.000		0.000
0.000		0.000
0.000		0.000
0.000		0.000
0.000		0.000
0.000		0.000
0.000		0.000
0.000		0.000

The fields in red are required.

Agency name: PALMDALE WATER DISTRICT

Division name (Reporting unit): PALMDALE WATER DISTRICT

Reporting unit number: 7034

Primary contact:

First name: CLAUDETTE

Last name: ROBERTS

Email: croberts@palmdalewater.org

Service Area Population: 103510

2010

Non- Potable Water

Own Supply Source Name	AF/YEAR	Water Supply Type	If you select Other for type, enter Water Supply Description
WELLS	7,776.00	Groundwater	WELLS/PUMPIING
LITTLEROCK RESVOIR	1,861.00	Surface	SURFACE
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	

Imported Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
SWP	10,959.00	Surface	SURFACE
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	

Exported Water Name	AF/YEAR	Where Exported? such as groundwater recharge, retail,

The fields in red are required.

Agency name: PALMDALE WATER DISTRICT

Division name (Reporting unit): PALMDALE WATER DISTRICT

Reporting unit number: 7034

Primary contact:

First name: CLAUDETTE

Last name: ROBERTS

Email: croberts@palmdalewater.org

WATER SOURCES

2010

Service Area Population: 103,886.7

Potable Water

Own Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
Well	6,812.20	Groundwater	pumping
Littlerock Reservoir	1,630.00	Surface	surface
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	

Imported Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
SWP	9,600.70	Surface	surface
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	

Exported Water Name	AF/YEAR	Where Exported?

The fields in red are required.

Agency name: PALMDALE WATER DISTRICT

Division name (Reporting unit): PALMDALE WATER DISTRICT

Reporting unit number: 7034

Primary contact:

First name: CLAUDETTE

Last name: ROBERTS

Email: croberts@palmdalewater.org

Water Uses

2010

Potable Water Billed

Make sure to enter numbers in AF/Year.

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Single Family	34,356.00	16,132.66			
Multi-Family	562.56	1,488.75			
Commercial	1,281.65	1,857.00			
Industrial	54.00	58.00			
Institutional	230.00	165.00			
Dedicated Irrigation	292.00	947.00			
Other	21.00	114.00			
Other	1.00	5.00			Oldwick Creek Irrigation District
Other					
Other					
Other					
Other					
Other					

Potable Water Un-Billed

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					

The fields in red are required.

Agency name: PALMDALE WATER DISTRICT

Reporting unit name (District name): PALMDALE WATER DISTRICT

Reporting unit number: 7034

Primary contact:

First name: CLAUDETTE

Last name: ROBERTS

Email: croberts@palmdalewater.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Link to FAQs

2010

See the complete MOU: View MOU

See the coverage requirements for this BMP:

BMP 1.1 Operations Practices

Comments:

Conservation Coordinator

Conservation Coordinator (•) Yes ( ) No

Contact Information

First Name	CLAUDETTE
Last Name	ROBERTS
Title	WATER CONSERVATION MANAG
Phone	661-456-1020
Email	croberts@palmdalewater.org

Note that the contact information may be the same as the primary contact information at the top of the page. If this is your case, excuse the inconvenience but please enter the information again.

Water Waste Prevention

Water Agency shall do one or more of the following:

a. Enact and enforce an ordinance or establish terms of service that prohibit water waste
b. Enact and enforce an ordinance or establish terms of service for water efficient design in new development
c. Support legislation or regulations that prohibit water waste
d. Enact an ordinance or establish terms of service to facilitate implementation of water shortage response measures
e. Support local ordinances that prohibit water waste
f. Support local ordinances that establish permits requirements for water efficient design in new

To document this BMP, provide the following:

a. A description of, or electronic link to, any ordinances or terms of service
b. A description of, or electronic link to, any ordinances or requirements adopted by local jurisdictions or regulatory agencies with the water agency's service area.
c. A description of any water agency efforts to cooperate with other entities in the adoption or enforcement of local requirement
d. description of agency support positions with respect to adoption of legislation or regulations

You can show your documentation by providing files, links (web addresses), and/or entering a description.

File name(s): Email files to natalie@cuwcc.org

Web address(s) URL: comma-separated list: www.palmdalewater.org www.cityofpalmdale.org

Enter a description: The District has a Waste of Water Policy and the City of Palmdale has a Landscape ordiance

The fields in red are required.

Agency name: PALMDALE WATER DISTRICT

Reporting unit name (District name): PALMDALE WATER DISTRICT

Reporting unit number: 7034

Primary contact:

First name: CLAUDETTE

Last name: ROBERTS

Email: croberts@palmdalwater.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Link to FAQs

View MOU

2010 BMP 1.2 Water Loss Control

AWWA Water Audit

Agency to complete a Water Audit & Balance Using The AWWA Software ⊙ Yes ○ No

Email to natalie@cuwcc.org - Worksheets (AWWA Water Audit). Enter the name of the file below:

2010 AWWA water loss workshops

Water Audit Validity Score from AWWA spreadsheet: 86

Agency Completed Training In The AWWA Water Audit Method ⊙ Yes ○ No

Agency Completed Training In The Component Analysis Process ⊙ Yes ○ No

Completed/Updated the Component Analysis (at least every 4 years)? ○ Yes ⊙ No

Component Analysis Completed/Updated Date:

Water Loss Performance

Agency Repaired All Reported Leaks & Breaks To The Extent Cost Effective ⊙ Yes ○ No

Recording Keeping Requirements:

Date/Time Leak Reported	Leak Location
Type of Leaking Pipe Segment or Fitting	Leak Running Time From Report to Repair
Leak Volume Estimate	Cost of Repair

Agency Located and Repaired Unreported Leaks to the Extent Cost Effective ⊙ Yes ○ No

Type of Program Activities Used to Detect Unreported Leaks

PWD uses GIS system to record all pipes on the distribution system including pipes and dates of repairs.

Annual Summary Information

Complete the following table with annual summary information (required for reporting years 2-5 only)

Total Leaks Repaired	Economic Value Of Real Loss	Economic Value Of Apparent Loss	Miles Of System Surveyed For Leaks	Pressure Reduction Undertaken for loss reduction	Cost Of Interventions	Water Saved (AF/Year)
866		$0.64	12.0			

Comments:

The fields in red are required.

