ROSAMOND
COMMUNITY SERVICES DISTRICT

URBAN WATER MANAGEMENT PLAN

2010

JUNE 2011

DWR's 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)		Sec. 1.1.2, Table. 1-1,
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)		Sec. 1.1.2
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)		Appendix B
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 B
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 B
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 B
57	Provide supporting documentation that the plan has been adopted as prepared or modified.	10642		Appendix B
58	Provide supporting documentation as to how the water supplier plans to implement its plan.	10643		Sec. 3, Sec. 5, 6, 7, 8 , 9 and 10

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 B
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 B
SYSTEM DESCRIPTION				
8	Describe the water supplier service area.	10631(a)		Sec. 1.2 Fig. 1-1 Fig. 1-2 Fig. 1-3
9	Describe the climate and other demographic factors of the service area of the supplier	10631(a)		Sec. 1.3 Table 1-2
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.	Table 1-3
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.	Table 1-3
12	Describe other demographic factors affecting the supplier's water management planning.	10631(a)		Sec. 1.3.2
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)		Sec. 8 Table 8-1 Table 8-2 Table 8-3

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
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	Not Applicable
3	Report progress in meeting urban water use targets using the standardized form.	10608.40		Required in 2015 UWMP
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.	Sec. 4 Table 4-1 Table 4-2 Table 4-3 Table 4-4 Table 4-5
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.	Table 1-1
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)		Sec. 9
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.	Sec. 2 Table 2-1
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.	Sec. 2.1

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
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)		Sec. 2.1
16	Describe the groundwater basin.	10631(b)(2)		Sec. 2.1.1
17	Indicate whether the groundwater basin is adjudicated? Include a copy of the court order or decree.	10631(b)(2)		Sec. 2.1.1
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)		Not Applicable
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)		Sec. 2.1.2
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)		Sec. 2.1.1 Table 2-1 Figure 2-1
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.	Table 2-2
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)		Sec. 3.1
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)		Sec. 3.2
31	Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and groundwater.	10631(i)		Sec. 3.4
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		Sec. 6

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
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)		Sec. 6.1.1
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)		Not applicable
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)		Table 6-3
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)		Sec. 6.1.2 Table 6-1 Table 6-4
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)		Table 6-2
50	Describe the actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633(f)		Sec. 6 Figure 6-1
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)		Sec. 6 Figure 6-1
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)		Sec. 7 Sec. 10
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)		Sec. 7
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)		Not Applicable

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
35	Provide an urban water shortage contingency analysis that specifies stages of action, including up to a 50-percent water supply reduction, and an outline of specific water supply conditions at each stage	10632(a)		Sec. 10.7 Table 10.3 Table 10.4
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)		Sec. 10.1
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)		Sec. 10.4 Sec. 10.5 Sec. 10.6
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)		Appendix E
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)		Sec. 10.7.1.1 Table 10.5
40	Indicated penalties or charges for excessive use, where applicable.	10632(f)		Appendix D
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)		Sec. 10.7.1.2
42	Provide a draft water shortage contingency resolution or ordinance.	10632(h)		Appendix E
43	Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)		Sec. 10.7.1.3
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	Sec. 3.4.3

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)		Sec. 7.3.1 Sec. 7.3.2 Sec. 7.3.3 Tables 7-1, 7-2, 7-3, 7-4, 7-5, 7-6, 7-7
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.	Sec. 5.2
27	Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMP.	10631(f)(3)		Sec. 5.2
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)		Not Available
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.	Sec. 5.2
32	Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29.	Not Applicable

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

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

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Section 1: Introduction

The 2010 Urban Water Management Plan for the Rosamond Community Services District (RCSD) has been prepared in cooperation with several other retail water agencies in the Antelope Valley. It fulfills the California Department of Water Resources requirements of an Urban Water Management Plan for RCSD.

This section presents a brief description of the provisions of the Urban Water Management Planning Act (UWMPA), provides a description of RCSD's service area characteristics, including population, climate, water demand, water supply, water conservation, water recycling, and reliability planning. RCSD is also a participant of the Antelope Valley Integrated Regional Water Management Planning Group (AVIRWMP, 2007) The 2007 Antelope Valley IRWMP can be found at http://www.avwaterplan.org.

1.1 The Urban Water Management Plan

In 1983, the California Legislature enacted the UWMPA (Assembly Bill (AB) 797; Water Code, Division 6, Part 2.6, Section 10610-10656). The UWMPA requires water suppliers serving more than 3,000 customers or water suppliers providing more than 3,000 acre-feet (AF) of water annually to prepare an Urban Water Management Plan (UWMP) to promote water demand management and efficient water use. RCSD serves 5,680 customers with 3,100 AF per year The UWMPA also requires water suppliers to develop, adopt, and file an UWMP (or update) every five years. A six-month extension was granted by the legislature for submittals of the 2010 Urban Water Management Plans to provide additional time for the water suppliers to address Senate Bill X7-7 (SB X7-7), which requires water retailers to reduce per capita water use by 20 percent by the year 2020 with an interim target of 10 percent reduction by 2015.

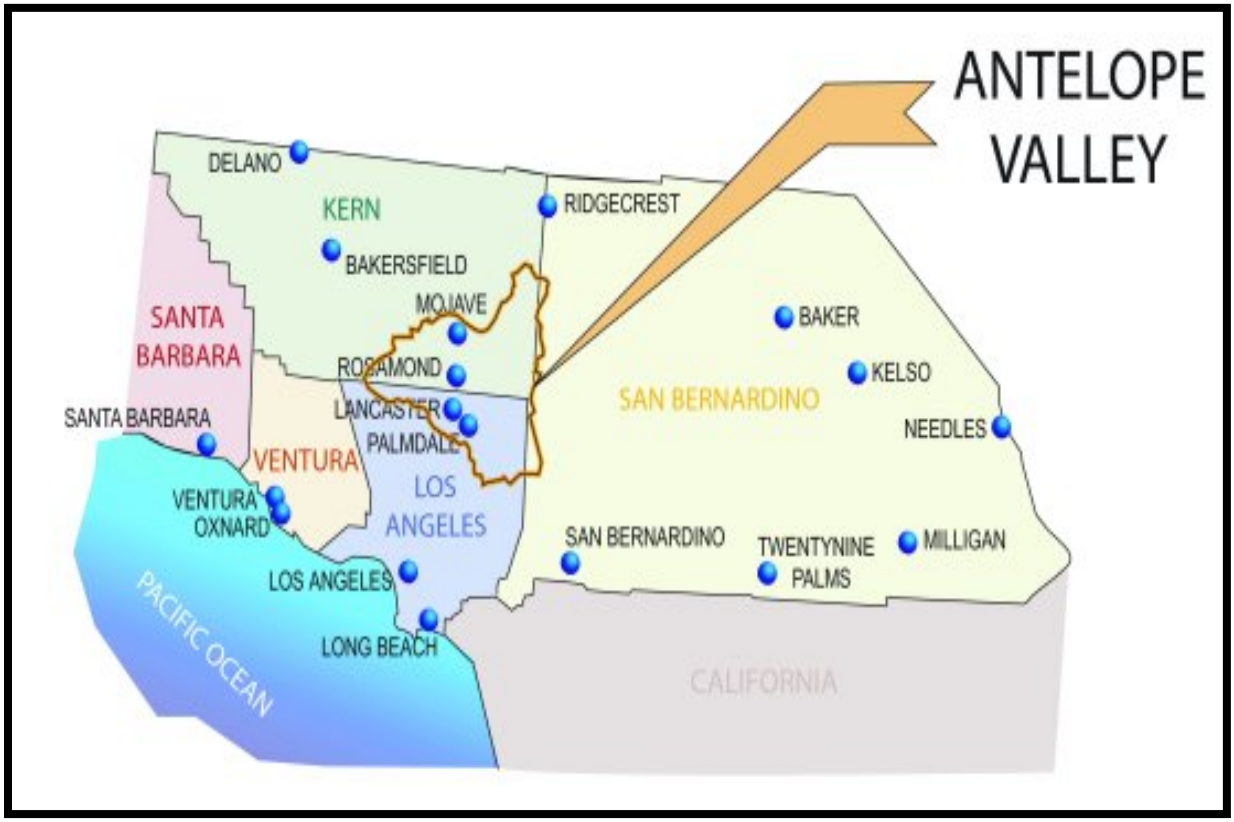
Recent changes approved in 2002 and 2004 include SB 1348, SB 1384, SB 1518, AB 105, and AB 318. SB 1348 requires that the California Department of Water Resources (DWR) consider the demand management activities of urban water suppliers in their grant and loan application evaluation. SB 1384 requires that urban water suppliers submit a copy of their UWMP to their wholesale supplier. This bill encourages coordination between the wholesale and retail agencies. SB 1518 requires additional information regarding the use of recycled water including a comparison of previously projected use to actual use to determine the effectiveness of recycled water initiatives. AB 105 requires urban water suppliers to submit a copy of their UWMP to the California State Library. AB 318 requires urban water suppliers to provide a discussion of the desalination opportunities available to them. This includes ocean water, brackish water, and groundwater desalination for use as a long-term supply. AB 1420 passed in 2007, addresses funding eligibility requirements of Section 10631.5 of the Water Code. In order for an urban water purveyor to be eligible for grant funding, the water purveyor must show implementation of water use efficiency and demand management measures. A copy of the UWMPA is included in Appendix A**.**

1.1.1 Purpose of the Plan

The requirements of an UWMP are designed to provide an effective management and planning tool for water agencies throughout California. It allows for a succinct summary of an agency's water supplies, demands, and plans to ensure future reliability. It also encourages the efficient management of water supplies by requiring a discussion of potential conservation best management practices, water transfers and exchanges, desalination, and recycled water opportunities.

Detailed discussions of current and future water supply are provided in conjunction with water supply strategies for RCSD to ensure a reliable future water supply. Figure 1-1 provides a vicinity map of the general Antelope Valley area of which RCSD is part.

FIGURE 1- 1: ANTELOPE VALLEY VICINITY MAP



1.1.2 Regional Approach in Preparation of the Plan

In an effort to improve coordination and facilitate inter-agency planning to maximize resources within the Antelope Valley, RCSD prepared this plan in conjunction with efforts of other agencies within the Antelope Valley. Table 1-1 provides a summary of the agency coordination for this plan.

TABLE 1-1: AGENCY COORDINATION

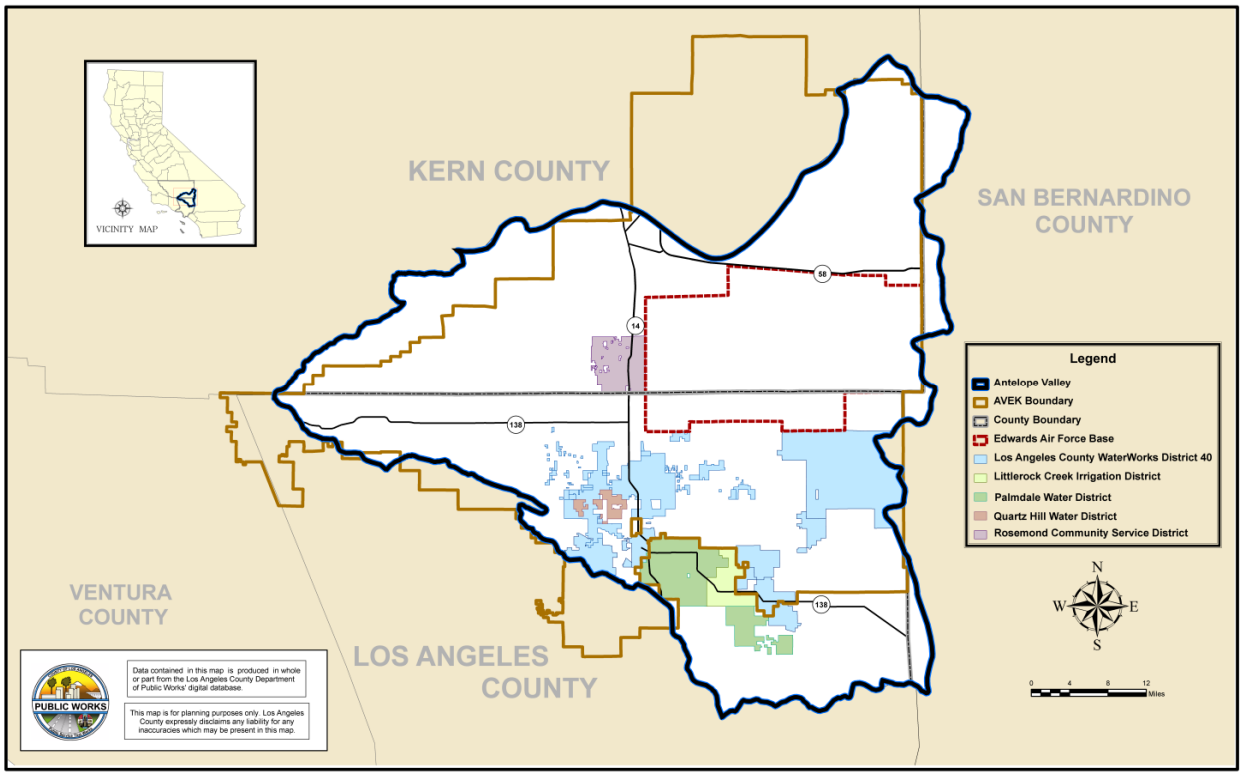
	Participated in developing the plan	Commented on the draft	Attended public meeting	Was contacted for assistance	Was sent a copy of the draft plan	Intention to adopt
District No. 40		X		X	X	
RCSD	X	X	X	X	X	X
QHWD		X		X	X	
PWD		X		X	X	
AVEK		X		X	X	
City of Palmdale		X		X	X	
City of Lancaster		X		X	X	
Littlerock Creek Irrigation District				X	X	
Los Angeles County Regional Planning		X		X	X	
Los Angeles County Sanitation Districts		X		X	X	

A 60-day notification was released prior to the public hearing. Prior to adoption, the UWMP was made available to the public for inspection and a public hearing was held on June 16, 2011 at RCSD's District Office. The UWMP was adopted by the RCSD's Board, and is subject to California Government Code pertaining to legal public noticing. The UWMP will be submitted to DWR, the State Library, and any city/county that received water from supplier, within 30 days after adoption. In addition, the UWMP will be available at RCSD during normal business hours for public review. A copy of the Notice for a Public Hearing, the resolution of adoption, the UWMP transmittal letters to DWR and the State Library, and notice that the UWMP is available for public review are included in Appendix B**.**

1.2 The Water Purveyors of the Antelope Valley

Below is a brief discussion of each water purveyor in the Antelope Valley. Figure 1-2 provides a map of the water purveyors' service areas.

FIGURE 1-2: ANTELOPE VALLEY BOUNDARIES



1.2.1 RCSD

RCSD was formed in 1966 under the Community Services District Law, Division 3, 61000 of Title 6 of the Government Code of the State of California. RCSD provides water, sewer, lighting service, and public park maintenance services to residential, commercial, industrial, and agricultural customers, and for environmental and fire protection uses. RCSD's service area boundary encompasses approximately 31 square miles of unincorporated residential, industrial, and undeveloped land in Kern County. The majority of the land located within the RCSD's service area is undeveloped. The developed property is centered around central Rosamond, with additional developed areas in the Tropico Hills.

1.2.2 District No. 40

Los Angeles County Water Works District No. 40 (District No. 40) was formed in accordance with Division 16 Sections 55000 through 55991 of the State Water Code to supply water for urban use throughout the Antelope Valley. It is governed by the Los Angeles County Board of Supervisors with the Waterworks Division of the County Department of Public Works providing administration, operation and maintenance of District No. 40's facilities. District No. 40 is comprised of eight regions serving customers in the cities of Lancaster and Palmdale (Regions 4 and 34), Pearblossom (Region 24), Littlerock (Region 27), Sun Village (Region 33), Rock Creek (Region 39), Northeast Los Angeles County (Region 35), and Lake Los Angeles (Region 38). Regions 4 and 34 are integrated and are operated as one system. Similarly, Regions 24, 27, and 33 are also integrated and operated as one system. The various regions were consolidated into a single district on November 2, 1993. District No. 40 encompasses approximately 554 square miles.

1.2.3 QHWD

Quartz Hill Water District (QHWD) is located in the southwest end of the Antelope Valley. It is 65 miles northwest of Los Angeles on the Antelope Valley Highway 14 and west of both Palmdale and Lancaster. QHWD also occupies an area of about 6 square miles located in the City of Lancaster and unincorporated portions of the County of Los Angeles. Incorporation of QHWD occurred in May 1954 and water service is provided to residential, commercial, industrial, and agricultural customers, and for environmental use and fire protection use.

1.2.4 PWD

Palmdale Water District (PWD) encompasses an area of about 187 square miles overlying more than 30 noncontiguous areas scattered throughout the southern Antelope Valley, including the communities of Juniper Hills and Llano. There are three noncontiguous areas in and around the City of Palmdale that can be considered PWD's principal areas for water supply, water service, and water resource management. These three areas are:

1. A primary service area of approximately 46 square miles. This area is PWD's primary area for water service, water supply, water treatment, water storage, and transmission and distribution facilities.

2. A federal land area of approximately 65 square miles upstream of PWD's Littlerock Dam within the Angeles National Forest. This area encompasses the drainage area of Littlerock Creek to Littlerock Dam. PWD's responsibilities include enhancing, protecting, and managing the quality and quantity of PWD's water supply at Littlerock Dam.

3. A noncontiguous secondary area of approximately two square miles, northwest of PWD's primary service area within the City of Palmdale. This area is also served by two small water purveyors: El Dorado Mutual Water Company and Westside Mutual Water Company (MWCs). Water is wheeled to the MWCs through facilities owned by the Antelope Valley-East Kern Water Agency (AVEK).

1.3 Service Area Characteristics

As previously mentioned the RCSD is located within the Antelope Valley.

1.3.1 Climate

Comprising a southwestern portion of the Mojave Desert, Antelope Valley ranges in elevation from approximately 2,300 feet to 3,500 feet above sea level. Vegetation native to the Antelope Valley are typical of the high desert and includes Joshua trees, saltbush, mesquite, sagebrush, and creosote bush. The climate is characterized by hot summer days, cool summer nights, cool winter days and cool winter nights. As shown in Table 1-2, mean monthly summer temperatures range from 57°F to 96°F, and mean monthly winter temperatures range from 32°F to 62°F. The growing season is primarily from April to October. Precipitation ranges from 2 inches per year along the northern boundary to 10 inches per year along the southern boundary.

TABLE 1-2: ANTELOPE VALLEY CLIMATE

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Standard Monthly Average ET_0 (inches)	2.02	2.61	4.55	6.19	7.3	8.85	9.77	8.99	6.52	4.66	2.68	2.05	66.19
Average Rainfall (inches)	1.52	1.65	1.28	0.46	0.13	0.04	0.05	0.18	0.20	0.32	0.68	1.39	7.9
Average Max Temperature (^oF)	58.3	62.1	67.2	73.9	81.7	90.1	95.5	96.9	91.3	80.3	67.1	58.7	77.1
Average Min Temperature (^oF)	32.4	35.6	39.0	43.7	50.6	57.7	64.9	63.7	57.4	48.0	37.9	32.6	47.0

Source: CIMIS data for Palmdale #197 station and Western Regional Climate Center, Palmdale Station.