Agency name: PALMDALE WATER DISTRICT

Reporting unit name (District name): PALMDALE WATER DISTRICT

Reporting unit number: 7034

Primary contact:

First name: CLAUDETTE

Last name: ROBERTS

Email: croberts@palmdalewater.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

BMP 1.3 Metering with Commodity

2010

Link to FAQs

See the complete MOU: View MOU

See the coverage requirements for this BMP:

Implementation

Does your agency have any unmetered service connections? ○ Yes ◉ No

If YES, has your agency completed a meter retrofit plan? ○ Yes ◉ No

Enter the number of previously unmetered accounts fitted with meters during reporting year:

Are all new service connections being metered? ◉ Yes ○ No

Are all new service connections being billed volumetrically? ◉ Yes ○ No

Has your agency completed and submitted electronically to the Council a written plan, policy or program to test, repair and replace meters? ◉ Yes ○ No

Please Fill Out The Following Matrix

Account Type	# Metered Accounts	# Metered Accounts Read	# Metered Accounts Billed by Volume	Billing Frequency Per Year	# of estimated bills/yr
Single-Family	24,396	24,396	24,396	Monthly	25,894
Multi-Family	562	562	562	Monthly	580
Commercial	526	526	526	Monthly	560
Institutional	14	14	14	Monthly	14
Industrial	130	130	130	Monthly	138
Dedicated Irrigati	392	392	392	Monthly	416
Other	21	21	21	Monthly	21
Other	1	1	1	Monthly	1
Other				Other	
Other				Other	

Number of CII Accounts with Mixed-use Meters: 129

Number of CII Accounts with Mixed-use Meters Retrofitted with Dedicated Irrigation Meters during Reporting Period: 0

Feasibility Study

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? ○ Yes ◉ No

If YES, please fill in the following information:

A. When was the Feasiblity Study conducted

B. Describe, upload or provide an electronic link to the Feasibility Study Upload File

File name(s): Email files to natalie@cuwcc.org

Web address(s) URL: comma-separated list: www.palmdalewater.org

Comments:

Agency name: PALMDALE WATER DISTRICT
First name: CLAUDETTE
Reporting unit name (District name): PALMDALE WATER DISTRICT
Last name: ROBERTS
Reporting unit number: 7034
Email: croberts@palmdalewater.org

unit number that we have on record for your agency. Click here to open a table to obtain this number.

2010

BMP 1.4 Retail Conservation Pricing

Link to FAQs

View MOU

If you are reporting more rate structures than this form allows, add the structures to a spreadsheet and send the file to natalie@cuwcc.org.

Implementation (Water Rate Structure)

Enter the Water Rate Structures that are assigned to the majority of your customers, by customer class

Rate Structure	Customer Class	Total Revenue Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Allocation Based	Single-Family	7,292,244.77	9,406,608.46
Allocation Based	Multi-Family	207,800.94	248,227.29
Allocation Based	Commercial	185,060.46	170,844.70
Allocation Based	Industrial	3,136.62	5,426.83
Allocation Based	Institutional	29,013.72	50,248.44
Allocation Based	Dedicated Irrigation	117,623.18	159,790.04
Allocation Based	Other	6,665.31	8,542.23

Implementation Option (Conservation Pricing Option)

- (•) Use Annual Revenue As Reported
- ( ) Use Canadian Water & Wastewater Association Rate Design Model

If CWWA is select, enter the file name and email the spreadsheet to natalie@cuwcc.org

Retail Waste Water (Sewer) Rate Structure by Customer Class

Agency Provide Sewer Service ( ) Yes (•) No

Select the Retail Waste Water(Sewer) Rate Structure assigned to the majority of your customers within a specific customer class.

Rate Structure	Customer Class	Total Revenue Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Select a Rate Struc	Other		
Select a Rate Struc	Other		
Select a Rate Struc	Other		
Select a Rate Struc	Other		
Select a Rate Struc	Other		
Select a Rate Struc	Other		
Select a Rate Struc	Other		

Comments:

The fields in red are required.

Agency name: PALMDALE WATER DISTRICT

Reporting unit name (District name): PALMDALE WATER DISTRICT

Reporting unit number: 7034

Primary contact:

First name: CLAUDETTE

Last name: ROBERTS

Email: croberts@palmdalewater.org

Click here to open a tab'le that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

Link to FAQs

2010

BMP 2.1 Public Outreach - Retail Reporting

View MOU

Is a Wholesale Agency Performing Public Outreach?

Are there one or more wholesale agencies performing public outreach which can be counted to help your agency comply with the BMP? ○Yes ◉No

Enter the name(s) of the wholesale agency (comma delimited)

Is your agency performing public outreach?

Report a minimum of 4 water conservation related contacts your agency had with the public during the year.

Public Information Programs List

Did at least one contact take place during each quarter of the reporting year? ☑

Number of Public Contacts	Public Information Programs
6	Newsletter articles on conservation
2	Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets
7	Landscape water conservation media campaigns
3	General water conservation information
	Select a public contact

Contact with the Media

Are there one or more wholesale agencies performing media outreach which can be counted to help your agency comply with the BMP? ○Yes ⊙No

Enter the name(s) of the wholesale agency (comma delimited)

OR Retail Agency (Contacts with the Media)

Media Contacts List

Did at least one contact take place during each quarter of the reporting year? ☑

Number of Media Contacts	Did at least one contact take place during each quarter of the reporting year?	Media Contact Types
5		News releases
4		Newspaper contacts
1		Radio contacts
3		Television contacts
		Select a type of media contact
		Select a type of media contact

Is a Wholesale Agency Performing Website Updates?

Did one or more CUWCC wholesale agencies agree to assume your agency's responsibility for meeting the requirements of and for CUWCC reporting of this BMP? ○Yes ⊙No

Enter the name(s) of the wholesale agency (comma delimited)

Is Your Agency Performing Website Updates?