1.3.1.1 Effects of Global Warming

In the recent draft update of DWR's Water Plan, 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 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 that are typically based on historic conditions. Difficulties that may arise include:

- Hydrologic conditions, variability, and extremes that are different than what current water systems were designed to manage.
- Changes in climate occurring too rapidly to allow sufficient time and information for managers to respond appropriately.
- Special efforts or plans may be required to protect against surprises and uncertainties.

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

1.3.2 Other Demographic Factors

Historically, land uses within the Antelope Valley have focused primarily on agriculture and military uses; however, the Valley is in transition from predominately agricultural uses to predominately residential and industrial uses. As this transition continues, water demand is expected to increase.

Growth in the Antelope Valley proceeded at a slow pace until 1985. However, between 1985 and 1990, the growth rate increased approximately 1,000 percent from the average growth rate between the years 1956 to 1985. Current and projected population for RCSD is shown in Table 1-3. Approximately 40,800 people will reside in RCSD's service area by 2035. This represents an increase of 130 percent from the current population.

TABLE 1-3 POPULATION PROJECTION

	2010	2015	2020	2025	2030	2035
RCSD	17,700	22,600	26,200	30,400	35,200	40,800

Source: Kern County Council of Governments, Sphere of Influence Study 2006 (assumes 3% population growth)

1.4 Contents of this Plan

The organization of this report and a brief description of the respective sections are outlined below.

Section 1: Introduction
This section provides a brief introduction of the UWMP, describes the planning process for this UWMP, and summarizes the key elements of this UWMP.

Section 2: Current and Future Water Supply Resources
This section describes the existing and planned water supplies available to RCSD. Supplies include groundwater, imported water, and recycled water. Projected supplies by source are presented for the next 25 years, in 5-year increments.

Section 3: Water Supply Strategy, Transfer and Exchange Opportunities
This section provides a discussion and evaluation of the various alternative water management strategies and supplies available to RCSD. Based on the evaluation, a recommended water supply strategy is presented to ensure a reliable source of supply for RCSD to meet the projected demand.

Section 4: Water Use Provisions
This section on water demand describes historic, current, and projected water usage within RCSD's service area. Historic water usage patterns and future water demand are determined by population and land use. In addition, the effects of weather and water conservation on historic water usage are discussed.

Section 5: Demand Management Measures
This section addresses the 14 water conservation measures called Demand Management Measures (DMMs), specified in the latest revision of the UWMPA, and describes current and future implementation of these water conservation measures within RCSD's service areas. The measures range from public information and education programs to physical solutions, such as residential plumbing retrofit, as well as policy/financial incentives, such as rebate programs and pricing policies. Many of the conservation measures are already being implemented by RCSD.

The DMMs are the same as the 14 urban Best Management Practices (BMPs) developed by the California Urban Water Conservation Council (CUWCC).

Section 6: Recycled Water Plan
This section presents the potential for both recycled water project implementation as well as an overview of potential recycled water application within RCSD's service area.

Section 7: Water Service Reliability Planning
This section presents the water reliability assessment for RCSD. It compares the total projected water demand with the expected water supply over the next 25 years, in 5-year increments. Assessments are also presented for a single dry year and multiple dry years (i.e., droughts). The purpose of this analysis is to determine whether there is a reasonable likelihood of meeting

projected future demands with the mix of resources currently under consideration. The conclusion of this section is that, if projected imported and local supplies are developed as indicated, no water shortages are anticipated by RCSD during the UWMP period and beyond.

Section 8: Per Capita Water Use Targets
SB X7-7 is a legislative mandate that requires the State to achieve a 20 percent reduction in urban per capita water use in California by December 31, 2020, with an interim target of 10 percent reduction by December 31, 2015. The legislation requires every urban water purveyor to develop: 1) baseline daily per capita water use; 2) urban water use targets; 3) interim urban water use targets; and 4) compliance daily per capita water use. This section presents data as it applies to RCSD meeting this requirement.

Section 9: Water Use Projections and Low 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 any city, county, or city and county in the service area of the water purveyor. Lower income is established by the State as 80 percent of the area's median income.

The projections are meant to assist water purveyors 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."

Section 10: Water Shortage Contingency Analysis
This section presents the activities to be utilized in the event of a catastrophic water supply interruption, such as an earthquake or a drought. Stages of action are described, including levels of rationing and reduction goals, priorities of use, water shortage stages and triggering mechanisms, water allotment methods, mandatory prohibitions on water use, and excessive use penalties.

1.5 List of Abbreviations and Acronyms

AF	Acre-feet
AFY	Acre-feet per year
AVEK	Antelope Valley-East Kern Water District
AVIRWMP	Antelope Valley Integrated Regional Water Management Plan
AVWB	Antelope Valley Water Bank
ASR	Aquifer Storage and Recovery
AB	Assembly Bill
BMPs	Best Management Practices
SWP	California State Water Project
CUWCC	California Urban Water Conservation Council
CII	Commercial/industrial/institutional
DMM	Demand Management Measure
DPH	Department of Public Health
DWR	Department of Water Resources
DAWN	Domestic-Agricultural Water Network
ERPs	Emergency Response Procedures
EIR	Environmental Impact Report

gpcd	Gallons per capita per day
gpd	Gallons per day
gpm	Gallons per minute
GIS	Geographical Information System
GAC	Granular Activated Carbon
District No. 40	Los Angeles County Waterworks District No. 40
LADWP	Los Angeles Department of Water and Power
MCL	Maximum Contamination Level
MOU	Memorandum of Understanding
MWD	Metropolitan Water District
mg/L	Milligrams per liter
mgd	Million gallons per day
MOCP	Monitoring and Operational Constraints Plan
M&I	Municipal and Industrial
MWC	Mutual Water Company
NACWA	National Association of Clean Water Agencies
NTU	Nephelometric Turbidity Units
PWD	Palmdale Water District
QHWD	Quartz Hill Water District
RCSD	Rosamond Community Services District
RWWTP	Rosamond Wastewater Treatment Plant
SB	Senate Bill
SRWBA	Semitropic Rosamond Water Banking Authority
Semitropic	Semitropic Water Storage District
SCE	Southern California Edison
SIC	Standard Industrial Classification
Reliability Report	2009 State Water Project Delivery Reliability Report
SWRU	Stored Water Recovery Unit
TBD	To Be Determined
THM	Trihalomethane
ULFT	Ultra low flush toilets
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UWMP	Urban Water Management Plan
UWMPA	Urban Water Management Planning Act
WCC	Water conservation coordinator
WET	Water Education for Teachers
WEL	Water Efficiency Landscape
WSCP	Water Shortage Contingency Plan

Section 2: Current and Future Water Supply Resources

This section provides a detailed discussion of the existing and planned water supplies available to RCSD. RCSD anticipates receiving water from local groundwater, imported water, and other sources such as recycled water. The projected supply by source is presented over the next 25 years, in 5-year increments.

2.1 Local Groundwater Supplies

Groundwater makes up approximately 39 percent of the total water supply for the entire Antelope Valley region and comes entirely from the Antelope Valley groundwater basin. The AVIRWMP meets the AB 3030 requirements and serves as the region's groundwater management plan. In 1995, RCSD also developed a groundwater management plan in accordance with AB 3030. Although the groundwater basin is not currently adjudicated, an adjudication process has begun. Since the basin is not adjudicated and has not been deemed in overdraft by DWR, there are currently no existing restrictions on pumping. However, water rights may be assigned as part of the adjudication process. A copy of RCSD's most recent Consumer Confidence Report is provided as Appendix C.

A summary of the historic pumping by RCSD provided in Table 2-1.

TABLE 2-1: GROUNDWATER PUMPING HISTORY (AF)

	2005	2006	2007	2008	2009	2010
RCSD	1,701	2,213	2,483	2,857	2,856	2,752
Percent of Total Supply	55	63	66	76	90	89

Percent of total supply assumes delivery of average year Table A amounts.

2.1.1 Source Characteristics

The Antelope Valley Groundwater Basin is comprised of two primary aquifers: the upper and lower aquifer. The upper aquifer is an unconfined aquifer. Separated from the principal aquifer by clay layers, the deep aquifer is generally considered to be confined. In general, the principal aquifer is thickest in the southern portion of the Valley near the San Gabriel Mountains, while the deep aquifer is thickest in the vicinity of the dry lakes on Edwards Air Force Base. The Antelope Valley Groundwater Basin is divided into twelve subunits. The subunits are Finger Buttes, West Antelope, Neenach, Willow Springs, Gloster, Chaffee, Oak Creek, Pearland, Buttes, Lancaster, North Muroc, and Peerless. The groundwater basin is principally recharged by deep percolation of precipitation and runoff from the surrounding mountains and hills. Figure 2-1 depicts the Antelope Valley groundwater basin subunit boundaries.

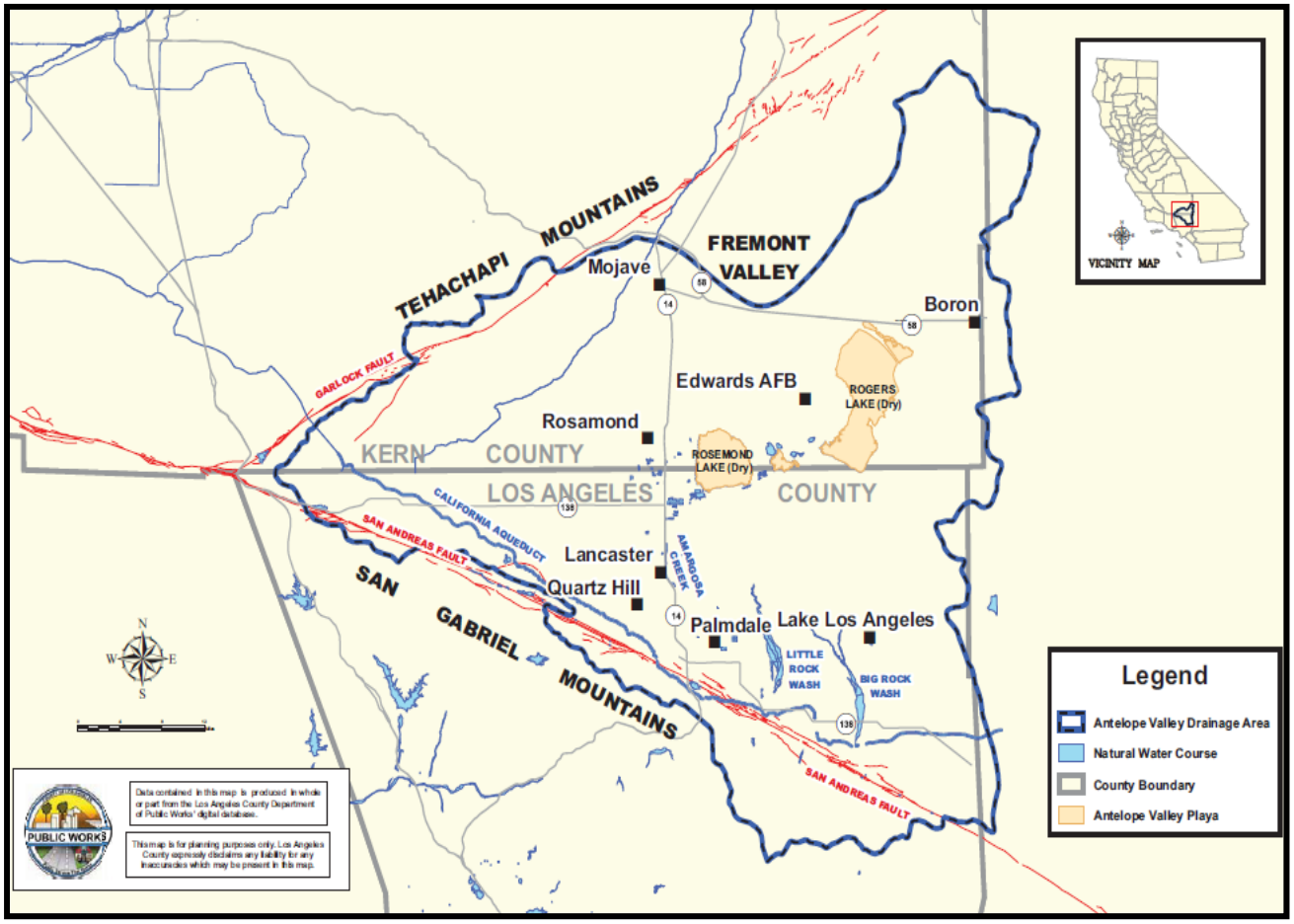


Figure 2-1: Antelope Valley Hydrologic Features

2.1.2 Availability of Supply

Groundwater extractions between 1926 and 1972 resulted in the overdraft of the aquifer that caused groundwater levels to drop 200 to 300 feet or an average of four to six feet per year. The importation of the State Water Project (SWP) supply has since stabilized groundwater levels in some areas of the Antelope Valley. According to RCSD records, the water table continued to decline an average of two to three feet per year until 1995. With the increased usage of surface water sources and decreasing deep well usage, the water table has been rising an average of two to three feet per year. Studies performed by the United States Geological Survey (USGS) and DWR indicate that groundwater levels appear to be generally dropping in the eastern areas of the basin and rising in the western areas.

RCSD has been actively participating in the Antelope Valley Water Bank Project. The Antelope Valley Water Bank (AVWB) aims to enhance water reliability and flexibility through a water bank that is both cost-effective and environmentally sound. The AVWB is helping to reduce the rate of aquifer overdraft and encourages conjunctive use not only by retailers within the Antelope Valley region but throughout all of southern California. The AVWB helps to implement a water market/bank as a mechanism to make water available to meet RCSD's existing and future demands. The groundwater bank provides up to 500,000 AF of groundwater storage. The annual intake and return capacities are 10,000 acre-feet per year (AFY).

TABLE 2-2: GROUNDWATER EXTRACTION CAPACITY (AF/YEAR)

	2015	2020	2025	2030	2035
RCSD	4,600	4,600	4,600	4,600	4,600

Note: All numbers are rounded to the nearest 100 AF.

RCSD currently operates three wells for a total maximum pumping capacity of 2,825 gallons per minute (gpm). It is anticipated that one new well with an 800 to 1,000 gpm capacity is planned to come online in the near future and will aim in increasing the maximum pumping capacity

2.2 Wholesale (Imported) Water Supplies

The only imported water supply for RCSD is SWP water contracted through the AVEK. Water imported to the Antelope Valley through the SWP first became available in 1978. The SWP is the nation's largest state-built water and power development and conveyance system. It includes pumping and power plants, reservoirs, lakes, storage tanks, canals, tunnels, and pipelines that capture, store, and convey water to 29 water agency contractors.

The SWP is operated by DWR for the benefit of SWP contractors. The SWP includes 660 miles of aqueduct and conveyance facilities, from Lake Oroville in the north to Lake Perris in the south. The SWP is contracted to deliver a maximum 4.17 million AFY of Table A water to 29 contracting agencies. Table A water is a reference to the amount of water listed in "Table A" of the contract between the SWP and the contracting agencies and represents the maximum amount of water an agency may request each year.

AVEK, the third largest SWP contractor, has a current contractual Table A Amount of 141,400 AFY. AVEK provides this water for both agricultural and M&I use. AVEK's three largest municipal and industrial (M&I) customer agencies are District No. 40, RCSD, and QHWD.

Table 2-3 provides a summary of the historic and current imported water volumes to RCSD.

TABLE 2-3: HISTORICAL IMPORTS FROM SWP (AF)

	2005	2006	2007	2008	2009	2010
RCSD	1,375	1,302	1,255	893	307	261

Each year by October 1, the SWP contractors provide DWR with a request for water delivery up to their full Table A Amount. Actual delivery from DWR may vary from the request due to variances in supply availability resulting from hydrology, storage availability, regulatory or operating constraints, etc. When supply is limited, a reduction of the requested amount is determined per the water allocation rules governing the SWP.

Except for fluctuations in the availability of SWP water, during drought-related or regulatory supply interruptions within the state, sufficient infrastructure has been constructed adequate for RCSD to use SWP water to meet all water demands in its service area even during peak summer demand periods. It is estimated that approximately 80 percent of AVEK's allocation each year will be available to serve its retail agencies, of which RCSD receives approximately 2 percent. This percentage was taken from AVEK's 2008 UWMP and is based on the amount of property taxes paid by customers of AVEK and the historic amount of water each retailer has purchased from AVEK. The percentage is subject to change dependent on the development

and usage patterns in the Antelope Valley in the future but represents the best available estimate for planning purposes.

Table 2-4 provides a summary of the SWP water available to RCSD assuming an average water year allocation.

TABLE 2-4: RCSD DEMAND PROJECTIONS FOR IMPORTED WATER (AF) FROM AVEK

	Actual Use in 2010	2015	2020	2025	2030
RCSD	261	1,700	1,700	1,700	1,700

Note: All numbers are rounded to the nearest 100 AF.

2.2.1 Source Characteristics

The SWP watershed encompasses the Feather River. Rain and melting snow run off mountainsides and into waterways that lead into Lake Oroville in Butte County. Lake Orville is part of a complex that includes three power plants, a forebay, and an afterbay.

When water is needed, it is released from Lake Oroville into the Feather River. It travels down the river to the Sacramento River, the state's largest waterway. Water flows down the Sacramento River into the Sacramento-San Joaquin Delta. From the Delta, water is pumped into the California Aqueduct. The Antelope Valley is served by the East Branch of the California Aqueduct.

2.2.2 Reliability of Supply

DWR reports in their 2009 State Water Project Delivery Reliability Report (Reliability Report) that existing SWP facilities will on average receive 60 percent of their full Table A amount under current demand conditions and 60 percent of their full Table A amount under 2029 demand conditions.

Availability of SWP water varies from year to year, depending on precipitation, regulatory restrictions, legislative restrictions, and operational conditions, and is especially unreliable during dry years. The DWR Reliability Report anticipates a minimum delivery of 7 percent for a single dry year under current conditions and an 11 percent for a single dry year under 2029 demand conditions. Over multiple-year dry periods, average annual Table A deliveries vary from 34 percent to 36 percent of the maximum Table A amount.

Tables 2-5 and 2-6 provide a summary of the availability of wholesale water for average, single dry, and multi-dry water years.

TABLE 2-5: WHOLESALER IDENTIFIED AND QUANTIFIED EXISTING AND PLANNED SOURCES OF WATER AVAILABLE FOR AVERAGE/NORMAL WATER YEARS

Wholesaler (Supply Source)	2010	2015	2020	2025	2030	2035
AVEK (SWP)	141,400	141,400	141,400	141,400	141,400	141,400
Table A Supply (AF)[(a)]	56,590	70,700	84,840	84,840	84,840	84,840
Percent of Table A Amount	40	50	60	60	60	60

Note:
(a) The percentages of Table A Amount projected to be available are from Table B.2 of DWR's 2009 State Water Project Delivery Reliability Report (August 2010).

TABLE 2-6: WHOLESALER WATER RELIABILITY

AVEK (SWP Supply)		Single Dry Year	Multiple Dry Years			
			Year 1	Year 2	Year 3	Year 4
2010	Table A Supply (AF)[(a)]	9,898	50,904	50,904	49,490	48,076
	Percent of Table A Amount	7	36	36	35	34
2029	Table A Supply (AF)[(a)]	15,554	53,732	53,732	50,904	49,490
	Percent of Table A Amount	11	38	38	36	35

Note:
(a) The percentages of Table A Amount projected to be available are from Table B.2 of DWR's 2009 State Water Project Delivery Reliability Report (August 2010).

TABLE 2-7: BASIS OF WATER YEAR DATA

Water Year Type	Basis of Data	Similar Historic Year
Average Water Year	Average water year is based on 60 percent of AVEK's Table A amount less AVEK's other demand outside the Antelope Valley. Base years for the Average, Single-Dry and Multiple-Dry Water Years were determined from the analyses presented in the DWR's 2009 SWP Delivery Reliability Report (August 2010).	1922-2003
Single- Dry Year		1977
Multiple-Dry Years		1931-1934

Historically, RCSD has not experienced inconsistent supply from AVEK's SWP contract.

2.2.3 Water Quality

2.2.3.1 State Water Project Water from AVEK

SWP water is treated by four AVEK facilities prior to delivery to the water purveyors. The Quartz Hill Water Treatment Plant was the first plant built by AVEK. The treatment plant receives water by gravity from the California Aqueduct. Screening and metering are provided at the head of the plant, followed by chemical addition, flash mixing, tapered energy flocculation, clarification utilizing plate settlers and sediment removal, dual media filters, and ozone/chlorine disinfection. Treated water is stored in two 9.2 million gallon reservoirs which supply water by gravity into the distribution system. Decanted water from the solids removal process is returned to the plant influent and recycled. After the completion of the third expansion in 2010, the Quartz Hill Water Treatment Plant became capable of producing 90 million gallons per day (mgd), enough to serve the needs of 388,000 people. AVEK is planning a conversion of their disinfection systems from chlorine to chloramines or Granular Activated Carbon (GAC). This conversion will significantly reduce the levels of trihalomethanes (THMs) from the treated water.

A 10 mgd expansion of the Eastside Water Treatment Plant located between Littlerock and Pearblossom was completed in late 1988. It can now serve the needs of about 44,000 people.

The 14 mgd Rosamond Water Treatment Plant was established to support the needs of consumers in southeastern Kern County, an area that includes Rosamond, Mojave, California City, Edwards Air Force Base and Boron. The Rosamond Water Treatment Plant is capable of providing water for 60,000 people.

The treated water is generally considered to be of excellent quality.

2.3 Summary of Supplies

Table 2-8 provides a summary of existing and planned water supply sources from RCSD during an average water year over a 25-year planning period, in 5-year increments.

TABLE 2-8: CURRENT AND PLANNED WATER SUPPLIES (AFY)

Water Supply Sources	Actual 2010	2015	2020	2025	2030	2035
RCSD						
Groundwater[(a)]	2,800	4,600	4,600	4,600	4,600	4,600
SWP[(b)]	300	1,700	1,700	1,700	1,700	1,700
Recycled Water[(c)]	0	0	1,000	1,000	1,000	1,000
Groundwater Banking[(d)]	0	0	1,000	1,000	1,000	1,000
Anticipated New Supply[(d)]	0	0	500	500	500	500
Total	**3,100**	**6,300**	**8,800**	**8,800**	**8,800**	**8,800**

Note: All numbers are rounded to the nearest 100 AF.
(a) Assumes groundwater available at the existing pumping rate.
(b) SWP water delivery at 60 percent of Table A amount available to the AVEK.
(c) Recycled Water is discussed in Section 6.
(d) Transfers, Groundwater Banking and Anticipated New Supplies are discussed in Section 3.

2.4 Economic Analysis of Supplies

This subsection provides an economic evaluation of the existing supplies available to RCSD. Further, these sources are ranked based on this analysis and consideration of source reliability. Table 2-9 provides a summary of the unit costs for each of the supplies available to RCSD. As shown in this table, groundwater is the most cost-effective and most reliable source available to the Antelope Valley. The 90 percent reliability takes into account a 10 percent reduction in supply for aquifer "leave-behind" and rehabilitation.

TABLE 2-9: ECONOMIC SUMMARY OF THE EXISTING SUPPLIES FOR RCSD

	Cost per AF	Reliability Factor[(a)]	Ranking
RCSD			
Groundwater	$110	90	1
Imported Water	$296	60	2

Note:
(a) Reliability factor for imported water is based on 2009 DWR Reliability Report; Reliability factor for groundwater is based on the assumption that adjudications currently in progress will likely reduce the available groundwater below current pumping levels unless replenishment occurs.

Section 3: Water Supply Strategy, Transfer, and Exchange Opportunities

3.1 Transfer and Exchange Opportunities

RCSD is continually evaluating various transfer and exchange opportunities as they arise. At this time there are no viable opportunities for RCSD.

3.2 Planned Water Supply Projects and Programs

Based on projected growth from population and land use build-out, supply needs for the entire RCSD service area are expected to increase approximately 130 percent from 2010 to 2035. The main driver for these needs is presumed to be single family residential development. However, projected future needs, particularly those in the near-term, will continue to be monitored and adjusted in response to changes in the rate of housing development as well as major new industrial customers such as solar and other power facilities.

The Antelope Valley as a whole will require new projects that provide additional supply in order to meet the projected demand, but at this time, no specific projects have been selected. RCSD is evaluating projects that would help to offset demand on imported water supplies and other projects that will contribute to a reliable source of supply. Future water supply project plans will focus on the following:

- Limit dependence on imported water by maximizing use of recycled water.
- Expand conservation efforts.
- Acquire and/or develop new imported supplies, funded by developer fees.
- Create local surface spreading facilities to percolate untreated SWP water.
- Add additional groundwater extraction capacity to recover stored water.
- Pursue an exchange program with agriculture interests to replace their groundwater use with recycled water thereby providing additional potable groundwater for municipal use.
- Construct new infrastructure to deliver recycled water for non-potable uses.
- Conduct further project development to use recycled water to replenish the groundwater basin.

3.3 Acquisition of New Water Supply

Even with the DMMs addressed in Section 5, and the increased use of recycled water to reduce existing potable water demands discussed in Section 6, the committed demands and existing water supplies are approximately equal and additional water supplies will have to be acquired and imported into the Antelope Valley. In order to acquire these additional water supplies, RCSD is working with AVEK to establish a Developer Fee on new developments that will be used to acquire additional imported water supplies. AVEK is currently working with its retailers and the development community to design the fee and procedure for assessing it. The proposed framework for assessing this fee is as follows:

1. Developer requests a will-serve letter from retailer for project.
2. Retailer informs developer of the volume of new water supply needed to serve project.
3. Developer pays the developer fee to AVEK for the volume of new water supply.

4. AVEK provides developer with a letter of commitment to retailer for the new water supply.
5. AVEK acquires new water supply.
6. AVEK designates new water supply for development to the retailer serving the development over and above the retailer's allocation of AVEK's supplies.
7. AVEK adjusts the fee annually based on the current market rate for permanent water transfers.
8. Retailer ensures reliability of the new water supply.

3.4 Stormwater and Desalination

Potential water supply alternatives that are available to RCSD besides those mentioned above include stormwater reuse and desalination. Because the Antelope Valley is a closed hydrologic system, all stormwater entering the basin either infiltrates into the groundwater basin or evaporates. RCSD will continue to support onsite reuse of stormwater by customers. In addition, the Antelope Valley region of which RCSD is part of, was awarded grant funds from Proposition 84 to update the AVIRWMP to include a regional flood management plan. A major component of the regional flood management plan will be identifying regional areas that can be used for large- scale stormwater retention and groundwater basin recharge in order to increase the amount of annual returns flows to the groundwater basin.

The UWMPA also requires water agencies to consider options for desalination. RCSD is located a considerable distance from the Pacific Ocean so constructing a transmission main to move either sea water or desalinated water directly to the Antelope Valley is cost prohibitive at this time. However, one option that RCSD can consider when acquiring new water supplies is partnering with a SWP contractor situated in close proximity to the ocean. Under such an arrangement, RCSD could use funds collected from the developer fee to contribute financially to the construction of a desalination facility, and in turn, the partnering agency would transfer a portion of their SWP water rights to RCSD.

3.4.1 Aquifer Characteristics

The Antelope Valley is a closed basin and is divided into twelve sub-basins by fault zones and other physical boundaries to water movement (Bloyd, 1967). The majority of RCSD's customers are located within the Lancaster sub-basin. The Lancaster sub-basin is alluvial and lacustrine in nature, and is characterized by unconfined (upper) and confined (lower) aquifers that are separated by a clay layer that is between 200 and 300 feet thick. The upper aquifer is a primary source of potable water due to water quality issues contained in the lower aquifer.

3.4.2 Availability of Supply

The Antelope Valley groundwater basin is estimated to have 68 million AF of storage, of which 20 million AF is currently available. Approximately 55 million AF of groundwater was estimated to remain in storage as of 1975. This stored water, however, may not be entirely accessible due to (1) uneconomical pumping depths, (2) distance between high production areas of the basin and current users, (3) water quality issues, and (4) the potential for causing land subsidence.

The principal source of recharge of the groundwater basin is runoff from the San Gabriel Mountains to the south of the Antelope Valley, and is typically recharged in the soft creek beds of ephemeral streams near the mountains. Numerous studies have been conducted to estimate the natural recharge since 1924, some based on little data. The most recent studies estimate natural recharge at 31,200 to 59,100 AFY (USGS, 1993).

3.4.3 Water Quality

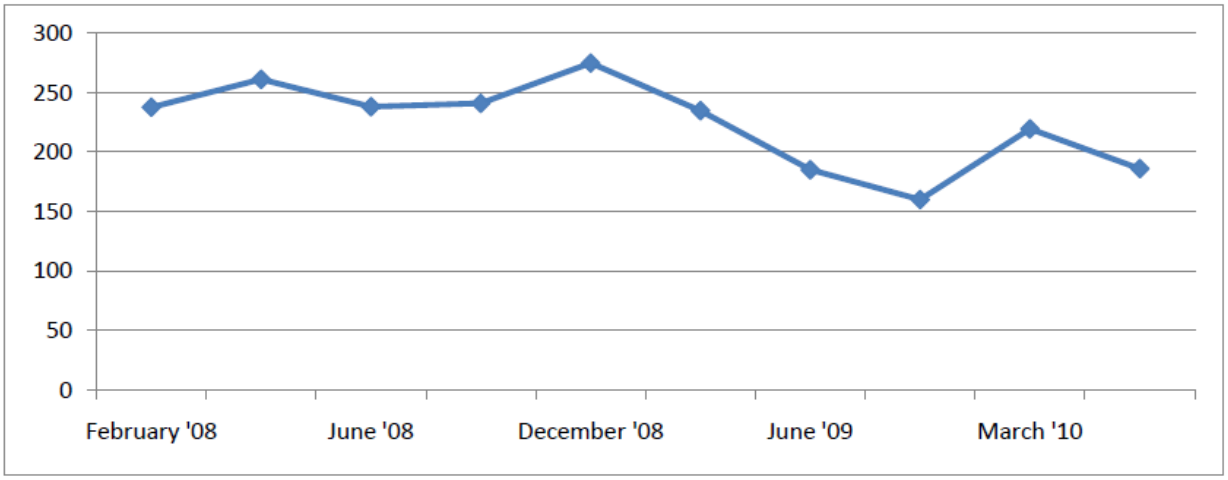
RCSD is a participant of the AVWB Groundwater Monitoring Program and is continually monitoring the water quality of its groundwater supplies. This program was developed as part of the AVWB Program's Environmental Impact Report (Final EIR, September 2006). The focus of this program is to monitor the historical and current trends in both groundwater quality and water levels. This program has been ongoing for three years. The Monitoring and Operational Constraints Plan (MOCP) for the AVWB, finalized and approved by the AVWB Monitoring Committee in April 2009, is utilized to monitor surface water and groundwater in the vicinity of the AVWB.

Recharge of surface water commenced at the AVWB beginning in 2010. In accordance with the MOCP, RCSD continued groundwater monitoring and, in addition, began surface water monitoring during recharge operations at the AVWB. The MOCP further specifies the monitoring schedule requirements during periods of recovery.

Groundwater level measurements are conducted semi-annually (spring and fall) and monthly during recharge operations. Groundwater quality sampling is conducted annually and monthly during recharge operations.

All data received to date indicate that the groundwater supplies to RCSD are reliable with respect to water quality.

Figure 3-1: Average Total Dissolved Solids Concentrations - Groundwater



Groundwater quality samples are analyzed for the parameters outlined in Table 3-1, below.

Table 3-1: Water Quality Analytical Suite

Parameter	Method
Asbestos	EPA 600/4-83
Cyanide	Various
EDB & DBCP	EPA 504.1
Fecal Coliform	SM9223B
General Mineral	Various
Alkalinity	2320B
Boron	EPA 200.7

Parameter	Method
Calcium	EPA 200.7
Carbonate	EPA 310.1
Chloride	SM 4500
Copper	EPA 200.7
Aggressive Index	4500-H B
Bicarbonate	EPA 310.1
Fluoride	EPA 340.1
Foaming Agents	EPA 425.1
Hydroxide	2320B
Iron	EPA 200.7
Langlier Index	4500-H B
Magnesium	EPA 200.7
Manganese	EPA 200.7
Nitrate as NO_3	EPA 300
Nitrite as N	SM 4500
pH	Field
Potassium	EPA 200.7
Sodium	EPA 200.7
Sodium Absorption Ratio	NA
Electrical Conductivity	Field
Sulfate	EPA 375.4
Total Dissolved Solids	EPA 160.3
Total Hardness	EPA 200.7
Zinc	EPA 200.7
General Physical	Various
Color	EPA 110.2
Odor	EPA 140.1
Turbidity	EPA 180.1
Gross Alpha	EPA 900.0
Metals	Various
Aluminum	EPA 200.7
Antimony	EPA 200.7
Arsenic	EPA 200.8
Barium	EPA 200.7
Beryllium	EPA 200.8
Cadmium	EPA 200.7
Chromium	EPA 200.7
Lead	EPA 200.8
Mercury	EPA 245.1
Nickel	EPA 200.7
Selenium	EPA 200.8
Silver	EPA 200.7

Parameter	Method
Thallium	EPA 200.8
Vanadium	EPA 200.8
Methyl tert-butyl ether (MTBE)	EPA 524.2
Nitrogen, Phosphorus, Pesticides	EPA 507
Perchlorate	EPA 314.0
Total Phosphorus	SM4500-P E
Uranium	EPA 908.0

All 2010 groundwater quality monitoring results were below the detection limit for all organic compounds, foaming agents, and asbestos. The results of other parameters are discussed by parameter group below.

3.4.3.1. Major Minerals

Fluoride

Fluoride is released into the environment through natural activities, such as erosion of natural deposits or through other human actions, such as being discharged from fertilizer and/or aluminum factories. The primary maximum contaminant level (MCL) as set by the USEPA is 4.0 (milligrams per liter) mg/L and the secondary MCL from the United States Environmental Protection Agency (USEPA) is 2.0 mg/L. No wells exceeded the primary MCL.

3.4.3.2. Nutrients

Nitrate

The DPH has set the MCL for nitrate at 45 mg/L as nitrate, or the equivalent of 10 mg/L as nitrogen. The 2010 groundwater quality monitoring results indicate that nitrate levels in the groundwater basin are below the MCL.

3.4.3.3. Metals and Inorganics

Several metals have never tested above the laboratory detection limit (2008-2010). These include antimony, beryllium, cadmium, mercury, nickel, perchlorate, selenium, silver, and thallium.

Several other metals were detected in at least one sample, but the detection did not exceed the applicable MCL. These metals include barium, copper, cyanide, lead, vanadium, and zinc.

Aluminum

Aluminum has a primary MCL of 1.0 mg/L. There are baseline levels of aluminum in the groundwater basin that exceed the MCL.

Arsenic

The MCL for arsenic is 0.01 mg/L. Arsenic occurs naturally in rocks and soil, water, air, and plants and animals. It can be further released into the environment through natural activities (i.e., volcanic action, erosion of rocks, and forest fires) or through human actions. Some areas of the basin have reported arsenic concentration in exceedence of the MCL.

Iron

There is not a primary MCL for iron, as it is not considered a health hazard. Rather, the presence of excessive concentrations of iron in water supplies is undesirable. Iron may oxidize and precipitate, which can result in objectionable taste, and/or unsightly staining of plumbing fixtures. California has a secondary MCL of 0.3 mg/L. There are iron levels in the basin that exceed the secondary MCL; however, these concentrations have trended downward from the initial measurement in 2008.

Manganese

There is not a primary MCL for manganese, as it is not considered a health hazard. Like iron, the presence of excessive concentrations of manganese in water supplies is undesirable due to oxides and/or precipitates that can result in objectionable taste, and/or unsightly staining of plumbing fixtures. The secondary MCL for manganese is 0.05 mg/L. Manganese occurs naturally through the erosion of deposits, as well as through human activities. The basin has reported manganese concentrations ranging from 0.07 mg/L (March 2010) to 0.16 mg/L (September 2009).

3.4.3.4. Organic Compounds

None of the wells in the monitoring network have tested positive for any of the organic compounds monitored as part of the requirements for the MOCP.

3.4.3.5. Radioactivity

None of the wells in the monitoring network have tested over the MCL for either gross alpha or uranium.

3.4.3.6. Physical Properties and Miscellaneous Constituents

Turbidity

Several wells have tested above the MCL of 5 Nephelometric Turbidity Units (NTU) for field turbidity. However laboratory analysis received for turbidity indicates that levels are below the standard.

Color

Color is not considered a health hazard and therefore no primary MCL has been mandated. Color concentrations in excess of the secondary MCL of 15 units are considered aesthetically unappealing, but are not detrimental to health or fixtures. The median color concentration for all samples is 1 unit.

Fecal Coliform

The MOCP requires fecal coliform testing. All fecal coliform analyses were negative in 2010.

3.5 Water Banking Opportunities

As indicated in more detail in Section 7, water banking is a crucial strategy that will be used by all retailers to help navigate the uncertainties in the availability of water supplies for the Antelope Valley. Water banking involves storing water when it is readily available in wet years or low demand periods and subsequently recovering it in periods of drought or high demand. The three methods of banking contemplated for the Antelope Valley are in-lieu groundwater basin recharge, groundwater basin recharge through surface percolation, and Aquifer Storage and Recovery (ASR). These opportunities are located inside and outside of the Antelope Valley.

Generally, water banking within the Antelope Valley is preferred over those outside because risks of disruption due to conveyance interruptions are minimized.

In evaluating water banking requirements, there are two characteristics that must be established: the required volume of water in storage (minus "leave-behind" water to offset overdraft) and the required pump back capacity for the most severe three-year delivery projection. The three-year drought sequence is commonly utilized for water supply planning in California and in UWMPs. The requirements are calculated by comparing projected demand to the sum of available groundwater and SWP supplies during a worst-case three year drought scenario comprised of a 7 percent SWP allocation followed by two 35 percent SWP allocations.