Enter your agency's URL (website address): www.palmdalewater.org

Describe a minimum of four water conservation related updates to your agency's website that took place during the year:

Press Releases on Landscape workshops
Water News (PWD's 6 months water news)
Rebate Applications
Rebate related information

Did at least one Website Update take place during each quarter of the reporting year? ⊙Yes ○No

Public Outreach Annual Budget

Enter budget for public outreach programs. You may enter total budget in a single line or brake the budget into discrete categories by entering many rows. Please indicate if personnel costs are included in the entry.

Category	Amount		Personnel Costs Included? If yes, check the box.	Comments	
water news	$50,000		☐		
General Media	$3,000		☐		
Brochures	$600		☐		
			☐		
			☐		
			☐		

Comments:

Due to the economic conditions the public outreach budget was reduced in 2010

Number of customers per year: 800-1000

Partnering with Other Utilities

Describe other utilities your agency partners with, including electrical utilities: Local water agencies-LACWW, QHWD, RCSD

Conservation Gardens

Describe water conservation gardens at your agency or other high traffic areas or new: The City of Palmdale has a water wise garden for public reveiw.

Landscape contests or awards

Describe water wise landscape contest or awards program conducted by your agency: not this year

Comments:

The fields in red are required.

Agency name: PALMDALE WATER DISTRICT

Reporting unit name (District name): PALMDALE WATER DISTRICK

Reporting unit number: 7034

Primary contact:

First name: CLAUDETTE

Last name: ROBERTS

Email: croberts@palmdalewater.org

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

Link to FAQs

2010

BMP 2.2 School Education Programs, Retail Agencies

View MOU

School Programs

Is a wholesale agency implementing school programs which can be counted to help your agency comply with this BMP? ○Yes ⊙No

Enter Wholesaler Names, separated by commas:

☐Materials meet state education framework requirements?

Description of Materials: PWd uses Project WET and California Water Awareness Campaign materials-water units 1-5

☐Materials distributed to K-6 Students?

Description of materials distributed to K-6 Students: PWD uses pages from Project WET and CWAC materials for information that goes along with PWD's scholl contests.

Number of students reached: 0

☐Materials distributed to 7-12 Students?

Description of materials distributed to 7-12 Students: PWD uses pages from Project WET and CWAC materials for information that goes along with PWD's scholl contests.

Number of Distribution: 0

Annual budget for school education program: $0.00

Description of all other water supplier education programs: Econmonic conditions reduced PWD's Education Budget to Zero for 2010.

School Program Activities

Classroom presentations:

Number of presentations: 0 Number of attendees: 0

Large group assemblies:

Number of presentations: 0 Number of attendees: 0

Children's water festivals or other events:

Number of presentations: 0 Number of attendees: 0

Cooperative efforts with existing science/water education programs (various workshops, science fair awards or judging) and follow-up:

Number of presentations: 0 Number of attendees: 0

Other methods of disseminating information (i.e. themed age-appropriate classroom loaner kits):

Description

Number distributed 0

Staffing children's booths at events & festivals:

Number of booths 0 Number of attendees 0

Water conservation contests such as poster and photo:

Description For over 15 years the District sponsored educational contests for the 27 elemenarey schools in PWD's service area, econmonic conditions made it necessary to reduce the budget to Zero in 2010.

Number distributed 0

Offer monetary awards/funding or scholarships to students:

Number Offered 0 Total Funding 0

Teacher training workshops:

Number of presentations 0 Number of attendees 0

Fund and/or staff student field trips to treatment facilities, recycling facilities, water conservation gardens, etc.:

Number of tours or field trips 2 Number of participants 60

College internships in water conservation offered:

Number of internships 0 Total funding 0

Career fairs/workshops:

Number of presentations 0 Number of attendees 0

Additional program(s) supported by agency but not mentioned above:

Description

Number of events (if applicable) 0 Number of participants 0

Total reporting period budget expenditures for school education programs (include all agency costs): 0

Comments

Economic conditions reduced the Education budget to zero, PWD felt keeping customer rebates was more important.

Appendix H

First Amended Cross-Complaint for Declaratory and Injunctive Relief and Adjudication of Water Rights









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Attorneys for Cross-Complainant LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 40

[See Next Page For Additional Counsel]

EXEMPT FROM FILING FEES UNDER GOVERNMENT CODE SECTION 6103

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES – CENTRAL DISTRICT

ANTELOPE VALLEY GROUNDWATER CASES

Included Actions:
Los Angeles County Waterworks District No. 40 v. Diamond Farming Co., Superior Court of California, County of Los Angeles, Case No. BC 325201;

Los Angeles County Waterworks District No. 40 v. Diamond Farming Co., Superior Court of California, County of Kern, Case No. S-1500-CV-254-348;

Wm. Bolthouse Farms, Inc. v. City of Lancaster, Diamond Farming Co. v. City of Lancaster, Diamond Farming Co. v. Palmdale Water Dist., Superior Court of California, County of Riverside, Case Nos. RIC 353 840, RIC 344 436, RIC 344 668

Judicial Council Coordination No. 4408

Santa Clara Case No. 1-05-CV-049053
Assigned to The Honorable Jack Komar

[Code Civ. Proc., § 382]

[PROPOSED] FIRST-AMENDED **CROSS-COMPLAINT** OF PUBLIC WATER SUPPLIERS FOR DECLARATORY AND INJUNCTIVE RELIEF AND ADJUDICATION OF WATER RIGHTS

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John Tootle, Bar No. 181822
2632 West 237th Street
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LAW OFFICES OF
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5 PARK PLAZA, SUITE 1500
IRVINE, CALIFORNIA 92614

Cross-Complainants California Water Service Company, City of Lancaster, City of Palmdale, Littlerock Creek Irrigation District , Los Angeles County Water Works District No. 40, Palmdale Water District, Rosamond Community Services District, Palm Ranch Irrigation District and Quartz Hill Water District (collectively, the "Public Water Suppliers") allege:

INTRODUCTION

1. This cross-complaint seeks a judicial determination of rights to all water within the adjudication area of the Antelope Valley Groundwater Basin as determined by the Court's Orders in this case (the "Basin"). An adjudication is necessary to protect and conserve the limited water supply that is vital to the public health, safety and welfare of all persons and entities that depend upon water from the Public Water Suppliers. For these reasons, the Public Water Suppliers file this cross-complaint to promote the general public welfare in the Antelope Valley; protect the Public Water Suppliers' rights to pump groundwater and provide water to the public; protect the Antelope Valley from a loss of the public's water supply; prevent degradation of the quality of the public groundwater supply; stop land subsidence; and avoid higher water costs to the public.

CROSS-COMPLAINANTS

2. California Water Service Company is a California corporation which extracts groundwater from the Basin to serve customers within the Basin.

3. The City of Lancaster is a municipal corporation located in the County of Los Angeles, and which produces and receives water for reasonable and beneficial uses, including overlying uses. The City of Lancaster further provides ministerial services to mutual water companies that produce groundwater from the Basin.

4. The City of Palmdale is a municipal corporation in the County of Los Angeles. The City of Palmdale receives water from the Basin.

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5. Littlerock Creek Irrigation District is a public agency which extracts groundwater from the Basin to serve customers within the Basin.

6. Los Angeles County Waterworks District No. 40 is a public agency governed by the Los Angeles County Board of Supervisors. District 40 has been lawfully organized to perform numerous functions, including providing Basin groundwater to the public in a large portion of the Antelope Valley. To this end, District 40 has constructed, maintained and operated a public waterworks system to supply water to the public.

7. Palmdale Water District is an irrigation district organized and operating under Division 11 of the California Water Code. Palmdale Water District extracts groundwater from the Basin for delivery to customers.

8. Palm Ranch Irrigation District Palm Ranch Irrigation District is a public agency which extracts groundwater from the Basin to serve customers within the Basin.

9. Rosamond Community Services District provides water to more than 3,500 residents of Kern County for domestic uses, fire protection, and irrigation. Rosamond has drilled and equipped wells to pump groundwater from the Basin. Rosamond has constructed, maintained and operated a public waterworks system to supply water to the public.

10. Quartz Hill Water District is a county water district organized and operating under Division 12 of the California Water Code. Quartz Hill extracts groundwater from the Lancaster Sub-basin of the Antelope Valley Groundwater Basin for delivery to customers.

CROSS-DEFENDANTS

11. The following persons and/or entities are the owners of, and/or are beneficial interest holders in real property within the geographic boundaries of the Basin. These persons

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and/or entitles claim overlying rights to extract water from the Basin, whether or not they have heretofore exercised such overlying rights: ABC Williams Enterprises LP, ACEH Capital, LLC, Jacqueline Ackermann, Cenon Advincula, Oliva M. Advincula, Mashallah Afshar, Antonio U. Agustines, Airtrust Singapore Private Limited, Marwan M. Aldais, Allen Alevy, Allen Alevy and Alevy Family Trust, Georgine J. Archer, Georgine J. Archer as Trustee for the Georgine J. Archer Trust, A V Materials, Inc., Guss A. Barks, Jr., Peter G. Barks, Ildefonso S. Bayani, Nilda V. Bayani, Big West Corp, Randall Y. Blayney, Melody S. Bloom, Bolthouse Properties, Inc., David L. Bowers, Ronald E. Bowers, Leroy Daniel Bronston, Marilyn Burgess, Laverne C. Burroughs, Laverne C. Burroughs, Trustee of the Burroughs Family Irrevocable Trust Dated August 1, 1995, Bruce Burrows, John and B. Calandri 2001 Trust, California Portland Cement Company, Calmat Land Co., Melinda E. Cameron, Castle Butte Dev Corp, Catellus Development Corporation, Bong S. Chang, Jeanna Y. Chang, Moon S. Chang, Jacob Chetrit, Frank S. Chiodo, Lee S. Chiou, M S Chung, City of Los Angeles, Carol K. Claypool, Clifford N. Claypool, W. F. Clunen, Jr., W. F. Clunen, Jr. as Trustee for the P C Rev Inter Vivos Trust, Consolidated Rock Products Co., County Sanitation District No. 14 of Los Angeles County, County Sanitation District No. 20 of Los Angeles County, Ruth A. Cumming, Ruth A. Cumming as Trustee of the Cumming Family Trust, Catharine M. Davis, Milton S. Davis, Del Sur Ranch LLC, Diamond Farming Company, Sarkis Djanibekyan, Hong Dong, Ying X Dong, Dorothy Dreier, George E. Dreier, Morteza M. Foroughi, Morteza M. Foroughi as Trustee of the Foroughi Family Trust, Lewis Fredrichsen, Lewis Fredrichsen as Trustee of the Friedrichsen Family Trust, Joan A. Funk, Eugene Gabrych, Marian Gabrych, Aurora P. Gabuya, Rodrigo L. Gabuya, GGF LLC, Genus LP, Betty Gluckstein, Joseph H. Gluckstein, Forrest G. Godde, Forrest G. Godde as Trustee of the Forrest G. Godde Trust, Lawrence A. Godde, Lawrence A. Godde and Godde Trust, Maria B. Gorrindo, Maria B. Gorrindo as Trustee for the M. Gorrindo Trust, Wendell G. Hanks, Andreas Hauke, Marilyn Hauke, Healy Enterprises, Inc., Walter E. Helmick, Donna L. Higelmire, Michael N. Higelmire, Davis L. and Diana D. Hines Family Trust, Hooshpack Dev Inc., Chi S. Huang, Suchu T. Huang, John Hui, Hypericum Interests LLC, Daryush Iraninezhad, Minoo Iraninezhad, Esfandiar Kadivar, Esfandiar Kadivar as Trustee of the Kadivar Family Trust, A. David Kagon, A. David