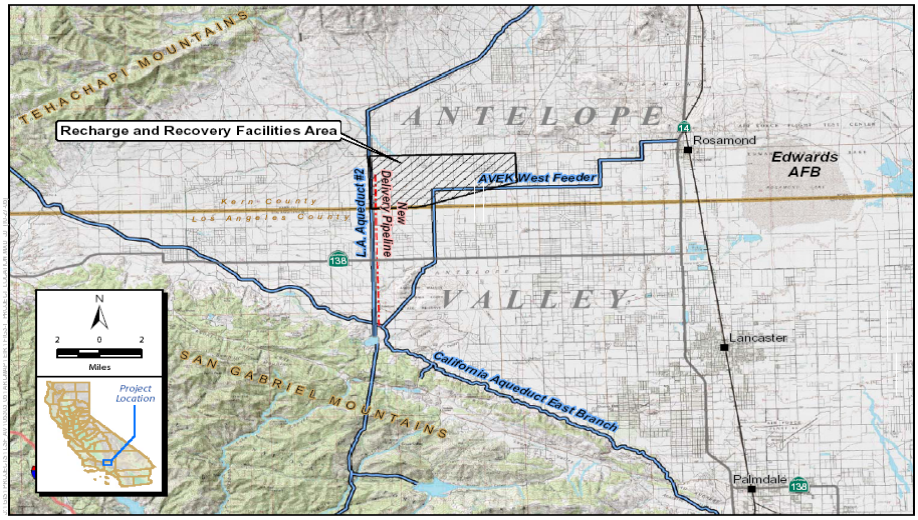
In the event that the annual SWP allocation is less than demand, water that has been stored through direct or in-lieu groundwater basin recharge will typically be used first to make up the difference between demand and SWP supply.

In order to meet the banked water supply targets in the future, RCSD will store sufficient quantities of available supplies in years where supply conditions permit. These targets therefore dictate how the present-year's water resources are utilized. The supply targets increase with demand, and therefore must be recalculated annually. In a similar manner, present year operations must be modified annually to account for the recalculated targets.

SWP reservoir storage is crucial to meeting the carry-over and banked supply targets. In the event that a retailer does not use its full entitlement of SWP water in a given year, water can be can stored in the San Luis Reservoir. Unfortunately, in the event of a high allocation the following year, that quantity of carry-over water may be lost due to limited reservoir capacity. In this case, this carry-over supply can be moved to a water bank for future use. Conversely, if the next year's SWP allocation is insufficient to meet demand, the carry-over supply can be moved into the Antelope Valley. Banked supply will be utilized in the event that demand is greater than the sum of the current year SWP allocation, available carryover, and maximum groundwater extraction capacity.

3.5.1.1 Antelope Valley Water Bank

The Semitropic-Rosamond Water Banking Authority (SRWBA) oversees operations at the AVWB, which is a permitted groundwater banking project in southern Kern County, California. RCSD is a participating member of the SRWBA. Located in the western Antelope Valley, the AVWB is generally bounded by Holiday Avenue to the north, Avenue A to the south, 170th Street West to the west, and 150th Street West to the east.



The AVWB is being constructed in phases. Currently, Phase 1 has been constructed (320 acres) and is currently being utilized for recharging operations. The existing facilities have a recharge

capacity of up to 10,000 AFY. As of May 15, 2011, a total of 2,996 AF had been applied to the basins during recharge operations. Upon recovery of banked water, 10 percent will be left behind in an effort to reduce pre-existing aquifer overdraft.

The AVWB encompasses an 18-square mile area totaling roughly 13,440 acres, of which 1,482 acres would be dedicated for spreading basins. More specifically, there would be 11 spreading basins, each approximately 160 acres and up to 40 new recovery wells. At full build-out, the AVWB will be a water banking facility capable of 100,000 AFY of recharge, 100,000 AFY of recovery, and 500,000 AF of total storage capacity within the underlying aquifer.

Accordingly, the AVWB would contribute to accomplishing the goal of making more water available, through recharge and recovery, to meet existing and future water requirements in the Antelope Valley and RCSD as well as other regions in southern California during periods when surface water supplies are deficient.

3.5.1.2 Semitropic Water Storage District Bank

The Semitropic Water Storage District (Semitropic) is located in the San Joaquin Valley in north-central Kern County, about 20 miles northwest of Bakersfield and immediately east of the California Aqueduct. Semitropic was originally formed in 1958 with the expectation of receiving water from the SWP and surplus water from the Kern River.

In 1995, Semitropic began implementation of the Semitropic Groundwater Banking and Exchange Program by utilizing a portion of the available immense groundwater storage capacity (approximately 1 million AF out of over 3 million AF). This long-term water storage program was designed to recharge groundwater and reduce overdraft, increase operational reliability and flexibility, and optimize the distribution and use of available water resources between Semitropic and the banking partners. The existing Semitropic water bank has a storage capacity of 1 million AF; a recharge capacity of 90,500 AFY; a firm extraction capacity of 90,000 AFY through the pumpback and physical return of groundwater to the SWP facilities; and the ability to return up to 133,000 AFY through exchange of Table A SWP entitlement. Approximately 700,000 AF are currently in storage. This program is currently fully operational and is a proven and working water bank.

Semitropic is in the process of a second phase of the groundwater banking program called the Stored Water Recovery Unit (SWRU). The SWRU will increase storage by 650,000 AF to a maximum of 1.65 million AF and increase recovery capacity by 200,000 AFY for a total guaranteed or pumpback capacity of 290,000 AFY. This means that the Semitropic Water Storage Bank, including its entitlement exchange capability of up to 133,000 AFY, will be able to deliver up to 423,000 AFY of dry-year yield to the California Aqueduct.

Section 4: Water Use Provisions

This section describes historic/current water usage and the methodology used to project future demands within the water purveyors' service areas. Water usage is divided into sectors such as residential, industrial, institutional/governmental, landscape/recreational, agricultural, and other purposes.

4.1 Historic/Current Water Use

This subsection will present the historic and current water use for each of RCSD's customer categories.

4.1.1 RCSD

RCSD currently serves 5,680 connections, of which approximately 96 percent are residential. Commercial connections account for approximately two percent, landscape irrigation and non-potable connections account for less than one percent, and industrial and other connections account for the remaining connections. Table 4-1 provides a summary of the RCSD historic and existing service connections.

TABLE 4-1: RCSD HISTORIC AND CURRENT WATER USAGE

Customer Category	2005		2006		2007		2008		2009	
	Water Use (AF)	Meters	Water Use (AF)	Meters	Water Use (AF)	Meters	Water Use (AF)	Meters	Water Use (AF)	Meters
Single Family	2,478	4,118	2,848	3,944	2613	4,207	2,460	4,099	2,444	4,166
Multi-Family	254	79	488	70	270	107	442	97	273	104
Commerical	130	97	256	95	689	99	194	83	142	94
Industrical/ Manufacturing	3	0	2	11	0	28	0	0	0	0
Landscape Irrigation	72	23	211	22	96	27	83	26	66	32
Other	0	1	160	22	66	29	29	28	21	28
Total	2,937	4,318	3,965	4,164	3,734	4,497	3,208	4,333	2,946	4,424

4.2 Other Factors Affecting Water Usage

Two major factors that affect water usage are weather and water conservation. Historically, when the weather is hot and dry, water usage increases. The amount of increase varies according to the number of consecutive years of hot dry weather and the conservation activities imposed. During cool-wet years, water usage decreases due to less irrigation demand for

external landscaping. Water conservation measures employed by RCSD will have a direct long-term effect on water usage. Both of these factors are discussed below in detail.

4.2.1 Weather Effects on Historical Water Usage

Historically, both agricultural and urban usage has increased in dry weather. However, in recent years, conservation efforts have limited increases in demand due to higher temperatures and often have resulted in reduced overall demand. Dry year effects due to global warming may also begin to influence future water usage and planning efforts as discussed in Section 1.

4.2.2 Conservation Effects on Water Usage

In recent years, water conservation has become an increasingly important factor in water supply planning in California. The California plumbing code has instituted requirements for new construction that mandate the installation of ultra low-flow toilets and low-flow showerheads. RCSD has participated in water conservation measures that include public information and education programs and the implementation of water efficient operations and maintenance practices. As a retail customer of AVEK, RCSD has also implemented DMMs as described in Section 5. In November 2009, SB X7-7 was enacted requiring all water suppliers to increase water use efficiency. The legislation sets an overall goal of reducing per capita urban water use by 20 percent by December 31, 2020, with an interim goal of at least 10 percent by December 31, 2015. Further discussion on SB X7-7 is found in Section 8.

4.3 Projected Water Use

This subsection will present the population and water demand projections for RCSD.

4.3.1 Population and Water Demand Projections

The population projections for RCSD are shown in Table 4-2.

TABLE 4-2: POPULATION PROJECTIONS

	2010	2015	2020	2025	2030	2035
RCSD	17,700	22,600	26,200	30,400	35,200	40,800

Source: Kern County Council of Government, Sphere of Influence Study, 2006

Population projections are often used to determine future demand by utilizing an average water demand (typically based on historic water use). However, they often mask economic trends, changes in land use, and non-population based water demands. In order to more accurately predict the water demand projections for RCSD, the land use maps and General Plans of the cities of Palmdale and Lancaster were used.

The land use and zoning maps for the cities of Lancaster and Palmdale were divided up by census tract and water demand factors were assigned to each land use type. The water demand factors used were based on average water use by existing customers within each land use type and reflect reductions in water use necessary to meet per capita water use targets by 2015 and 2020. Table 4-3 indicates the per acre water use demand for each land use type. If each land use sector continues to use water at the rate of these factors, RCSD would meet the demand reduction targets mandated in SB X7-7. However, future demands until 2020 are projected to return to the normal levels that were observed in the Antelope Valley prior to the recent drought and the aggressive level of water conservation that occurred in Antelope Valley

between 2008 and 2010. Therefore, the tables in Section 7 do not project demands based on these factors until 2020 when RCSD is required to comply with SB X7-7. Using land use data to project demand is a more accurate method of estimating water demand both by jurisdiction and water district.

TABLE 4-3: WATER USE FACTORS IN ACRE-FEET PER ACRE BY LAND USE TYPE

Type	Single Family Residential	Multi-Family Residential	Commercial	Heavy Industry	Light Industry	Mixed Use	Non-Urban Residential	Public Areas	Healthcare
AF/ acre	3.9	2.5	2.25	0.3	1.1	2.5	1.9	2.6	5

RCSD's boundaries are very similar to jurisdictional boundaries, so the water demand projections in Table 3-9 of the 2007 Antelope Valley IRWMP were used. Table 4-4 breaks down these projections by land use type for RCSD.

TABLE 4-4: RCSD DEMAND PER LAND USE TYPE

	Water Demand Factor	2010 Demand	2015 Demand	2020 Demand	2025 Demand	2030 Demand	2035 Demand	Total acres
	(AF/acre)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	
Single Family Residential	3.9	2,230	2,490	3,070	3,500	4,070	4,700	1,204
Multi-Family Residential	2.5	200	250	290	350	380	500	182
Commercial	2.25	160	170	200	240	280	300	145
Heavy Industry	0.3	-	-	-	-	-	-	-
Light Industry	1.1	-	-	-	-	-	-	-
Mixed Use	2.5	-	-	-	-	-	-	-
Non-Urban Residential	1.9	400	450	500	600	710	800	436
Public Areas	2.6	20	30	30	40	50	60	20
Healthcare	5	-	-	-	-	-	-	-
Open Space	-	-	-	-	-	-	-	-
Total	N/A	3,010	3,390	4,090	4,730	5,490	6,360	1,987

Section 5: Water Demand Management Measures

This section will discuss the existing and planned DMMs implemented by RCSD.

5.1 Water Demand Management Measures

As outlined below, the UWMPA requires water suppliers implement "demand management" in their UWMP through a five-step process. Demand management, as applied to water conservation, refers to the use of measures, practices, or incentives implemented by water utilities to permanently reduce the level of demand or change the pattern of demand. Per California Water Code (CWC) §10631(f) and (g), UWMPs must include:

1. A description of each water demand management measure being implemented or scheduled for implementation:

   DMM 1. Water survey programs for single-family residential and multi-family residential customers.

   DMM 2. Residential plumbing retrofit.

   DMM 3. System water audits, lead detection, and repair.

   DMM 4. Metering with commodity rates for all new connections and retrofit of existing connections.

   DMM 5. Large landscape conservation programs and incentives.

   DMM 6. High-efficiency washing machine rebate programs.

   DMM 7. Public information programs.

   DMM 8. School education programs.

   DMM 9. Conservation programs for commercial, industrial, and institutional accounts.

   DMM 10. Wholesale agency programs.

   DMM 11. Conservation pricing.

   DMM 12. Water conservation coordinator.

   DMM 13. Water waste prohibition.

   DMM 14. Residential ultra-low-flush toilet replacement programs.

2. A schedule of implementation for all water DMMs proposed or described in the water supplier's UWMP.

3. A description of the methods, if any, the water supplier will use to evaluate the effectiveness of the DMMs implemented or described under the UWMP.

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

5. An evaluation of each DMM not being implemented or scheduled for implementation, which shall include cost-benefit, funding availability, and legal authority analyses.

The UWMPA allows one of two ways for water utilities to provide DMM information so as to meet the respective requirements of CWC §10631(f) and (g):

- Signatory. A water supplier who is a member of the CUWCC[1] and signatory of the *Memorandum of Understanding Regarding Urban Water Conservation in California* (MOU) may submit their Best Management Practice (BMP) Activity Reports (Annual Reports). Signatories pledge to develop and implement the 14 BMPs that are intended to reduce long-term urban water demands. These BMPs are functionally equivalent to the DMMs in CWC §10631(f)(1).

  It should be noted that exemptions are available for BMPs that cannot be implemented; certain criteria must be met regarding cost-effectiveness, budgetary constraints, or legal issues that prohibit the implementation of any BMP for a signatory.

- Non-signatory. A water supplier who is not a member of CUWCC, or who is a member of CUWCC, but chooses not to submit the Annual Reports, must discuss all 14 DMMs, along with any additional measures the supplier is implementing or has scheduled for implementation in their UWMP submittal.

5.2 Implementation Levels of DMM's/BMP's

The DMMs that were implemented, or scheduled to be implemented, by RCSD are outlined in the respective sections below. Included in the discussions are the five descriptive "demand management" elements as per the UWMPA .

RCSD is not a signatory to the CUWCC MOU and is not a member of CUWCC, however RCSD is dedicated to expeditiously implementing as many reasonable water conservation measures in urban areas and to establish appropriate assumptions for use in calculating estimates of reliable future water conservation savings.

RCSD evaluates the implementation of their conservation programs on an annual basis and is able to implement programs accordingly as budgets allow. A brief description of RCSD's activities with respect to each DMM follows.

[1] CUWCC, a non-governmental agency, was formed to increase water use efficiency statewide through partnerships among urban water agencies, public interest organizations, and private entities. CUWCC's goal is to integrate urban water conservation BMPs into the planning and management of California's water resources.

5.2.1.1 DMM 1: Water Survey Programs for Single-Family and Multi-Family Residential

Customers

RCSD began offering free residential water use surveys to single-family and multi-family customers in 2006. These surveys focus on the top 20 percent of water users in each sector, but are offered to any customer by request. The top 20 percent of users, as determined from RCSD's existing database of billing records, receive a letter offering the free survey. If the users remain on the top 20 percent list the following year, up to three letters will be mailed offering an additional incentive to conduct the survey.

Interior single family audits may take two hours and are conducted by trained RCSD staff.
An interior water audit generally includes the following elements:

- Identify types of water usage.
- Estimate the amount of water used for each device or fixture.
- Recommend fixture repair options if necessary.
- Identify alternative water usage device or fixture possibilities.
- Instruct customer on proper installation and use of plumbing retrofit kits.
- Inform customer on how to read their own water meter.
- Inform and educate residents to use and conserve water efficiently.

RCSD also has a landscape ordinance in place which pertains to new and existing single family homes, and an active landscape conservation program. RCSD has a Water Efficiency Landscape (WEL)/firescape demonstration garden and works with Kern County and others to promote efficient landscaping practices. RCSD is also considering a financial incentive program to help homeowners convert to more water efficient landscapes (which may include landscape materials, irrigation conversions, automatic controllers, soil moisture sensors, gray water, etc.).

In addition to the interior water audits, the survey team also conducts the landscape or exterior water survey at the residence. Exterior water audits may include one of two types - routine and detailed.

A routine exterior water audit generally includes the following elements:

- Estimate the size of landscaped area.
- Assess in-ground irrigation systems for leaks and broken sprinklers.
- Measure precipitation rate of irrigation system.
- Evaluate the automatic control settings.
- Develop suggested irrigation schedules.
- Provide customer with public education materials.

Residents are generally provided with recommendations for improvements, plumbing retrofit kits and water conservation literature. Examples of public education materials titles include:

- "Low Water Using Plants"
- "For Your Xeriscape Garden (Low Water Using Plants)"
- "Ground Covers for Your Xeriscape Garden"
- "Making Your Garden Grow"
- "Drought Survival Guide for Home and Garden"

Detailed exterior audits include all of the elements of the routine audit in addition to irrigation uniformity audits and soil assessments.

Institutional and governmental customers have also been offered water use surveys. All publicly-owned facilities including the Rosamond library, fire stations, RCSD's corporation yard facilities, and public restrooms have been surveyed for recommended retrofitting. Surveys have been conducted by consultants in the past.

Interior water savings achieved as the result of common water audits are difficult to predict, however savings of 10 to 30 percent have been reported (Deoreo, 2001; Bruvold, 1993; Nelson, 1992). However, an additional water savings ranging from 10 to 57 percent may be generated via detailed exterior audits (CUWCC, 2000; Hawn, 1997). In 2004, average daily demand for residential connections was approximately 0.784 AF per connection. Thus, the combination of interior and exterior audits could generate a minimum water savings of 20 percent per connection surveyed or 0.157 AF per survey.

In order to measure the method's effectiveness, RCSD will utilize a database system. For each dwelling unit the survey team will complete a customer data form (including number of people per household, number of bathrooms, age of appliances, and lot and landscaped area square footage). This data is used to analyze the customer's water use, evaluate the effectiveness of the measure, and refine the program.

RCSD staff reviews the surveyed customers' water use records, and compares historic use with current use for one year after the survey. If the reduction in water use is not in line with DMM water savings estimates, staff will flag the customer's account and offer a follow-up survey.

Implementation Schedule

- Program Start: January 2006
- Program Status: Ongoing. Offers made annually to single-family and multi-family residential customers. Program advertised using bill inserts, water conservation newsletter, and website.

Budgetary Schedule

RCSD has allotted a budget of $30,000 for interior audits and $15,000 for exterior audits to implement this DMM.

5.2.1.2 DMM 2: Residential Plumbing Retrofit

Under this program, water-conserving devices such as high-quality low-flow showerheads, toilet-displacement devices, toilet flappers, and faucet aerators are distributed to customers.

The plumping retrofit DMM was implemented in 2000. Through National Association of Clean Water Agencies (NACWA), RCSD participates in the distribution of retrofit kits during Water Awareness Month. Residential plumbing retrofit programs include distributing retrofit kits that may include high quality low-flow showerhead, faucet aerator/restrictor, toilet displacement device, toilet leak detection tablets, garden hose nozzle, hose washers, and hose repair kits. Retrofit kits include instructions on the proper installation and benefits of the low-flow devices. In addition, each of the kits includes printed materials promoting interior and exterior conservation practices. Retrofit programs may also include a water survey as described above or toilet replacement with ultra low flush toilets (ULFT, see Section 5.2.2.14).

Conservative estimates of interior water savings achieved due to retrofit with only the showerhead and faucet restrictor for single-family and multi-family homes ranges from approximately 48 to 114 gallons per day (gpd) per housing unit (Deoreo, 2001; Bruvold, 1993; Nelson, 1992; Maddaus, 1987). Significant additional savings may be generated due to fixture leakage reduction and installation of toilet dams or replacement. Installation of retrofit fixtures in older single-family homes tends to produce more savings, while newer multi-family homes tend to produce less savings per housing unit.