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Kagon as Trustee for the Kagon Trust, Jack D. Kahlo, Cheng Lin Kang, Herbert Katz, Herbert Katz as Trustee for the Katz Family Trust, Marianne Katz, Lilian S. Kauffman, Lilian S. Kaufman as Trustee for the Kaufman Family Trust, Kazuko Yoshimatsu, Barbara L. Keys, Barbara L. Keys as Trustee of the Barbara L. Keys Family Trust, Billy H. Kim, Illy King, Illy King as Trustee of the Illy King Family Trust, Kootenai Properties, Inc., Kutu Investment Co., Gailen Kyle, Gailen Kyle as Trustee of the Kyle Trust, James W. Kyle, James W. Kyle as Trustee of the Kyle Family Trust, Julia Kyle, Wanda E. Kyle, Fares A. Lahoud, Eva Lai, Paul Lai, Ying Wah Lam, Land Business Corporation, Richard E. Landfield, Richard E. Landfield as Trustee of the Richard E. Landfield Trust, Lawrence Charles Trust, William Lewis, Mary Lewis, Pei Chi Lin, Man C. Lo, Shiung Ru Lo, Lyman C. Miles, Lyman C. Miles as Trustee for the Miles Family Trust, Malloy Family Partners LP, Mission Bell Ranch Development, Barry S. Munz, Kathleen M. Munz, Terry A. Munz, M.R. Nasir, Souad R. Nasir, Eugene B. Nebeker, Simin C. Neman, Henry Ngo, Frank T. Nguyen, Juanita R. Nichols, Oliver Nichols, Oliver Nichols as Trustee of the Nichols Family Trust, Owl Properties, Inc., Palmdale Hills Property LLC, Norman L. Poulsen, Marilyn J. Prewoznik, Marilyn J. Prewoznik as Trustee of the Marilyn J. Prewoznik Trust, Elias Qarmout, Victoria Rahimi, R and M Ranch, Inc., Patricia A. Recht, Veronika Reinelt, Reinelt Rosenloecher Corp. PSP, Patricia J. Riggins, Patricia J. Riggins as Trustee of the Riggins Family Trust, Edgar C. Ritter, Paula E. Ritter, Paula E. Ritter as Trustee of the Ritter Family Trust, Roman Catholic Archbishop of Los Angeles, Romo Lake Los Angeles Partnership, Rosemount Equities LLC Series, Royal Investors Group, Royal Western Properties LLC, Oscar Rudnick, Rebecca Rudnick, Santa Monica Mountains Conservancy, Marygrace H. Santoro, Marygrace H. Santoro as Trustee for the Marygrace H. Santoro Rev Trust, San Yu Enterprises, Inc., Daniel Saparzadeh, Helen Stathatos, Savas Stathatos, Savas Stathatos as Trustee for the Stathatos Family Trust, Seven Star United LLC, Mark H. Shafron, Robert L. Shafron, Kamram S. Shakib, Donna L. Simpson, Gareth L. Simpson, Gareth L. Simpson as Trustee of the Simpson Family Trust, Soaring Vista Properties, Inc., State of California, George C. Stevens, Jr., George C. Stevens, Jr. as Trustee of the George C. Stevens, Jr. Trust, George L. Stimson, Jr., George L. Stimson, Jr. as Trustee of the George L. Stimson, Jr. Trust, Tejon Ranch, Mark E. Thompson A P

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C Profit Sharing Plan, Tierra Bonita Ranch Company, Tiong D. Tiu, Beverly J. Tobias, Beverly J. Tobias as Trustee of the Tobias Family Trust, Jung N. Tom, Wilma D. Trueblood, Wilma D. Trueblood as Trustee of the Trueblood Family Trust, Unison Investment Co., LLC, Delmar D. Van Dam, Gertrude J. Van Dam, Keith E. Wales, E C Wheeler LLC, William Bolthouse Farms, Inc., Alex Wodchis, Elizabeth Wong, Mary Wong, Mike M. Wu, Mike M. Wu as Trustee of the Wu Family Trust, State of California 50th District and Agricultural Association, and U.S. Borax, Inc.

12. The Public Water Suppliers are informed and believe, and thereon allege, that cross-defendant Roes 1 through 100,000 are the owners, lessees or other persons or entities holding or claiming to hold ownership or possessory interests in real property within the boundaries of the Basin; extract water from the Basin; claim some right, title or interest to water located within the Basin; or that they have or assert claims adverse to the Public Water Suppliers' rights and claims. The Public Water Suppliers are presently unaware of the true names and capacities of the Roe cross-defendants, and therefore sue those cross-defendants by fictitious names. The Public Water Suppliers will seek leave to amend this cross-complaint to add names and capacities when they are ascertained.

CLASS ACTION ALLEGATIONS

13. The Public Water Suppliers bring this action against all persons similarly situated. The class will be composed of all owners of land within the adjudication area that is not within the service area of a public entity, public utility, or mutual water company. The persons in this class are so numerous, consisting of approximately 65,000 parcels, that the joinder of all such persons is impracticable and that the disposition of their claims in a class action rather than in individual actions will benefit the parties and the court.

14. There is a well-defined community of interests in the questions of law and fact affecting the defendant class members in that they each allege an identical overlying right to take

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native groundwater from a common supply for their reasonable and beneficial use. As they each seek a common right, they have predominantly common issues of fact and law. Additionally, each class member will have common defenses against competing water rights including a claim by the United States that it has a Federal Reserved right. These questions of law and fact predominate over questions that affect only the individual class members. The claims and defenses of the class members and the class representative are typical of those of the class and the class representative will fairly and adequately represent the interests of the class.

THE UNITED STATES IS A NECESSARY PARTY TO THIS ACTION

15. This is an action to comprehensively adjudicate the rights of all claimants to the use of a source of water located entirely within California, *i.e.*, the Basin, and for the ongoing administration of all such claimants' rights.

16. The Public Water Suppliers are informed and believe, and on that basis allege, that the United States claims rights to the Basin water subject to adjudication in this action by virtue of owning real property overlying the Basin, including Edwards Air Force Base.

17. For the reasons expressed in this cross-complaint, the United States is a necessary party to this action pursuant to the McCarran Amendment, 43 U.S.C. § 666.

18. Under the McCarran Amendment, the United States, as a necessary party to this action, is deemed to have waived any right to plead that the laws of California are not applicable, or that the United States is not subject to such laws by virtue of its sovereignty.

19. Under the McCarran Amendment, the United States, as a necessary party to this action, is subject to the judgments, orders and decrees of this Court.

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HISTORY OF THE ANTELOPE VALLEY GROUNDWATER BASIN

20. For over a century, California courts have used the concept of a groundwater basin to resolve groundwater disputes. A groundwater basin is an alluvial aquifer with reasonably well-defined lateral and vertical boundaries.

21. The Antelope Valley Groundwater Basin is located in an arid valley in the Mojave Desert, about 50 miles northeast of the City of Los Angeles. The Basin encompasses about 1,000 square miles in both Los Angeles and Kern Counties, and is separated from the northern part of the Antelope Valley by faults and low-lying hills. The Basin is bounded on the south by the San Gabriel Mountains and on the northwest by the Tehachapi Mountains. The Basin generally includes the communities of Lancaster, Palmdale and Rosamond as well as Edwards Air Force Base.

22. Various investigators have studied the Antelope Valley and some have divided the Basin into "sub-basins." According to the Public Water Suppliers' information and belief, to the extent the Antelope Valley is composed of such "sub-basins," they are sufficiently hydrologically connected to justify treating them as a single source of water for purposes of adjudicating the parties' water rights.

23. Before public and private entities began pumping water from the Basin, its natural water recharge balanced with water discharged from the Basin. Its water levels generally remained in a state of long-term equilibrium. In approximately 1915, however, agricultural uses began to pump groundwater and since then, greatly increased agricultural pumping has upset the Basin's groundwater equilibrium causing a continuous decline in the Basin's groundwater storage.

24. Although private agricultural entities temporarily curtailed their pumping activities when groundwater levels were extremely low, agricultural pumping has increased overall during

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the past decade. During the same time, urbanization of the Antelope Valley has resulted in increased public demand for water.

25. Groundwater pumping in the Basin has never been subject to any limits. This lack of groundwater management caused the Basin to lose an estimated eight million acre feet of water over the past eighty years.

26. Uncontrolled pumping caused repeated instances of land subsidence. It is the sinking of the Earth's surface due to subsurface movement of earth materials and is primarily caused by groundwater pumping. The Public Water Suppliers are informed and believe, and thereupon allege, that portions of the Basin have subsided as much as six feet because of chronically low groundwater levels caused by unlimited pumping. The harmful effects of land subsidence observed in the Basin include loss of groundwater storage space, cracks and fissures on the ground's surface, and damage to real property. Land subsidence problems continue and will continue because of unlimited pumping.

27. The declining groundwater levels, diminished groundwater storage, and land subsidence damage the Basin, injure the public welfare, and threaten communities that depend upon the Basin as a reliable source of water. These damaging effects will continue, and likely worsen until the court establishes a safe yield for the Basin and limits pumping to the safe yield.

PUBLIC WATER SUPPLIERS SUPPLEMENT AND COMMINGLE THEIR SUPPLEMENTAL SUPPLY OF WATER WITH BASIN WATER

28. Due to the shortage of water in the Basin, certain Public Water Suppliers purchase State Water Project water from the Antelope Valley-East Kern Water Agency. State Project water originates in northern California and would not reach the Basin absent the Public Water Suppliers purchases.

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29. Public Water Suppliers purchase State Project water each year. They deliver the State Project water to their customers through waterworks systems. The Public Water Suppliers' customers use the State Project water for irrigation, domestic, municipal and industrial uses. After the Public Water Suppliers' customers use the water, some of the imported State Project water commingles with other percolating groundwater in the Basin. In this way, State Project water augments the natural supply of Basin water.

30. Public Water Suppliers depend on the Basin as their source of water. But for the Public Water Suppliers' substantial investment in State Project water, they would need to pump additional groundwater each year. By storing State Project water or other imported water in the Basin, Public Water Suppliers can recover the stored water during times of drought, water supply emergencies, or other water shortages to ensure a safe and reliable supply of water to the public.

THE BASIN HAS BEEN IN A STATE OF OVER-DRAFT FOR OVER FIVE YEARS

31. The Public Water Suppliers are informed and believe, and upon that basis allege, that the Basin is and has been in an overdraft condition for more than five (5) consecutive years before the filing of this cross-complaint. During these time periods, the total annual demand on the Basin has exceeded the supply of water from natural sources. Consequently, there is and has been a progressive and chronic decline in Basin water levels and the available natural supply is being and has been chronically depleted. Based on the present trends, demand on the Basin will continue to exceed supply. Until limited by order and judgment of the court, potable Basin water will be exhausted and land subsidence will continue.

32. Upon information and belief, the cross-defendants have, and continue to pump, appropriate and divert water from the natural supply of the Basin, and/or claim some interest in the Basin water. The Public Water Suppliers are informed and believe, and upon that basis allege, that cross-defendants' combined extraction of water exceeds the Basin's safe yield.

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33. Upon information and belief, each cross-defendant claims a right to take water and threatens to increase its taking of water without regard to the Public Water Suppliers' rights. Cross-defendants' pumping reduces Basin water tables and contributes to the deficiency of the Basin water supply as a whole. The deficiency creates a public water shortage.

34. Cross-defendants' continued and increasing extraction of Basin water has resulted in, and will result in a diminution, reduction and impairment of the Basin's water supply, and land subsidence.

35. Cross-defendants' continued and increasing extraction of Basin water has and will deprive the Public Water Suppliers of their rights to provide water for the public health, welfare and benefit.

THERE IS A DISPUTE AMONG THE PARTIES REGARDING THE EXTENT AND PRIORITY OF THEIR RESPECTIVE WATER RIGHTS

36. The Public Water Suppliers are informed and believe, and thereon allege, there are conflicting claims of rights to the Basin and/or its water.

37. The Public Water Suppliers are informed and believe, and thereon allege, that cross-defendants who own real property in the Basin claim an overlying right to pump Basin water. The overlying right is limited to the native safe yield of the Basin. The Public Water Suppliers allege that, because subsidence is occurring in the Basin, cross-defendants have been pumping, and continue to pump water in amounts greater than the Basin's safe yield.

38. The Public Water Suppliers are informed and believe, and thereon allege, they have appropriative and prescriptive rights to groundwater in the Antelope Valley Basin. The Public Water Suppliers are informed and believe, and thereon allege, they and/or their predecessors-in-interest, have pumped water from the Antelope Valley Basin for more than five

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years prior to the filing of this cross-complaint.

39. The Public Water Suppliers have pumped water from, and/or stored water in the Antelope Valley Basin, by reasonable extraction means. They have used the Basin and/or its water for reasonable and beneficial purposes; and they have done so under a claim of right in an actual, open, notorious, exclusive, continuous, uninterrupted, hostile, adverse use and/or manner for a period of time of at least five years and before filing this cross-complaint.