Implementation Schedule

- RCSD will continue to implement this DMM at a targeted rate of 10 percent of pre-1992 single and multi-family customers every two years.
- This measure will be evaluated for effectiveness as described for DMM 1.

Budgetary Schedule:
The cost for this DMM is combined with the overall annual cost for DMM 1.

5.2.1.3 DMM 3: System Water Audits, Leak Detection, and Repair

RCSD has conducted monthly water audits, leak detection, and repair on their distribution system since 1997. Because RCSD is located in an earthquake zone, it has permanently incorporated the system water audit and leak detection, and meter calibration (production and customer meters) programs into its utility operations, on a three-year rotation schedule. On average, RCSD water department crews spend about 35 days surveying approximately 100 miles of main and laterals per year. The RCSD also participates in the NACWA-sponsored annual valve exercise program, established in 1991, to ensure that interconnections with adjacent utilities actually work.

No major line replacements were necessary from 2005 to 2010.

Implementation Schedule

- Program Start: January 1997
- Program Status: Ongoing. Effectiveness of this DMM is measured through the reduction in number of leaks detected and unaccounted for water losses in comparison to past years. RCSD utilizes an annual review of the data records to confirm that the unaccounted for water losses stay under 6 percent.

Budgetary Schedule:
Approximately $6,000 has been allocated for this DMM as part of the operation and maintenance budget.

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

RCSD is fully metered for all customer sectors, including separate meters for single-family residential, commercial, large landscapes, and all institutional/governmental facilities. Since 1990, RCSD policy has been to separately meter each dwelling unit in multi-family complexes. There are approximately 110 multi-family complexes, with 3,753 single family dwelling units in the service area.

RCSD's building department coordinates the implementation of this DMM with Kern County. RCSD is working with the Kern County Building and Safety Department when it reviews the

building plans to determine the water use efficiency before a permit is issued to the new commercial/industrial/institutional customers. Additionally, all customers are metered with landscape meters for landscape areas other than residential lawn areas. Cost for meter installation is covered through service connection fees.

This DMM will be measured for effectiveness through the measures illustrated in DMM 1. Commercial water reduction achieved is estimated at 12 to 15 percent. RCSD is also evaluating an expansion in their recycled water facilities, and a further reduction in potable water demand will result once recycled water becomes available.

Implementation Schedule:

- Program Status: Ongoing. Started in 1990.

Budgetary Schedule:
To Be Determined (TBD)

5.2.1.5 DMM 5: Large Landscape Conservation Programs and Incentives

In 1992, motivated by the drought, RCSD established a landscape ordinance. It has since been amended to include firescaping guidelines and to conform to California Water Code Section 65590 et seq. (AB 325).

RCSD continues to work in partnership with the local fire department, local nurseries, landscape designers, contractors, and the local floriculture growers to help educate landowners in regards to water efficient landscaping (WEL). In cooperation with AVEK a proposed information pamphlet has been developed to explain evapotranspiration and procedures involved in developing irrigation schedules.

Additionally, RCSD co-authored a "Landscape Plants for the California High Desert" booklet that has been provided to customers, Kern County Planning, and local nurseries. RCSD has used WEL at all median strips in conjunction with the County and developers. The potential benefits will be:

1. Allowing the public to see attractive low-water using landscapes.
2. Demonstrating RCSD's commitment to improved efficiencies in public water uses.
3. Improving safety records due to the reduced exposure in maintaining median strip landscaping.
4. Providing cost-savings associated with lower water bills, reduced median strip maintenance, and fewer street and gutter repairs.

Furthermore, RCSD conducts irrigation surveys for all large landscape customers (currently defined as three acres or greater). RCSD also began an inventory of landscaped areas over one acre, based on the Kern County's and DWR's Geographical Information System (GIS), in 2000.

A landscape water audit generally includes the following elements:

- Estimate size of landscaped area.
- Define soil characteristics.
- Assess in-ground irrigation systems for leaks and broken sprinklers.

- Measure irrigation system uniformity rate.
- Evaluate automatic control settings.
- Develop suggested irrigation schedules.
- Provide customer with public education materials..

During the survey, a trained RCSD team determines a water budget for the site, which defines the amount of water allotted for the site based on the size of the landscape and the climate. Water use is monitored on a monthly basis and any water use over the water budget is billed at a higher rate. If the water budget is exceeded for three consecutive months, the customer is offered technical assistance. On-site follow-up evaluations are recommended for customers whose annual water use exceeds their water budget.

RCSD has considered a financial incentive program to encourage high water users to convert to more water efficient landscapes. Types of financial incentives considered include: irrigation system conversions, automatic controllers, soil moisture sensors, automated CIMIS scheduling, and plants and other landscape materials.

In 2004, landscape irrigation use averaged 8,812 gpd per connection (38.6 million gallons a year/12 connections/365 days a year). Thus a 15 percent reduction could result in a water savings of 17.8 AFY (15 percent * 8,812 gpd per connection * 12 connections * 365 days/325,075 gallons per AF), assuming water budgets are developed just for the existing landscape/irrigation connections. Additional savings could be achieved for commercial/institutional connections with large landscaped areas.

The effectiveness of this measure will be evaluated through cost-savings, the attendance to the WEL demonstration garden, and the number of WEL materials distributed. RCSD will report annually
on the landscape water savings associated with this DMM to the Board of Directors.

Implementation Schedule:
- Program Ongoing. This DMM has been permanently incorporated into RCSD's ordinances.

Budgetary Schedule:
RCSD has allocated an annual budget of $965 for water audits and $5,800 for conservation efforts. It is anticipated that this DMM will provide a 15 percent reduction in landscape water use.

5.2.1.6 DMM 6: High-Efficiency Washing Machine Rebate Programs

High-efficiency washing machines use about 50 percent less water than conventional machines; using only 20 to 30 gallons of water per load, compared to 40 to 45 gallons for conventional top-loading washers. The estimated annual savings for a typical household is about 5,000 gallons per year.

RCSD does not currently have its own residential rebate program. However, customers in the RCSD's water service area may be eligible for rebates from either the area's electric utility or gas utility. Water and energy savings vary with the new models, however, mean water savings of approximately 14 gallons per household per day would be expected. High efficiency models cost from $600 to $1,100 (compared to $300 to $700 for conventional units) which may reduce the rate of participation. Examples of customers that would derive maximum benefit from this program include multi-family residential units and laundromats with multiple washing machines per location.

Kern County offers rebates which normally range between $85 and $150. Rebates are based on the projected combined water and energy savings. Examples of other agencies which have cosponsored programs include Southern California Edison (SCE) (http://www.sce.com/residential/rebates-savings/appliance/appliance.htm).

Implementation Schedule:
- SCE Program: Ongoing
- Kern County Program: Ongoing
- RCSD Program: Not implemented

Budgetary Schedule:
TBD

5.2.1.7 DMM 7: Public Information Programs

RCSD promotes water conservation and other resource efficiencies in coordination with the Association of California Water Agencies (ACWA) and the energy utilities. It also distributes public information through bill inserts, brochures, community speakers, paid advertising, and many special events every year. Special events include the William Ketchum Armed Forces Day Parade, an annual water conservation fair, and a display case and Small Change Theatre at the Kern County Public Library.

RCSD has formed a Citizens' Advisory Committee to assist in developing new ways to communicate with the public and the media about water conservation and other resource issues. Due to the arid conditions of the region, it also has become a priority to develop conservation materials focused on the short-term residents and visitors through working with restaurants, hotels, and real estate offices. RCSD also has a dedicated section on their home page that includes information on water conservation, recycling, and other resource issues. RCSD will continue to provide public information services and materials to remind the public about water and other resource issues.

Implementation Schedule:
- Program Ongoing. RCSD will track the commentary regarding the information provided.

Budgetary Schedule:
RCSD has a proposed annual budget of $10,000, (from public affairs office budget) for staff and materials for this activity.

5.2.1.8 DMM 8: School Education Programs

RCSD continues to work with NACWA and the local school districts to promote water conservation and other resource efficiencies at school facilities and to educate students about these issues. They are currently studying the retrofitting of school playground irrigation systems. RCSD contacts local school boards and principals about implementing DMM 8. RCSD will provide educational materials for several grade levels, state and county water system maps, posters, workbooks, interactive computer software, videos, and tours. RCSD currently sponsors Water Education for Teachers (WET) training, science fairs, and water conservation contests. Specific events include the Small Change Theatre for Kindergarten through third grade, Dr. Wilderness for third grade through sixth grade, and Resource Action Programs and Saving Water One Student at a Time for fifth grade.
Implementation Schedule:

- Program Ongoing. To measure the effectiveness of this DMM, RCSD will continue to survey the institutions and educators on the number of programs, materials, and attendance at water conservation activities.

Budgetary Schedule:
The proposed annual budget for this DMM is $10,000 for labor, expense, and materials.

5.2.1.9 DMM 9: Conservation Programs for Commercial, Industrial and Institutional Accounts

RCSD continues to provide water use audits to any commercial/industrial/institutional (CII) customer who so request. RCSD utilizes a database program to identify the top 10 percent of the commercial customers and the top 20 percent of the industrial and institutional customers. These high demand customers are contacted by letter and with follow-up telephone calls to offer audits.

RCSD has developed a billing insert that includes water survey information. This insert along with the October 1994 DWR publication Water Efficiency Guide for Business Managers and Facility Engineers will continue to be distributed. Staff will also complete a program to identify CII customers by Standard Industrial Classification (SIC) codes.

Implementation Schedule:
- Program Ongoing. RCSD will continue to implement this DMM at the annual target rate for at least the next five years.

Budgetary Schedule:
RCSD has allotted an annual budget of $5,720 for water audits. An additional annual budget of $10,680 has been allotted for CII conservation programs.

5.2.1.10 DMM 10: Wholesale Agency Programs

RCSD is not a wholesale agency and thus this DMM is not applicable.

5.2.1.11 DMM 11: Conservation Pricing

RCSD converted their flat rate structure to a tiered rate structure in 2002. The current rate structure is provided in Tables 5-1 and Table 5-2.

TABLE 5-1: PROPOSED RATES FOR MONTHLY WATER METER CHARGE ($/METER SIZE)

Meter Size	Effective Oct. 1, 2009	Effective Oct. 1, 2010	Effective Oct. 1, 2011	Effective Oct. 1, 2012	Effective Oct. 1, 2013
0.63	$16.00	$17.00	$18.00	$19.00	$20.00
0.75	$16.68	$17.68	$18.68	$19.68	$20.68
1	$24.53	$26.20	$27.86	$29.53	$31.20
1.5	$37.83	$41.16	$44.50	$47.83	$51.16
2	$61.16	$66.49	$71.83	$77.16	$82.49
3	$143.79	$160.46	$177.12	$193.79	$210.46
4	$158.42	$175.09	$191.75	$208.42	$225.09
6	$183.68	$199.68	$215.68	$231.68	$247.68

TABLE 5-2: PROPOSED RATES FOR MONTHLY WATER HCF CHARGE ($/HCF)

Current Tier	Effective Oct. 1, 2009	Effective Oct. 1, 2010	Effective Oct. 1, 2011	Effective Oct. 1, 2012	Effective Oct. 1, 2013
1	$1.30	$1.60	$1.97	$2.17	$2.24
2	$1.43	$1.73	$2.10	$2.30	$2.37
3	$1.61	$1.91	$2.28	$2.48	$2.55
4	$1.80	$2.10	$2.47	$2.67	$2.74

***HCF=100 cubic feet or 748 gallons**

Implementation Schedule:
- Program Ongoing

Budgetary Schedule:
TBD

5.2.1.12 DMM 12: Water Conservation Coordinator

As of 2010, RCSD retains a designated part-time water conservation coordinator (WCC). Due to budgetary restrictions, the WCC does not currently have support staff to aid in this effort. RCSD will continue to survey the institutions and educators on the number of programs, materials, and attendance at water conservation activities in order to measure the DMM's effectiveness.

Implementation Schedule:
- Program Ongoing

Budgetary Schedule:
The proposed annual budget is $46,400 for water conservation staff costs.

5.2.1.13 DMM 13: Water Waste Prohibitions

RCSD has enacted a "No Waste" Ordinance. Enforcement includes the "gutter flooder" patrol to educate customers, and if necessary, issue warnings and citations for violations. See Appendix D for the "No Waste" Ordinance and information on regulations, restrictions and enforcement. As a method to measure efficiency, RCSD will monitor the number of annual violations.

Implementation Schedule:

- Program Ongoing

Budgetary Schedule:
RCSD has allotted an annual budget of $2,000 for this DMM.

5.2.1.14 DMM 14: Residential Ultra-Low Flush Toilet Replacement Programs

RCSD established a well publicized ULFT replacement program in 2001. ULFT's commonly use 1.6 gallons per flush. However, some types use as little as 0.5 gallon per flush and require a supply of compressed air to assist the flushing action. Higher savings are found in high-density housing and commercial/industrial settings. Savings persist over the entire lifespan of the toilet (approximately 25 years). RCSD plans to continue the DMM until at least 80 percent of all non-conserving and low-flush model toilets have been replaced. Since 2001, the Board of Directors' homes, RCSD offices, and toilets at Rosamond High School have been converted to ultra-low flush models. Rebates up to $75 per toilet were offered.

Alternatives to rebates for promoting toilet replacement include: (1) implementing a retrofit on resale ordinance where homes are required to retrofit to low flow fixtures upon a resale, and (2) direct distribution programs. Retrofit on resale ordinances is relatively inexpensive since costs are shifted to the home seller/purchaser. These ordinances tend to be unpopular with the real estate community and home sellers, since it may impede a sale due to timing and may require replacing floor coverings around the toilet. Communities in California which have a retrofit on resale ordinance include the Monterey Peninsula Water Management District, North Marin Water District, City of San Diego, City of San Francisco, and City of Santa Monica (DWR website). Direct distribution programs consist of providing a ULFT (1.6 gallons/flush) in exchange for a customer provided toilet (generally 3.5 to 7 gallons/flush).

This alternative is generally effective, but may have an increased administrative cost due to the need for staffing the distribution center and also for disposal of the retired toilets. However, RCSD has helped establish the East Kern County recycling policy, which will direct that recycled toilets (and other locally generated waste materials such as sludge from the RCSD treatment plant) should be used by government in its own operations. Possible modes of disposal for the retired toilets could be use as crushed aggregate road base and as rip-rap for ponds.

In coordination with Kern County, RCSD plans to offer rebates to customers, establish a referral installation program, and will provide commercial sources for toilets and urinals for installation at public facilities including schools, libraries, and fire department facilities. Projected total annual water savings from toilet retrofits at full implementation has yet to be determined, however water conserved in ULFT replacement programs have been shown to be 1.9 to 5.4 gallons of water savings per flush per toilet, which equates to 12 to 45 gallons per replacement per day. Assuming 240 replacements a year, the minimum annual water savings from this DMM is approximately 3.2 AFY (240 *12 gpd * 365 days/325,828 gallons per AF).

To measure effectiveness, RCSD will calculate annual ULFT replacement program water savings to confirm the savings are within 10 percent of calculated retrofit-on-resale water savings, using the CUWCC MOU Exhibit 6 methodology and water savings estimates. Exhibit 6 has become an industry standard for evaluation of ULFT replacement programs.

Implementation Schedule:

- Program On-going

Budgetary Schedule:
TBD

5.3 Summary of Conservation

Through the implementation of the existing DMMs and SB X7-7 requiring all water suppliers to reduce per capita urban water use, a reduction of approximately 10 percent in average water use is expected by 2015 and 20 percent by 2020 RCSD. However, it is difficult to determine actual water savings since most conservation measures are voluntary. Typically when a shortage occurs, water customers increase their awareness of water usage and voluntarily reduce water demand even more to avoid water rationing. Programs will also be phased in to help achieve the 20 percent reduction target from the proposed baseline as required by SB X7-7, as described in Section 8.

Section 6: Recycled Water Plan

6.1 Recycled Water Supplies

The entire Antelope Valley region is faced with significant challenges with respect to management of water resources in the region. Recycled water will help address the Antelope Valley's need for increased water supplies by offsetting existing potable demands and promoting beneficial reuse of treated wastewater, such as using recycled water for irrigation, industrial supply, or groundwater replenishment. Efforts are currently underway to develop a regional recycled water distribution system in the Antelope Valley, also known as the AV Backbone. Due to the size and scope of the project, it is a multi-agency, multi-jurisdictional project that will be implemented collectively to serve the Antelope Valley, including RCSD.

6.1.1 Source Characteristics and Quality

The Rosamond Wastewater Treatment Plant (RWWTP) is the wastewater treatment plant serving the RCSD service area. The RWWTP currently provides secondary[2] treated recycled water. However, ongoing construction and future planned expansion at the treatment plant will allow for tertiary[3] treated recycled water to be produced. A description this facility is provided below.

6.1.1.1 RWWTP

RCSD was created and has been in operation since 1966, for the purpose of providing water service and collecting and treating wastewater from its customers in the Rosamond area. In response to continuing drought conditions and new developments within RCSD's service area, RCSD has a robust capital improvement program aimed at augmenting their current wastewater treatment capabilities to produce recycled water.

RCSD is currently served by a wastewater sewer system and 1.5 mgd pond treatment/disposal system. Wastewater flows entering the pond treatment/disposal system are treated via biological flocculation and diverted to a series of 16 evaporations ponds. This undisinfected secondary effluent meets standards for landscape irrigation onsite.

The RWWTP has a permitted capacity of 2.0 mgd. RCSD has recently increased capacity to 2.5 mgd. The expansion of this facility helps to supplement the existing (tertiary) treatment and disposal facility. The expanded RWWTP is operational and is expected to be permitted in the fall of 2011. It is anticipated that future use of this tertiary treated wastewater will be applied towards solar powered generation projects.

Treatment plant improvements have been approved by the State of California's State Water Resources Control Board. Once permitted, the plant would provide tertiary treated recycled

[2] Secondary treatment means recycled water that meets secondary water quality standards, as defined in Water Code Title 22 regulations.

[3] Tertiary treatment means meeting and exceeding Title 22 requirements

water for landscape irrigation at median strips, parks, schools, senior complexes and new home developments.

6.1.2 Availability of Supply

For the purpose of this study, historic recycled water flows were provided to RCSD and used to predict the amount of recycled water anticipated within its service area. These projections are for tertiary treated water only and are determined from the applicable recycled water producer's Annual Monitoring Report. Table 6-1 provides a summary of RCSD's projected available recycled water through 2035. However, the volume of recycled water produced at the RWWTP will be dependent on the level of growth that occurs within RCSD. If the population and land use projections provided by RCSD materialize, the amount of recycled water available will be significantly greater than the numbers presented in Table 6-1.

TABLE 6-1: RECYCLED WATER AVAILABILITY TO RCSD 2010 – 2035

	2010	2015	2020	2025	2030	2035
RWWTP[(a)] (mgd)	0	1.0	1.0	1.0	1.0	1.0

Note:
(a) Provided by RCSD.

In previous sections, Table 4-5 projects that the future water demand in RCSD could be 6,360 acre-feet. This is a conservative estimate since most likely a larger percentage of new development will connect to a regional sewer system.