40. To provide water to the public, the Public Water Suppliers have and claim the following rights:

(A) The right to pump groundwater from the Antelope Valley Groundwater Basin in an annual amount equal to the highest volume of groundwater extracted by each of the Public Water Suppliers in any year preceding entry of judgment in this action;

(B) The right to pump or authorize others to extract from the Antelope Valley Groundwater Basin an amount of water equal in quantity to that amount of water previously purchased by each of the Public Water Suppliers from the Antelope Valley-East Kern Water Agency; and which has augmented the supply of water in the Basin in any year preceding entry of judgment in this action.

(C) The right to pump or authorize others to extract from the Antelope Valley Groundwater Basin an amount of water equal in quantity to that amount of water purchased in the future by each of the Public Water Suppliers from the Antelope Valley-East Kern Water Agency which augments the supply of water in the Basin; and

(D) The right to pump or authorize others to extract from the Antelope Valley Basin an amount of water equal in quantity to that volume of water injected into the Basin or placed within the Basin by each of the Public Water Suppliers or on behalf of any of them.

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FIRST CAUSE OF ACTION

(Declaratory Relief – Prescriptive Rights – Against All Cross-Defendants Except the United States And Other Public Entity Cross-Defendants)

41. The Public Water Suppliers re-allege and incorporate by reference each and all of the preceding paragraphs as though fully set forth herein.

42. For over fifty years, the California Supreme Court has recognized prescriptive water rights. The Public Water Suppliers allege that, for more than five years and before the date of this cross-complaint, they have pumped water from the Basin for reasonable and beneficial purposes, and done so under a claim of right in an actual, open, notorious, exclusive, continuous, hostile and adverse manner. The Public Water Suppliers further allege that each cross-defendant had actual and/or constructive notice of these activities, either of which is sufficient to establish the Public Water Suppliers' prescriptive rights.

43. Public Water Suppliers contend that each cross-defendant's rights to pump water from the Basin are subordinate to the Public Water Suppliers' prescriptive rights and to the general welfare of the citizens, inhabitants and customers within the Public Water Suppliers' respective service areas and/or jurisdictions.

44. An actual controversy has arisen between the Public Water Suppliers and cross-defendants, and each of them. Public Water Suppliers allege, on information and belief, that each cross-defendant disputes the Public Water Suppliers' contentions, as described in the immediately preceding paragraph.

45. Public Water Suppliers seek a judicial determination as to the correctness of their contentions and a finding as to the priority and amount of water they and each cross-defendant are entitled to pump from the Basin.

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SECOND CAUSE OF ACTION

(Declaratory Relief – Appropriative Rights – Against All Cross-Defendants)

46. The Public Water Suppliers re-allege and incorporate by reference each and all of the preceding paragraphs as though fully set forth herein.

47. Public Water Suppliers allege that, in addition or alternatively to their prescriptive rights, they have appropriative rights to pump water from the Basin.

48. Appropriative rights attach to surplus water from the Basin.

49. Surplus water exists when the pumping from the Basin is less than the safe yield. It is the maximum quantity of water which can be withdrawn annually from a groundwater Basin under a given set of conditions without causing an undesirable result. "Undesirable results" generally refer to gradual lowering of the groundwater levels in the Basin, but also includes subsidence.

50. Persons and/or entities with overlying rights to water in the Basin are only entitled to make reasonable and beneficial use of the Basin's native safe yield.

51. An actual controversy has arisen between the Public Water Suppliers and cross-defendants, and each of them. The Public Water Suppliers allege, on information and belief, that all cross-defendants, and each of them, seek to prevent the Public Water Suppliers from pumping surplus water.

52. The Public Water Suppliers seek a judicial determination as to the Basin's safe yield, the quantity of surplus water available, if any, the correlative overlying rights of each cross-defendant to the safe yield and a determination of the rights of persons an/or entities with

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overlying, appropriative and prescriptive rights to pump water from the Basin.

THIRD CAUSE OF ACTION

(Declaratory Relief – Physical Solution – Against All Cross-defendants)

53. The Public Water Suppliers re-allege and incorporate by reference each and all of the preceding paragraphs as though fully set forth herein.

54. Upon information and belief, the Public Water Suppliers allege that cross-defendants, and each of them, claim an interest or right to Basin water; and further claim they can increase their pumping without regard to the rights of the Public Water Suppliers. Unless restrained by order of the court, cross-defendants will continue to take increasing amounts of water from the Basin, causing great and irreparable damage and injury to the Public Water Suppliers and to the Basin. Money damages cannot compensate for the damage and injury to the Basin.

55. The amount of Basin water available to the Public Water Suppliers has been reduced because cross-defendants have extracted, and continue to extract increasingly large amounts of water from the Basin. Unless the court enjoins and restrains cross-defendants, and each of them, the aforementioned conditions will worsen. Consequently, the Basin's groundwater supply will be further depleted, thus reducing the amount of Basin water available to the public.

56. California law makes it the duty of the trial court to consider a "physical solution" to water rights disputes. A physical solution is a common-sense approach to resolving water rights litigation that seeks to satisfy the reasonable and beneficial needs of all parties through augmenting the water supply or other practical measures. The physical solution is a practical way of fulfilling the mandate of the California Constitution (Article X, section 2) that the water resources of the State be put to use to the fullest extent of which they are capable.

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57. This court must determine, impose and retain continuing jurisdiction in order to enforce a physical solution upon the parties who pump water from the Basin, and thereby prevent irreparable injury to the Basin. Available solutions to the Basin problems may include, but are not limited to, the court appointment of a watermaster, and monetary and metering and assessments upon water extraction from the Basin. Such assessments would pay for the purchase, delivery of supplemental supply of water to the Basin.

FOURTH CAUSE OF ACTION

(For Declaratory Relief – Municipal Priority – Against All Cross-Defendants)

58. The Public Water Suppliers re-allege and incorporate by reference each and all of the preceding paragraphs as though fully set forth herein.

59. The Public Water Suppliers have rights to pump water from the Basin to meet existing public water needs, and also to take increased amounts of Basin water as necessary to meet future public needs. The Public Water Suppliers' rights to Basin water exist both as a result of the priority and extent of their appropriative and prescriptive rights, and as a matter of law and public policy of the State of California: "It is hereby declared to be the established policy of this State that the use of water for domestic purposes is the highest use of water and that the next highest use is for irrigation." (*Water Code* §106.)