Although Table 6-1 provides the projected volumes of recycled water available, actual delivery of recycled water by RCSD to reuse sites will be limited to demand and implementation of local projects. Table 6-2 provides the projections of recycled water demand for an average water year. The projections are based on a recycled water market assessment and are generally for M&I recycled water uses. Use of recycled water would be encouraged through the use of financial incentives (i.e., recycled water would be available at a lower cost than the existing potable water supply). Table 6-3 indicates what was projected in the 2005 UWMP for recycled water to be utilized in 2010 compared to the actual recycled water used.

TABLE 6-2: PROJECTED FUTURE USE OF RECYCLED WATER IN RCSD (AFY)

	2015	2020	2025	2030	2035
RCSD	0	1,000	1,000	1,000	1,000

Note:
These projections are based on updates that will be reflected in RCSD's Recycled Water Master Plan.

TABLE 6-3: 2005 UWMP RECYCLED WATER USE COMPARED TO 2010 ACTUAL IN RCSD (AFY)

Water Purveyor	2010 Actual Use	2005 Projection for 2010
RCSD	0	1,000

As the potable water demand increases within RCSD, the amount of wastewater produced is also anticipated to increase. Table 6-4 identifies the amount of new demand associated with industrial development and beyond what is projected in Section 4 of the UWMP that could be served by recycled water if it is available.

Figure 6-1 illustrates the Recycled Water Backbone system RCSD is evaluating for future deliveries to customers outside of RCSD's service area.

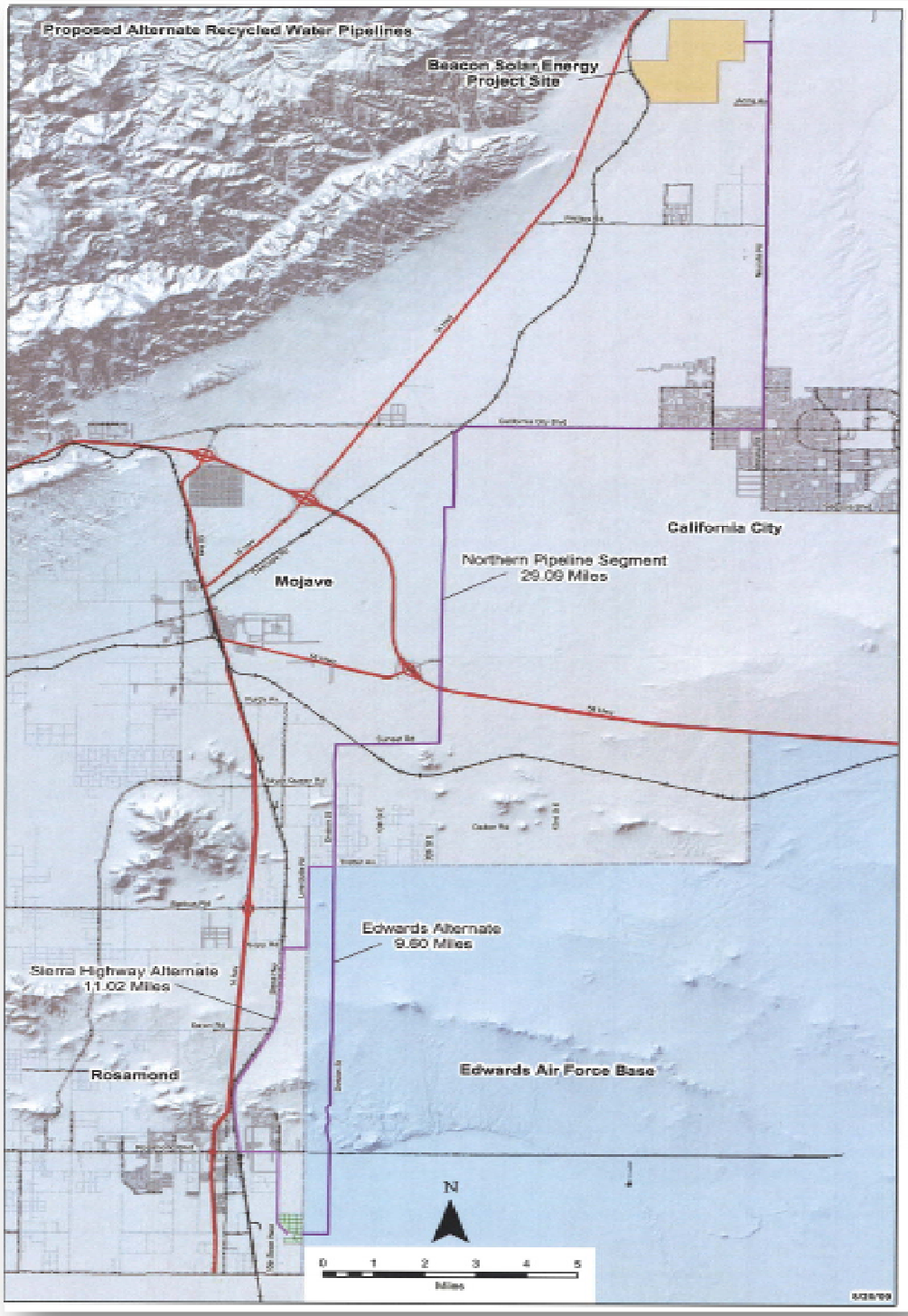
TABLE 6-4: RECYCLED WATER – POTENTIAL FUTURE USES (AF)

	2015	2020	2025	2030	2035
Agricultural Irrigation	0	0	0	0	0
Landscape Irrigation	0	0	0	0	0
Commercial Irrigation	0	0	0	0	0
Golf Course Irrigation	0	0	0	0	0
Industrial Reuse*	1,000	1,000	1,000	1,000	1,000
Groundwater Recharge	0	0	0	0	0
Indirect Potable Reuse	0	0	0	0	0
Wildlife Habitat	0	0	0	0	0
Total					

Note:

*Based on the new projected demand associated with the proposed land users.

FIGURE 6-1: PROPOSED RECYCLED WATER BACKBONE SYSTEM



Source: RCSD Recycled Water Master Plan 2007

Section 7: Water Service Reliability Planning

This section provides a discussion of the reliability of the water supply within RCSD. A comparison between the water supply and demand for an average water year, single-dry water year, and multi-dry water years is also provided. The adjudication process has begun for the Antelope Valley Groundwater Basin; however allocation amounts have not been defined. Therefore, RCSD understands that an annual review of reliability planning and clear management of the basin will be necessary. All tables in Section 7 reflect the projected groundwater pumping prior to the adjudication.

7.1 Reliability

Reliability is "how much one can count on a certain amount of water being delivered to a specific place at a specific time" and depends on the availability of water from the source(s), availability of conveyance, and the level and pattern of water demand at the place of delivery.

Reliability criteria define the maximum acceptable level of supply shortage an agency is willing to sustain during a drought. For this study, a reliability criterion has been used to evaluate water supply plans. This criterion requires water supply to be sufficient to meet projected demands 90 percent of the time. In the remaining 10 percent of the time, it is assumed that the maximum allowable supply shortage will be 10 percent of the demand. This level is chosen because a 10 percent water demand reduction is anticipated to be attainable by voluntary conservation. Typically when a shortage occurs, water customers increase their awareness of water usage and voluntarily reduce water demands, avoiding water rationing.

7.2 Water Quality Impacts on Availability of Supply

Imported water quality and groundwater quality have been addressed in Sections 2.3 and 3.4 of this Plan, respectively. Any change in water supply is not dependent on water quality, but on the SWP deliveries and local drought conditions. Therefore, there are no water quality impacts projected.

7.3 Reliability Comparison

As required by the UWMPA, a comparison of water supply and demand for an average water year, single dry water year, and multi-dry water years is presented from 2015 to 2035 in 5-year increments.

7.3.1 Average Water Year Assessment

Table 7-1 provides a summary of the average water year reliability for RCSD. As discussed in Section 2, the overall delivery of SWP water was estimated to be 60 percent of AVEK's Table A amount. Deliveries to RCSD (2 percent) were determined based on percent population for a given year. This assumes the availability of groundwater remains the same as it is today.

RCSD will need to implement planned water supplies by 2035 in order to meet demand. Demand estimates are based on the land use and population projection developed in Section 4.

7.3.2 Single Dry Year Water Assessment

Table 7-2 provides a summary of the single dry water year reliability for RCSD. Overall SWP water delivery was estimated to be available at 7 to 11 percent (as determined by the Reliability

Report) of AVEK's Table A Amount available to its retail customers. Demand estimates are based on the land use and population projection developed in Section 4.

As shown by the comparison, RCSD will have sufficient supply to meet the increasing demand through 2035 with implementation of the new planned water supplies (recycled water) and assuming the availability of groundwater remains the same as indicated in the tables. However, historically it has been the practice of RCSD to conserve groundwater use during average water years for additional pumping and availability in dry years to make up for the losses in SWP. Tables 7-1 through 7-7 reflect this additional groundwater pumping as well as the new planned water supplies as identified and discussed in Section 2 and 3, respectively.

7.3.3 Multi-Dry Year Assessment

Tables 7-3 through 7-7 provide a summary of the multi-dry water year reliability for RCSD. Each table presents a five year period of supply and demand (e.g., Table 7-3 presents data for years 2011 to 2015, Table 7-4 presents data for years 2016 to 2020, etc.) For all cases, overall delivery of SWP water was estimated to be available at 34 to 36 percent (as determined by the Reliability Report) of AVEK's Table A Amount available to retail agencies. Demand estimates are based on the land use and population projection developed in Section 4.

As shown by the comparison, RCSD will have sufficient supply to the increasing demand through 2035 with the implementation of the new planned water supplies, assuming the availability of groundwater remains the same as indicated in the tables.

TABLE 7-1: AVERAGE WATER YEAR ASSESSMENT (AF)

	2015	2020(1)	2025	2030	2035
Demand	3,400	4,100	4,700	5,500	6,400
Existing Water Supplies					
Groundwater	4,600	4,600	4,600	4,600	4,600
Imported water	1,700	1,700	1,700	1,700	1,700
Total Existing Supply	6,300	6,300	6,300	6,300	6,300
Difference (supply minus demand)	2,900	2,200	1,600	800	(100)
Difference as Percent of Supply	46	35	25	13	(2)
Difference as Percent of Demand	85	54	34	15	(2)
Planned Water Supplies					
Groundwater Banking	0	1,000	1,000	1,000	1,000
Anticipated New Supplies (Developer Fee)	0	500	500	500	500
Recycled Water	1,000	1,000	1,000	1,000	1,000
Total Planned Supply	1,000	2,500	2,500	2,500	2,500
Total Existing and Planned Supplies	7,300	8,800	8,800	8,800	8,800

Note:
(1) Demand projections beginning in 2020 reflect the SB X7-7 mandates

TABLE 7-2: SINGLE DRY WATER YEAR ASSESSMENT (AF)

	2015	2020	2025	2030	2035
Demand	3,900	4,100	4,700	5,500	6,400
Existing Water Supplies					
Groundwater	4,600	4,600	4,600	4,600	4,600
Imported water	119	119	119	119	119
Total Existing Supply	4,719	4,719	4,719	4,719	4,719
Difference (supply minus demand)	819	619	19	(781)	(1,681)
Difference as Percent of Supply	17	13	0	(17)	(36)
Difference as Percent of Demand	21	15	0	(14)	(26)
Planned Water Supplies					
Groundwater Banking	-	1,000	1,000	1,000	1,000
Anticipated New Supplies (Developer Fee)	-	500	500	500	500
Recycled Water	1,000	1,000	1,000	1,000	1,000
Total Planned Supply	1,000	2,500	2,500	2,500	2,500
Total Existing and Planned Supplies	5,719	7,219	7,219	7,219	7,219
Difference (supply minus demand)	1,819	3,119	2,519	1,719	819
Difference as Percent of Supply	32	43	35	24	11
Difference as Percent of Demand	47	76	54	31	13

TABLE 7-3: MULTI-DRY WATER YEAR ASSESSMENT 2011-2015 (AF)

	2011	2012	2013	2014	2015
Demand	3,000	3,100	3,200	3,300	3,400
Existing Water Supplies					
Groundwater	4,600	4,600	4,600	4,600	4,600
Imported water	1,000	1,000	1,000	1,000	1,000
Total Existing Supply	5,600	5,600	5,600	5,600	5,600
Difference (supply minus demand)	2,600	2,500	2,400	2,300	2,200
Difference as Percent of Supply	46	45	43	41	39
Difference as Percent of Demand	87	81	75	70	65
Planned Water Supplies					
Groundwater Banking	0	0	0	0	0
Anticipated New Supplies (Developer Fee)	0	0	0	0	0
Recycled Water	0	0	0	0	1,000
Total Planned Supply	0	0	0	0	1,000
Total Existing and Planned Supplies	5,600	5,600	5,600	5,600	6,600
Difference (supply minus demand)	2,600	2,500	2,400	2,300	3,200
Difference as Percent of Supply	46	45	43	41	48
Difference as Percent of Demand	87	81	75	70	94

TABLE 7-4: MULTI-DRY WATER YEAR ASSESSMENT 2016-2020 (AF)

	2016	2017	2018	2019	2020
Demand	3,500	3,700	3,800	4,000	4,100
Existing Water Supplies					
Groundwater	4,600	4,600	4,600	4,600	4,600
Imported water	1,000	1,000	1,000	1,000	1,000
Total Existing Supply	5,600	5,600	5,600	5,600	5,600
Difference (supply minus demand)	2,100	1,900	1,800	1,600	1,500
Difference as Percent of Supply	38	34	32	29	27
Difference as Percent of Demand	60	51	47	40	37
Planned Water Supplies					
Groundwater Banking	1,000	1,000	1,000	1,000	1,000
Anticipated New Supplies (Developer Fee)	0	0	0	0	500
Recycled Water	1,000	1,000	1,000	1,000	1,000
Total Planned Supply	2,000	2,000	2,000	2,000	2,500
Total Existing and Planned Supplies	7,600	7,600	7,600	7,600	8,100
Difference (supply minus demand)	4,100	3,900	3,800	3,600	4,000
Difference as Percent of Supply	54	51	50	47	49

TABLE 7-5: MULTI-DRY WATER YEAR ASSESSMENT 2021-2025 (AF)

	2021	2022	2023	2024	2025
Demand	4,200	4,300	4,500	4,600	4,700
Existing Water Supplies					
Groundwater	4,600	4,600	4,600	4,600	4,600
Imported water	1,000	1,000	1,000	1,000	1,000
Total Existing Supply	5,600	5,600	5,600	5,600	5,600
Difference (supply minus demand)	1,400	1,300	1,100	1,000	900
Difference as Percent of Supply	25	23	20	18	16
Difference as Percent of Demand	33	30	24	22	19
Planned Water Supplies					
Groundwater Banking	1,000	1,000	1,000	1,000	1,000
Anticipated New Supplies (Developer Fee)	500	500	500	500	500
Recycled Water	1,000	1,000	1,000	1,000	1,000
Total Planned Supply	2,500	2,500	2,500	2,500	2,500
Total Existing and Planned Supplies	8,100	8,100	8,100	8,100	8,100
Difference (supply minus demand)	3,900	3,800	3,600	3,500	3,400
Difference as Percent of Supply	48	47	44	43	42

TABLE 7-6: MULTI-DRY WATER YEAR ASSESSMENT 2026-2030 (AF)

	2026	2027	2028	2029	2030
Demand	4,900	5,000	5,200	5,300	5,500
Existing Water Supplies					
Groundwater	4,600	4,600	4,600	4,600	4,600
Imported water	1,000	1,000	1,000	1,000	1,000
Total Existing Supply	5,600	5,600	5,600	5,600	5,600
Difference (supply minus demand)	700	600	400	300	100
Difference as Percent of Supply	13	11	7	5	2
Difference as Percent of Demand	14	12	8	6	2
Planned Water Supplies					
Groundwater Banking	1,000	1,000	1,000	1,000	1,000
Anticipated New Supplies (Developer Fee)	500	500	500	500	500
Recycled Water	1,000	1,000	1,000	1,000	1,000
Total Planned Supply	2,500	2,500	2,500	2,500	2,500
Total Existing and Planned Supplies	8,100	8,100	8,100	8,100	8,100
Difference (supply minus demand)	3,200	3,100	2,900	2,800	2,600
Difference as Percent of Supply	40	38	36	35	32

TABLE 7-7: MULTI-DRY WATER YEAR ASSESSMENT 2031-2035 (AF)

	2031	2032	2033	2034	2035
Demand	5,600	5,800	6,000	6,200	6,400
Existing Water Supplies					
Groundwater	4,600	4,600	4,600	4,600	4,600
Imported water	1,000	1,000	1,000	1,000	1,000
Total Existing Supply	5,600	5,600	5,600	5,600	5,600
Difference (supply minus demand)	0	(200)	(400)	(600)	(800)
Difference as Percent of Supply	0	(4)	(7)	(11)	(14)
Difference as Percent of Demand	0	(3)	(7)	(10)	(13)
Planned Water Supplies					
Groundwater Banking	1,000	1,000	1,000	1,000	1,000
Anticipated New Supplies (Developer Fee)	500	500	500	500	500
Recycled Water	1,000	1,000	1,000	1,000	1,000
Total Planned Supply	2,500	2,500	2,500	2,500	2,500
Total Existing and Planned Supplies	8,100	8,100	8,100	8,100	8,100
Difference (supply minus demand)	2,500	2,300	2,100	1,900	1,700
Difference as Percent of Supply	31	28	26	23	21

Section 8: Per Capita Water Use Targets

8.1 Per Capita Water Use Target for SB X7-7 Reduction

The SB X7-7 is a legislative mandate that requires the state to achieve a 20 percent reduction in urban per capita water use in California by December 31, 2020, with an interim target of 10 percent reduction by December 31, 2015. The legislation requires every urban water purveyor to develop: 1) 10-year or 15-year Baseline Daily Per Capita Water Use (Baseline); 2) 2020 Urban Water Use Target (2020 Target); and 3) 2015 Interim Urban Water Use Target (2015 Interim Target).

8.1.1 Base Period Ranges

Table 8-1 provides the base period ranges used to calculate the 10-year Baseline for RCSD. RCSD identified their demand reduction targets for years 2015 and 2020 by utilizing DWR's Methodology 1. Methodology 1 is based on calculating 80 percent of the water purveyor's 10-year Baseline (i.e., a 20 percent reduction).

TABLE 8-1: RCSD BASE PERIOD RANGES

Base	Parameter	Value	Units
10 to 15-year base period	2008 total water deliveries (AF)	3,697	AF
	2008 total volume of delivered recycled water (AF)	0	AF
	2008 recycled water as a percent of total deliveries	0	percent
	Number of years in base period[1]	10	years
	Year beginning base period range	2001	
	Year ending base period range[2]	2010	

Note:

[1] If the 2008 recycled water percent is less than 10 percent, then the first base period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first year base period is a continuous 10- to 15-year period.

[2] The ending year must be between December 31, 2004 and December 31, 2010.

8.1.2 Base Daily Per Capita Water Use

Tables 8-2 and 8-3 provide the base daily per capita water use for a 10-year range and 5-year range for RCSD, respectively. The calculation is used to determine whether the water supplier's 2015 Interim Target and 2020 Target meet the legislation's minimum water use reductions. The 2020 Target has to be either 80 percent of the 10-year Baseline (ending no earlier than December 31, 2004, and no later than December 31, 2010) or 95 percent of the 5-year baseline (ending no earlier than December 31, 2007, and no later than December 31, 2010), whichever is more conservative. Water conservation methods (demand management measures) will be practiced as discussed in Section 5 to help achieve the 20 percent reduction target.