60. *Water Code* Section 106.5 provides: "It is hereby declared to be the established policy of this State that the right of a municipality to acquire and hold rights to the use of water should be protected to the fullest extent necessary for existing and future uses. . . ."

61. Under *Water Code* sections 106 and 106.5, the Public Water Suppliers have a prior and paramount right to Basin water as against all non-municipal uses.

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62. An actual controversy has arisen between the Public Water Suppliers and cross-defendants. The Public Water Suppliers allege, on information and belief, that cross-defendants dispute the contentions in Paragraphs 1 through 43, inclusive, of this cross-complaint. The Public Water Suppliers are informed and believe, and on that basis allege, that the majority of the cross-defendants pump groundwater from the Basin for agricultural purposes.

63. The Public Water Suppliers seek a judicial determination as to the correctness of their contentions and to the amount of water the parties may pump from the Basin. The Public Water Suppliers also seek a declaration of their right to pump water from the Basin to meet their reasonable present and future needs, and that such rights are prior and paramount to the rights, if any, of cross-defendants to use Basin water for irrigation purposes.

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FIFTH CAUSE OF ACTION

(Declaratory Relief – Storage Of Imported Water – Against All Cross-defendants)

64. The Public Water Suppliers re-allege and incorporate by reference each and all of the preceding paragraphs as though fully set forth herein.

65. The Public Water Suppliers purchase and use water from the State Water Project. State Project water is not native to the Basin. Importing State Project water decreases the Public Water Suppliers' need to pump water from the Basin. The Public Water Suppliers' purchase and delivery of State Project water is the reason it has been brought to the Basin. The Public Water Suppliers pay a substantial annual cost to import State Project water; this amount is subject to periodic increases.

66. The Public Water Suppliers allege there is underground space available in the Basin for storing imported State Project water.

67. As importers of State Project water, the Public Water Suppliers have the right to store imported State Project water underground in the Basin, and also have the sole right to pump or otherwise use such stored State Project water. The rights of cross-defendants, if any, are limited to the native supply of the Basin and to their own imported water. Cross-defendants' rights, if any, do not extend to water imported into the Basin by the Public Water Suppliers.

68. An actual controversy has arisen between the Public Water Suppliers and cross-defendants. The Public Water Suppliers allege, on information and belief, that cross-defendants dispute their contentions in Paragraphs 1 through 39, of this cross-complaint.

69. The Public Water Suppliers seek a judicial determination as to the correctness of their contentions that they may store imported State Project water in the Basin, recapture such imported State Project water, and that they have the sole right to pump or otherwise use such imported State Project water.

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SIXTH CAUSE OF ACTION

(Declaratory Relief – Recapture Of Return Flows From Imported Water Stored in The Basin – Against All Cross-defendants)

70. The Public Water Suppliers re-allege and incorporate by reference each and all of the preceding paragraphs as though fully set forth herein.

71. Some of the State Project water typically returns and/or enters the Basin, and will continue to do so. This water is commonly known as "return flows." These return flows further augment the Basin's water supply.

72. The Public Water Suppliers allege there is underground space available in the Basin to store return flows from imported State Project water.

73. The Public Water Suppliers have the sole right to recapture return flows attributable to their State Project water, or such water imported on their behalf. The rights of cross-defendants, if any, are limited to the Basin's native supply and/or to their imported water, and do not extend to groundwater attributable to the Public Water Suppliers' return flows.

74. An actual controversy has arisen between the Public Water Suppliers and cross-defendants. The Public Water Suppliers allege, on information and belief, that cross-defendants dispute their contentions in Paragraphs 1 through 43 of this cross-complaint.

75. The Public Water Suppliers seek a judicial determination as to the correctness of their contentions, and that they have the sole right to recapture return flows in the Basin, both at present and in the future.

SEVENTH CAUSE OF ACTION

(Unreasonable Use Of Water - Against All Cross-Defendants Except Public Entity Cross-Defendants)

76. The Public Water Suppliers re-allege and incorporate by reference each and all of the preceding paragraphs as though fully set forth herein.

77. The California Constitution (Article X, Section 2) provides the cardinal principle of California water law, superior to any water rights priorities and requires that water use not be unreasonable or wasteful. The reasonable use of water depends on the facts and circumstances of each case; what may be reasonable in areas of abundant water may be unreasonable in an area of scarcity; and, what is a beneficial use at one time may become a waste of water at a later time.

78. The Public Water Suppliers are informed and believe, and on that basis allege, that some cross-defendants' use of water is unreasonable in the arid Antelope Valley and therefore

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constitutes waste, unreasonable use or an unreasonable method of diversion or use within the meaning of the California Constitution (Article X, section 2). Such uses are thereby unlawful.

79. An actual controversy has arisen between the Public Water Suppliers and cross-defendants. The Public Water Suppliers allege, on information and belief, that the cross-defendants dispute their contentions in Paragraphs 1 through 43 of this Cross-Complaint.

80. The Public Water Suppliers seek a judicial declaration that cross-defendants have no right to any unreasonable use, unreasonable methods of use, or waste of water. Cross-defendants' rights, if any, must be determined based on the reasonable use of water in the Antelope Valley rather than upon the amount of water actually used.

EIGHTH CAUSE OF ACTION

(Declaratory Relief Re Boundaries Of Basin)

91. The Public Water Suppliers re-allege and incorporate by reference each and all of the preceding paragraphs as though fully set forth herein.

92. An actual controversy has arisen between the Public Water Suppliers and cross-defendants, and each of them, regarding the actual physical dimensions and description of the Basin for purposes of determining the parties rights to water located therein. The Public Water Suppliers allege, on information and belief, that cross-defendants dispute the Public Water Suppliers' contentions, as set forth in Paragraphs 1 through 38, inclusive, of this cross-complaint.

93. The Public Water Suppliers seek a judicial determination as to the correctness of their contentions and a finding as to the actual physical dimensions and description of the Basin.

PRAYER FOR RELIEF

WHEREFORE, the Public Water Suppliers pray for judgment as follows:

1. Judicial declarations consistent with the Public Water Suppliers' contentions in the

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