RCSD used Methodology 1 (10-year base period) to determine the 10-year Baseline of 177 gpcd. The 2020 Target (20 percent reduction) is 142 gpcd. The 2015 Interim Target (10 percent reduction) is 160 gpcd.

TABLE 8-2: RCSD BASE DAILY PER CAPITA WATER USE – 10-YEAR RANGE

Base period year*		Distribution system population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar year			
1	2001	14,600	2.8	192
2	2002	14,900	2.9	195
3	2003	15,300	2.7	176
4	2004	15,400	2.8	182
5	2005	17,300	2.7	156
6	2006	16,700	3.1	186
7	2007	17,900	3.3	184
8	2008	17,300	3.3	191
9	2009	17,700	2.8	158
10	2010	17,700	2.7	153
10-year Baseline Daily Per Capita Water Use				**177**
2020 Target (20% Reduction)				**142**
2015 Interim Target (Average of Baseline and 2020 Target)				**160**

Note:
[1]Add values in the column and divide by the number of rows.
*Most recent year in base period must end no earlier than December 31, 2004, and no later than December 31, 2010.

TABLE 8-3: RCSD BASE DAILY PER CAPITA WATER USE – 5-YEAR RANGE

Base period year*		Distribution system population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
1	2003	15,300	2.7	176
2	2004	15,400	2.8	182
3	2005	17,300	2.7	156
4	2006	16,700	3.1	186
5	2007	17,900	3.3	184
Base Daily Capita Water Use[1]				**177**
95% of Baseline				**168**

Note:
[1]Add values in the column and divide by the number of rows.
*Most recent year in base period must end no earlier than December 31, 2007, and no later than December 31, 2010.

9.1 Low 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 any city, county, or city and county in the service area of the water purveyor. Lower income is established by the state as 80 percent of area's median income.

The projections are meant to assist water purveyors 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.

Table 9-1 shows the estimated low income projected water demands for RCSD. The low income water demand projections were based on 37 percent of demand. The Antelope Valley Area Housing Needs Assessment Populations and Household Income Maps identified the projected low income housing units for the region.

TABLE 9-1: LOW INCOME PROJECTED WATER DEMANDS (AF)

Low Income Water Demands	2015	2020	2025	2030	2035
RCSD service area	1,300	1,500	1,800	2,000	2,400

Note: All numbers are rounded to the nearest 100 AF.

Section 10: Water Shortage Contingency Analysis

This water shortage contingency analysis is based on water shortages that arise not only from drought, but shortages resulting from earthquakes, fires, system failures, and water quality contamination as well. Recent drought-related water management experiences for water agencies in California have revealed the complexity of coping with a water supply shortage. These experiences are well-documented and ready for implementation in the future by most agencies. Various water shortage scenarios may require similar drought-related actions, but may involve different complications that must be taken into account to address the shortage.

10.1 Minimum Water Supply

As such, RCSD's three-year minimum water supply is provided in Table 10-1. The average normal water year was set as 2010. Three-year minimum supply was determined to occur for the base years. As shown, RCSD currently has a sufficient water supply portfolio to meet their current demands over the next 3 years given a worst case water supply scenario.

TABLE 10-1: THREE-YEAR MINIMUM WATER SUPPLY (AF)

Area	Source	Year 1	Year 2	Year 3	Normal Demand in 2010
RCSD	Groundwater	4,600	4,600	4,600	2,800
	Imported Water	1,000	1,000	1,000	300
	Recycled Water	0	0	0	0
	Total	**5,600**	**5,600**	**5,600**	**3,100**

Notes: All numbers are rounded to the nearest 100 AF.

10.2 Planning

Coordination among RCSD and other purveyors within the Antelope Valley is essential when planning for a loss of supply. This is especially true since several water purveyors share the same water sources and will be equally affected when a loss occurs. It is also essential for planning to be coordinated with AVEK, the wholesale water supplier, since AVEK will need to take similar actions for each water purveyor in the time of need.

10.3 Drought Conditions

Being located within an arid region of southern California, the Antelope Valley is highly susceptible to drought conditions. Thus it is important for the water purveyors to have a plan in place to ease the impacts to the water supply during times of drought. The DMMs discussed in Section 5 will play an essential role in limiting water use during drought times, but further measures are often incorporated in a Water Shortage Contingency Plan (WSCP).

10.4 Earthquakes or Other Natural Disaster

The Antelope Valley is located in an earthquake zone. In the event of an earthquake or natural disaster, the Antelope Valley has the potential of losing its SWP supply. According to the California Division of Mines and Geology, a displacement along the San Andreas Fault could rupture the two aqueduct systems importing water to southern California, resulting in a potential

delay of three to six weeks in SWP water delivery. Additional delays may occur due to damage to pumping facilities. DWR estimates a four month delay if a major break should occur.

If such a delay occurs, RCSD could temporarily increase its groundwater production and utilize its emergency storage to meet water demands until the aqueduct was repaired. In the event of a prolonged absence of SWP water, the water purveyors could implement their established "No Waste" Ordinances and WSCP Stages to substantially reduce demands until SWP supply is restored.

10.4.1 SWP Emergency Outage Scenarios

Following is a discussion of three possible scenarios for an outage of SWP water due to earthquake, power outage, or other event. In past years, flood events and subsidence repairs were handled by DWR without interruption in delivery. This is mainly due to a key design feature of the aqueduct which allows isolation of various sections. Thus DWR can repair the damaged section without interrupting operation of another. However, three potential scenarios that would result in a loss of delivery to the Antelope Valley are described below. They include a levee breach near the Sacramento-San Joaquin Delta, loss of the San Joaquin Valley transfers due to flood or earthquake, and loss of the East Branch due to earthquake. The water purveyors' ability to meet demands during the worst of these scenarios is also presented.

10.4.1.1 Levee Breach near Banks Pumping Plant

The Delta plays an essential role in the SWP operation. Water from the Delta is diverted to the SWP's main pumping facility, the Banks Pumping Plant located in the southern Delta, into the California Aqueduct. If a major levee breach were to occur near this facility, the freshwater in the Delta may become displaced with saltwater rushing in from the San Francisco Bay. Pumping from the Delta would cease until the water quality was restored. Depending on the time of the breach, the necessary fresh water inflows required to restore the Delta may not be available.

Historically levee breaks, such as the Jones Tract break, may take several months to completely restore. Assuming that the Banks Pumping Plant was down for six months, DWR could utilize water stored in the San Luis Reservoir to continue delivery of some SWP water to Southern California. However, availability of supply will vary depending on the time of the breach. An occurrence in late summer/early fall, would result in minimal delivery due to the typically low levels in San Luis Reservoir during this period. In addition to supply from San Luis Reservoir, RCSD could utilize storage from their facilities or temporarily pump additional groundwater until the Delta is restored. RCSD could also utilize any water previously stored in groundwater banks.

10.4.1.2 Complete Disruption of the California Aqueduct in the San Joaquin Valley

As demonstrated by the past flood event at Arroyo Pasajero, which resulted in the temporary loss of the Edmund G. Pat Brown portion of the California Aqueduct, the SWP facilities are vulnerable to flood. If a similar incident were to occur due to flood or earthquake, loss of deliveries from the San Luis Reservoir could result. DWR anticipates an outage of up to four months should a loss in this portion of the California Aqueduct occur. If delivery were prevented from the San Luis Reservoir, RCSD could receive water through the Domestic-Agricultural Water Network (DAWN) facilities or temporarily pump additional groundwater until the supply is restored. Additionally, RCSD could utilize any water previously banked.

10.4.1.3 Complete Disruption of the East Branch of the California Aqueduct

The East Branch of the California Aqueduct begins at a bifurcation of the aqueduct south of the Edmonston Pumping Plant. The East Branch conveys water through the Alamo Power Plant to the Pearblossom Pumping plant, which pumps the water 540 feet uphill. The water is then conveyed in an open channel into the Mojave Siphon Powerplant and into Lake Silverwood. When needed, water is discharged to the Devil's Canyon Power Plant and its two afterbays. The Santa Ana Pipeline then conveys the water 28 miles underground to the Aqueduct's terminus at Lake Perris.

If a portion of the East Branch were damaged due to a major earthquake, deliveries to the water purveyors could be interrupted depending on the location of the break. It is assumed that a single-location break occurred north of the Pearblossom Pumping Plant and prevented delivery of water stored in the DAWN facilities. RCSD could temporarily pump additional groundwater or utilize water stored in groundwater banks until SWP delivery resumed.

Of the three scenarios, the disruption of the East Branch of the California Aqueduct would result in the worst-case scenario for the water purveyors of the Antelope Valley since it would prevent the delivery of SWP supply. In this case, RCSD would rely on local groundwater and water stored in groundwater banks. An assessment of water supply and demand for a six month SWP interruption is presented in Table 10-2. Water supplies are assumed to be one half of the volumes available in a single dry-year with the exception of recycled water. Recycled water was assumed at a reduced rate of 10 percent due to a reduction in waste discharge from voluntary conservation measures.

Table 10-2 shows that with increased groundwater pumping and utilization of banked water within the Antelope Valley, the DMMs described in Section 5 are sufficient in the event of a six-month interruption in imported supply. Thus no additional conservation is required. However, if RCSD elects to conserve groundwater supplies and banked water for more severe dry-year conditions, additional conservation efforts could be utilized to minimize demand.

TABLE 10-2: PROJECTED SUPPLIES AND DEMAND DURING A SIX-MONTH DISRUPTION IN IMPORTED SUPPLY (AF)

	2015	2020	2025	2030	2035
RCSD Existing Supply					
Groundwater	4,600	4,600	4,600	4,600	4,600
Imported Water	0	0	0	0	0
Total Existing Supply	4,600	4,600	4,600	4,600	4,600
RCSD Planned Supply					
Groundwater Banking/New Supply	1,500	1,500	1,500	1,500	1,500
Recycled Water	1,000	1,000	1,000	1,000	1,000
Total Planned Supply	2,500	2,500	2,500	2,500	2,500
Total Existing and Planned Supply	**7,100**	**7,100**	**7,100**	**7,100**	**7,100**
RCSD Demand (wout/ conservation)	**3,400**	**4,100**	**4,700**	**5,500**	**6,400**
RCSD Demand (w/ conservation)	**3,300**	**3,300**	**3,800**	**4,400**	**5,100**
Additional Conservation Required	0	0	0	0	0

10.5 Power Outages

In the event of a power outage, the water purveyors would follow their established Emergency Response Procedures (ERPs). ERPs for a power outage include ensuring back-up power supply for all water supply facilities to continue supplying water to customers, communicating with the power company, activating emergency connections with adjacent water systems, continuing water quality monitoring, and issuing boil water advisories as necessary.

10.6 Contamination

Contamination of water supply can result from a number of different events including a reduction in water supply, water main break, cross-connection condition, water source pollution or covert action. Water supplies within the Antelope Valley are generally of good quality and no foreseeable permanent contamination issues are anticipated. In the event of a toxic spill or major contamination, the water purveyors would follow their ERPs to isolate the problem and

reduce the impact to the water supply. Once the problem has been isolated, the contamination would be cleaned up using the outlined chlorination or other necessary procedures and the water supply returned to service as soon as possible. In the meantime, emergency storage or alternative supply would be used to meet demand. Implementation of additional DMMs could also be utilized if the outage is anticipated to be of longer consequence.

10.7 Stages of Action

RCSD has adopted a WSCP for its service area. This plan is described in more detail below and a copy is provided in Appendix E.

RCSD has adopted a four stage WSCP that is summarized in Table 10-3. The stages were designed to provide a minimum of 50 percent of normal supply during a water shortage event. Table 10-4 provides a description of the triggers for the rationing stages.

TABLE 10-3: RCSD STAGES OF ACTION

Phase	1	2	3	4
Anticipated Shortage that Triggers Phase	Up to 15%	15 to 25%	25 to 35%	35 to 50%
Conservation Target	85%	75%	65%	50%
Type of Rationing	Voluntary	Mandatory	Mandatory	Mandatory

TABLE 10-4: RCSD TRIGGERING MECHANISMS

Phase	1	2	3	4
Current Supply	85 to 90% of normal supply	75 to 85% of normal supply	65 to 75% of normal supply	Less than 65% of normal supply
Future Supply	Insufficient supply to provide 80% for next two years	Insufficient supply to provide 75% for next two years	Insufficient supply to provide 65% for next two years	Insufficient supply to provide 50% for next two years
Groundwater	No excess groundwater pumped	First year excess groundwater pumped	Second year excess groundwater pumped	No excess groundwater available
Water Quality	Loss of 10% from contamination	Loss of 20% from contamination	Loss of 30% from contamination	
Disaster Loss				Disaster Loss

10.7.1.1 Prohibitions, Consumption Reduction Methods and Penalties

The "No Waste" Ordinance adopted by RCSD outlines the mandatory prohibition on water wasting and describes the excessive-use penalties enforced by both districts. A copy of the ordinance is provided in Appendix D. Table 10-5 provides a summary of the consumption methods and the stages in which they take effect.

TABLE 10-5: RCSD CONSUMPTION REDUCTION METHODS

Consumption Reduction Methods	Stages Method Takes Effect
Demand reduction program	All stages
Flow restriction	4
Restrict building permits	2, 3, 4
Use prohibitions	All stages
Water shortage pricing	All stages
Voluntary rationing	1
Mandatory rationing	2, 3, 4
Education program	All stages
Percentage reduction by customer type	2, 3, 4

10.7.1.2 Revenue and Expenditure Impacts

RCSD uses all surplus revenues collected during the stages to fund a Rate Stabilization Fund, conservation, recycling, and capital improvements. The fund will be maintained at 75 percent of the normal water revenue and will be used to stabilize rates during periods of water shortage or disaster to minimize the need to adjust rates during the shortage. However, during prolonged shortages, rates may need to be increased. RCSD estimates the following percent increases for the given phases:

Stage 1: No increase
Stage 2: 25 percent increase
Stage 3: 50 percent increase
Stage 4: 100 percent increase

After a shortage ends, rates will be increased by 15 percent of the pre-shortage rate for one year.

10.7.1.3 Reduction Measuring Mechanism

In order to monitor the reduction in water use during a water shortage stage, daily production figures are recorded. During Stage 1 and 2, weekly production will be compared to the target weekly production. These weekly reports will be forwarded to the General Manager and Water Shortage Response Team. If goals are not met, the Board of Directors is notified so corrective action can be taken. During Stage 3 and 4, the procedures are the same with the General Manager receiving the daily reports as well as the weekly reports.

Appendix A

Urban Water Management Planning 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

RCSD-Notice of Public Hearing and Adoption Resolution

ROSAMOND COMMUNITY SERVICES DISTRICT
NOTICE OF PUBLIC HEARING
2010 URBAN WATER MANAGEMENT PLAN

This announcement is to provide notice that a public workshop will be held on Thursday June 16, 2011 at 6:00 PM. The workshop will be hosted by Rosamond Community Services District (RCSD) and held at the:

Rosamond Community Services District
3179 35th Street West
Rosamond CA 93560

The public workshop will serve to discuss RCSD's 2010 Urban Water Management Plan (UWMP) and will provide an opportunity for the public to make comments on the content of the UWMP. Copies of UWMP are available and may be reviewed at the District office.

The plan has been prepared in compliance with the Urban Water Management Planning Act and includes a water-shortage contingency plan, the projection of future water demands, identification of sufficient water supplies to meet projected water demands, and an explanation of existing and future water conservation practices to meet the reduction of 20 percent per capita use by the year 2020 based on the legislative Senate Bill X7-7.

For further information regarding this matter, please call (661) 256-3411.

ROSAMOND NEWS
P.O. BOX 848
ROSAMOND, CA 93560

PROOF OF PUBLICATION
STATE OF CALIFORNIA

COUNTY OF KERN } SS

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the assistant principal clerk of the printer of the Rosamond Weekly News - Rosamond News a newspaper of general circulation, printed and published weekly in the Community of Rosamond, county of Kern, and which newspaper has been adjudicated a newspaper of general circulation by the Superior Court of the County of Kern, State of California, under date of June 22, 1988, case Number 201662; that the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

6/6, 6/13

All in the year 2011

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

ROSAMOND COMMUNITY SERVICES DISTRICT
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2010 URBAN WATER MANAGEMENT PLAN

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For further information regarding this matter, please call (661) 256-3411.

Published in the Rosamond Weekly News June 6, June 13, 2011

RESOLUTION 2011-16

**RESOLUTION OF THE BOARD OF DIRECTORS
OF THE ROSAMOND COMMUNITY SERVICES DISTRICT
KERN COUNTY, CALIFORNIA, APPROVING THE
2010 URBAN WATER MANAGEMENT PLAN
FOR THE ROSAMOND COMMUNITY SERVICES DISTRICT**

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

WHEREAS, the Rosamond Community Services District has approximately 5,000 service connections and is therefore required to prepare and adopt Urban Water Management Plan; and

WHEREAS Rosamond Community Services District (Rosamond CSD) is a retail supplier of water; and

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

WHEREAS the Plan must be adopted by July 1, 2011, after public review and hearing, and filed with the California Department of Water Resources within thirty days of adoption; and

WHEREAS Rosamond CSD has therefore, prepared and circulated for public review a draft 2010 Urban Water Management Plan, and a properly notified via public hearing regarding said Plan was held by the Board of Directors of Rosamond CSD on June 16, 2011, and

WHEREAS Rosamond CSD did prepare and shall file said Plan with the California Department of Water Resources by July 31, 2011;

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of Rosamond CSD that the 2010 Urban Water Management Plan is hereby adopted and the General Manager is hereby authorized and directed to file the 2010 Urban Water Management Plan with the California Department of Water Resources within 30 days of this date.

The foregoing Resolution, on the 22nd day June, 2011, was adopted by the Board of Directors of the Rosamond Community Services District as the governing body of the Rosamond Community Services District.

By_____

Byron Glennan, President
Board of Directors

ATTEST:

By_____

Lizette Guerrero, Secretary
Board of Directors

Geotechnical
Environmental
Water Resources
Ecological

July 7, 2011

Department of Water Resources
Statewide Integrated Water Management
Water Use and Efficiency Branch
901 P Street
Sacramento, CA 95814

Attention: Coordinator, Urban Water Management Plans

Re: Rosamond Community Services District 2010 UWMP

The Rosamond Community Services District (RCSD) has completed and adopted the 2010 Urban Water Management Plan. GEI Consultants, Inc. is submitting the 2010 Urban Water Management Plan on behalf of RCSD. Pursuant to California Water Code, Section 10644(a), enclosed is the RCSD 2010 Urban Water Management Plan. In addition, a copy of the RCSD 2010 Urban Water Management Plan will be supplied to any city or county within which RCSD provides water, within 30 days, and a copy will be made available at the RCSD office for public review.

Sincerely,

GEI CONSULTANTS, INC.
Bookman-Edmonston Division

www.geiconsultants.com

GEI Consultants, Inc.
5100 California Avenue, Suite 227, Bakersfield, CA 93309
661.327.7601 fax 661.327.0173

Geotechnical
Environmental
Water Resources
Ecological

July 7, 2011

California State Library
Government Publications Section
900 N Street
Sacramento, CA 95814

Attention: Coordinator, Urban Water Management Plans

Re: Rosamond Community Services District 2010 UWMP

The Rosamond Community Services District (RCSD) has completed and adopted the 2010 Urban Water Management Plan. GEI Consultants, Inc. is submitting the 2010 Urban Water Management Plan on behalf of RCSD. Pursuant to California Water Code, Section 10644(a), enclosed is the RCSD 2010 Urban Water Management Plan. In addition, a copy of the RCSD 2010 Urban Water Management Plan will be supplied to any city or county within which RCSD provides water, within 30 days, and a copy will be made available at the RCSD office for public review.

Sincerely,

GEI CONSULTANTS, INC.
Bookman-Edmonston Division

www.geiconsultants.com

GEI Consultants, Inc.
5100 California Avenue, Suite 227, Bakersfield, CA 93309
661.327.7601 fax 661.327.0173

Rosamond Community Services District

BOARD OF DIRECTORS
Byron Glennan, President
Charlene Melchers, Vice-President
Greg Wood
Rick Webb
Kathleen Spoor

OFFICERS
Steve A. Perez
General Manager
Young Wooldridge
Counsel
Lizette Guerrero
Board Secretary

NOTICE OF AVAILABILITY FOR PUBLIC REVIEW
2010 URBAN WATER MANAGEMENT PLAN

The Rosamond Community Services District (RCSD) has completed and adopted the 2010 Urban Water Management Plan. Pursuant to California Water Code, Section 10645, RCSD will make the 2010 Urban Water Management Plan available at the RCSD office for public review during normal business hours, beginning on August 1st, 2011. The address and normal business hours for RCSD are as follows:

3179 35th Street West
Rosamond, CA 93560
Office Hours: Monday-Thursday, 8:00am to 5:00pm
Closed for lunch: 11:30am to 12:00pm

For further information regarding this matter, please call (661) 256-3411.

3179 35th Street West Rosamond, CA 93560
661-256-3411 Fax: 661.256.2557
Website: www.rosamondcsd.com

Appendix C

RCSD-Consumer Confidence Report

2009 SUMMARY OF WATER QUALITY DATA
ROSAMOND COMMUNITY SERVICES DISTRICT WATER SYSTEM

MICROBIOLOGICAL CONTAMINANTS	TEST DATE	UNIT	PHG	MCL	AVERAGE	VIOLATION	SOURCE OF CONTAMINANTS
Total Coliform Bacteria	2009		0	0	0	No	Naturally present in the environment.
DISINFECTION BY-PRODUCTS* **	**TEST DATE**	**UNIT**	**PHG**	**MCL**	**AVERAGE**	**VIOLATION**	**SOURCE OF CONTAMINANTS**
Total Trihalomethane (TTHM)	2009	ppb	n/a	80	20.8	No	By-product of drinking water chlorination
Total Haloacetic Acids (HAA5)	2009	ppb	n/a	60	3.7	No	By-product of drinking water chlorination
Chlorine	2009	ppm	4	4	0.8	No	Drinking water disinfectant added for treatment
INORGANIC CHEMICALS	**TEST DATE**	**UNIT**	**PHG**	**MCL**	**AVERAGE**	**VIOLATION**	**SOURCE OF CONTAMINANTS**
Nitrate	2009	ppm	45	45	7.5	No	Runoff and leaching from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Arsenic	2009	ppb	n/a	10	8.8	No	Erosion of natural deposit; runoff form orchards; glass and electronics productions wastes
Chromium	2009	ppb	2.5	50	14.6	No	Discharge from steel and pulp mills and chrome plating, erosion of natural deposits.
Fluoride	2009	ppm	.15	2	0.6	No	Erosion of natural deposits; water additive, which promotes strong teeth; discharge from fertilizer and aluminum factories.
Turbidity	2006	NTU	n/a	TT(5.0)	0.06	No	Soil runoff
Secondary Drinking Water Standards	**TEST DATE**	**UNIT**	**PHG**	**MCL**	**AVERAGE**	**VIOLATION**	**SOURCE OF CONTAMINANTS**
Alkalinity	2009	ppm	n/a	n/a	123	No	
Calcium	2009	ppm	n/a	n/a	38	No	Erosion of natural deposits
Chloride	2009	ppm	n/a	(600)	27	No	Runoff/leaching from natural deposits; seawater influence
Hardness	2009	ppm	n/a	n/a	128	No	Naturally-occurring polyvalent action present in the water, generally magnesium and calcium
Sodium	2009	ppm	n/a	n/a	47	No	Naturally-occurring salt; seawater influence
Specific conductance	2009	umhos/cm	n/a	(1600)	456	No	Substances that form ions when in water; seawater influence
Total dissolved solids	2009	ppm	n/a	(1000)	303	No	Runoff/leaching from natural deposits
Color	2009	Units	n/a	15	ND		Naturally occurring organic materials
Metals – (LEAD & COPPER Monitoring)	**TEST DATE**	**UNIT**	**PHG**	**MCL**	**AVERAGE**	**VIOLATION**	**SOURCE OF CONTAMINANTS**
Copper	2009	ppm	0.17	AL = n/a 1000	0.18	n/a	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead	2009	ppb	2	AL = n/a	ND	n/a	Internal corrosion of household water plumbing systems: discharges from industrial manufacturers

KEY TO TABLE

AL= Regulatory Action Level * ND = none detected * PHG = Public Health Goal * MCL = Maximum Contaminant Level NTU = Nephelometric Turbidity Units * SMCL = Secondary Maximum Contaminant Level * MCLG = Maximum Contaminant Level Goal * pCi/L = picocuries per liter (a measure of radioactivity) * TT = Treatment Technique * n/a = not applicable ppb = parts per billion, or micrograms per liter * ppm = parts per million, or micrograms per liter * umhos/cm = units of specific conductance

Appendix D

RCSD-“No Waste” Ordinance

ORDINANCE NO. 2009-1

AN ORDINANCE OF THE BOARD OF DIRECTORS OF THE ROSAMOND COMMUNITY SERVICES DISTRICT, COUNTY OF KERN, STATE OF CALIFORNIA, AMENDING ORDINANCE NO. 2001-01 TO UPDATE THE WATER CONSERVATION (NO WASTE) PROGRAM

WHEREAS, the Board of Directors of the Rosamond Community Services District (the "District") in accordance with the Community Services District Law, Sections 61000 and following the Government Code of California, has duly adopted its Ordinance No. 2001-01 "An Ordinance Amending Ordinance No. 92-6 to establish a Water Conservation (No Waste) Program;" and

WHEREAS, California Constitution article X, section 2 and California Water Code section 100 provide that because of conditions prevailing in the state of California (the "State"), it is the declared policy of the State that the general welfare requires that the water resources of the State shall be put to beneficial use to the fullest extent of which they are capable, the waste or unreasonable use of water shall be prevented, and the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and the public welfare; and

WHEREAS, pursuant to California Water Code section 106, it is the declared policy of the State that the use of water for domestic use is the highest use of water and that the next highest use is for irrigation; and

WHEREAS, pursuant to California Water Code section 375, the District is authorized to adopt and enforce a water conservation program to reduce the quantity of water used by persons within its jurisdiction for the purpose of conserving the water supplies of the District; and

WHEREAS, on September 28, 2006, the Governor of the State announced measure AB 1881, to significantly increase water conservation in California through new landscape irrigation requirements, which would require a local agency to adopt an ordinance that is at least as effective in conserving water as the updated model ordinance created by the Department of Water Resources; and

WHEREAS, on June 4, 2008, the Governor of the State proclaimed a condition of statewide drought and strongly encouraged local agencies to take aggressive, immediate action to reduce water consumption locally and regionally for the remainder of 2008 and prepare for potentially worsening conditions in 2009; and

WHEREAS, because of the prevailing conditions in the State, the current statewide drought, and the declared policy of the State the District that the District manage its water resources for the general welfare to ensure their beneficial use to the fullest extent of which they are capable, the District hereby finds and determines that it is necessary and appropriate for the District to adopt, implement, and enforce a water conservation program to reduce the quantity of water used by consumers within the District to ensure that there is sufficient water for human consumption, sanitation, and fire protection; and

WHEREAS, pursuant to California Water Code section 350, the Board of Directors of the District (the "Board of Directors") is authorized to declare a water shortage emergency to prevail within its jurisdiction when it finds and determines that the District will not be able to or cannot satisfy the ordinary demands and requirements of water consumers without depleting the water supply of the District to the extent that there would be insufficient water for human consumption, sanitation, and fire protection, and as more fully set forth in this ordinance; and

WHEREAS, the District hereby finds and determines that in the event the District determines that it is necessary to declare that a water shortage emergency exists, the District will be authorized pursuant to this ordinance to implement drought response measures and a water conservation and regulatory program to regulate water consumption activities within the District and ensure that the water delivered in the District is put to beneficial use for the greatest public benefit, with particular regard to domestic use, including human consumption, sanitation, and fire protection, and that the waste or unreasonable use of water is prevented; and

WHEREAS, the District is authorized and hereby finds and determines that it is necessary to prescribe and define by ordinance restrictions, prohibitions, and exclusions for the use of water during a threatened or existing water shortage and adopt and enforce a water conservation and regulatory program to: (i) prohibit the wastage of District water or the use of District water during such period; (ii) prohibit use of water during such periods for specific uses which the District may from time to time find nonessential; and (iii) reduce and restrict the quantity of water used by those persons within the District for the purpose of conserving the water supplies of the District; and

WHEREAS, the District hereby finds and determines that the District shall: (i) implement water conservation and drought response measures; (ii) regulate the water consumption activities of persons within the District for the purposes of conserving and protecting the District's water supplies, reducing the quantity of water consumed, and deterring and preventing the waste or unreasonable use or unreasonable method of use of valuable water resources; and (iii) establish and collect regulatory fees and impose fines and penalties as set forth herein to accomplish these purposes and recover the costs of the District's water conservation and regulatory program; and

WHEREAS, the Board of Directors hereby finds and determines that it is desirable to codify the rules and regulations governing its actions, and the actions of persons using and consuming water within the District, particularly during declared water shortages and water shortage emergencies, to protect the general welfare and the District's water supplies, and to reduce water consumption all in accordance with the declared policies and laws of the State; and

WHEREAS, the Board of Directors hereby further finds and determines that this ordinance and the Rules and Regulations set forth in **Exhibit A,** attached hereto and by this reference incorporated herein, are in the public interest, serve a public purpose, and will promote the health, welfare, and safety of the people of the District.

BE IT ORDAINED by the Board of Directors of the Rosamond Community Services District as follows:

Section 1. Recitals.

The District hereby finds and determines that the above recitals are true and correct and incorporated herein.

Section 2. Findings and intent.

(A) The Board of Directors finds and determines that because of the prevailing conditions in the State, and the declared policy of the State, it is necessary and appropriate for the District to adopt, implement, and enforce a water conservation program to reduce the quantity of water used by persons within the District to ensure that there is sufficient water for human consumption, sanitation, and fire protection. The District further finds and determines that during periods of drought, water shortages, and water shortage emergencies the general welfare requires that the District maximize the beneficial use of its available water resources to the extent that it is capable, and that the waste or unreasonable use, or unreasonable method of use of water shall be prevented and the conservation of water is to be extended with the view to the reasonable and beneficial use thereof in the interests of the people of the District and for the public health, safety, and welfare.

(B) This ordinance establishes water conservation and drought response measures and Rules and Regulations to be implemented during declared water conservation stages.

(C) This ordinance establishes five stages of water conservation and drought response measures to be implemented by the District, with increasing restrictions on water use in response to decreasing water supplies and worsening drought conditions.

Section 3. Purpose and scope.

(A) The purpose of the water conservation provisions of this ordinance are to:

(1) protect the health, safety and welfare of the citizens and property owners of the District;

(2) assure the maximum beneficial use of District water supplies;

(3) attempt to provide sufficient water supplies to meet the basic needs of human consumption, sanitation, and fire protection.

(B) This ordinance is not intended to repeal, abrogate, annul, impair or in any way interfere with the free use of property by covenant, deed, or other private agreement or with restrictive covenants running with the land to which the District provides water services.

(C) The provisions of this ordinance shall apply to all persons within the District and all property served by the District wherever situated.

(D) Nothing in this ordinance is intended to affect or limit the ability of the District to respond to an emergency, including an emergency that affects the ability of the District to supply water.

Section 4. Definitions.

For the purposes of this ordinance, the following words, terms, and phrases shall have the following meanings:

(A) "Board of Directors" means the Board of Directors of the District.

(B) "District" means the Rosamond Community Services District, a community services district organized and existing pursuant to the Community Services District Law (California Government Code sections 61000 and following).

(C) "Enforcement Officer" means any individual employed or otherwise charged by the District to inspect or enforce codes, ordinances, mandates, regulations, resolutions, rules or other laws adopted by the Board of Directors or other regulatory bodies.

(D) "Graywater" means household wastewater other than toilet waste. Graywater includes wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs but does not include wastewater from kitchen sinks or dishwashers.

(E) "Person" means any natural person, firm, joint venture, joint stock company, partnership, public or private association, club, company, corporation, business trust, organization, public or private agency, government agency or institution, school district, college, university, any other user of water provided by the District, or the manager, lessee, agent, servant, officer or employee of any of them or any other entity which is recognized by law as the subject of rights or duties.

(F) "Property owner" means the record owner of real property based on the Kern County Assessor's records.

(G) "Rules and Regulations" mean the rules and regulations more fully set forth in Exhibit A hereto established pursuant to this ordinance for the regulation and enforcement of the District's Water Conservation (No Waste) Program.

(H) "Summer months" mean the months of April through October.

(I) "Water customer" or "customer" means a person who, according to the District's records, receives water service to a parcel of property.

(J) "Water shortage emergency" means a condition existing within the District in which the ordinary water demands and requirements of persons within the District cannot be satisfied without depleting the water supply of the District to the extent that there would be insufficient water for human consumption, sanitation, and fire protection. A water shortage emergency includes both an immediate emergency, in which the District is unable to meet current water needs of persons within the District, as well as a threatened water shortage, in which the District determines that its supply cannot meet an increased future demand.

(K) "Winter months" means the months of October through March.

Section 5. Water Conservation and unreasonable uses of water.

(A) It is unlawful at any time for any person to make, cause, or use or permit the use of water from the District for residential, commercial, industrial, agricultural, governmental, or any other purpose in a manner contrary to any provision of this ordinance, or in an amount in excess of that use permitted by the water conservation stages which are in effect pursuant to this ordinance or by action taken by the Board of Directors in accordance with this ordinance. The water conservation and drought response measures set forth in this Section 5 shall be in effect at all times.

(B) It is unlawful at any time for any person to waste water or to use it unreasonably. Unreasonable uses of water shall include, but are not limited to, the following practices:

(1) use of potable water to irrigate in such a manner as to result in runoff for more than 5 minutes;

(2) allowing potable water to escape from breaks within the customer's plumbing system for more than twenty-four (24) hours after the customer is notified or discovers the break;

(3) use of potable water to wash down sidewalks, driveways, parking areas, tennis courts, patios or other paved areas, except to alleviate immediate safety or sanitation hazards;

(4) washing automobiles, trucks, boats, trailers, airplanes or other types of mobile equipment by hose without a shutoff nozzle and bucket except to wash such vehicles at commercial or fleet vehicle washing facilities using water recycling equipment. Further, such washings are exempted from these regulations where the health, safety, and welfare of the public is contingent upon frequent vehicle cleanings, such as garbage trucks and vehicles used to transport food and perishables;

(5) use of potable water to clean, fill or maintain decorative fountains, lakes or ponds unless such item is re-circulating;

(6) except when specifically requested by a customer, serving water to a customer in a restaurant;

(C) Construction operations receiving water from a construction meter or water truck shall not use water unnecessarily for any purpose other than those required by regulatory agencies.

(D) The number of new construction meters shall not exceed the existing number of currently authorized meters. A new meter shall be issued only when an old meter is returned. Construction projects requiring water from a construction meter or a water truck shall not use water unnecessarily for any purposes other than those required by regulatory agencies.

(E) A water conservation stage shall be determined by the Board of Directors in accordance with the provisions of this ordinance. A water conservation stage shall remain in full force and effect until otherwise determined or discontinued by resolution of the Board of Directors declaring that existing water supply conditions and the supply of water available for distribution within the District's service area has been replenished or augmented.

(F) The Board of Directors may declare a water shortage emergency during any water conservation stage.

(G) For new construction, recycled water, or untreated surface water shall be used for construction dust control or exterior non-potable water application purposes.

(H) Rosamond Community Services (RCSD) will read meters once a month for monitoring and billing purposes.

(I) During Water Conservation Stage 1, the water conservation and drought response measures are voluntary and will be enforced through local and regional public education and awareness measures by the District.

(J) During Water Conservation Stages 2 through 5, the water conservation and drought response measures are mandatory and violations are subject to criminal, civil, and administrative penalties and remedies as specified in this ordinance and by State law.

Section 6. Landscape Restrictions.

(A) Residential Landscape Restrictions:

(1) Single-family and multifamily residential developments are prohibited from installing new turf in common areas of residential neighborhoods. This restriction shall not apply to public parks or privately owned and maintained parks, including required usable open space in multifamily developments.

(2) The installation of new turf is prohibited in residential front yards; provided, however, a residential property owner may apply to the District for an exemption from the prohibition of this Section 6. Upon the approval of such application, the property owner may be permitted to install new turf in the residential front yard (in the quantity allowed for the side and rear yards), and shall not install turf in the side and rear yards. The approval of any application hereto shall be conditioned upon the property owner to give permission for District staff to gain access to the back and side yards for compliance inspection purposes.

(3) For single-family residential lots, the installation of new turf in yard shall not exceed 20% percent of total yard.

(B) Non-Residential Landscape Restrictions:

(1) The installation of new turf in non-residential developments is prohibited, unless specifically permitted by a land use application approved by the District. Under no circumstances shall a land use application be approved to allow more than 50 percent of the turf permitted under Water Conservation Stage 2. Notwithstanding the forgoing, these provisions shall not apply to public or private schools or parks.

(C) Any person or association shall be prohibited from imposing private covenants, conditions, restrictions, deed clauses or other agreements between the respective parties, which prevent a person from utilizing water efficient landscaping, including, but not limited to, xeriscape, provided such landscaping receives appropriate review approval.

(D) The District will not grant any waiver or variance with respect to the standards listed in this Section 6. Such a request shall be considered a request to amend the requirements of this Section 6.

Section 7. Water Conservation Stage 1. – Normal Water Supply.

(A) Water Conservation Stage 1 is also referred to as a "Normal Water Supply" and applies during periods when the District is able to meet all of the water demands of its customers. Water Conservation Stage 1 is in effect at all times unless the Board of Directors otherwise declares that another water conservation stage is in effect pursuant to this ordinance. Water is a limited natural resource and must be used efficiently and economically to meet the health and safety needs of the community. All normal water efficiency programs and water conservation regulations of the District will be in full force and effect during Water Conservation Stage 1.

Section 8. Water Conservation Stage 2. – Minimum Water Shortage.

(A) Water Conservation Stage 2 is also referred to as a "Minimum Water Shortage" and applies during periods when a reasonable probability exists that the District will not be able to meet all of the water demands of its customers. Water Conservation Stage 2 may be caused by, but not limited to, any or all of the following circumstances or events:

(1) a regional water supply shortage exists and a regional public outreach campaign is being implemented asking or requiring all persons to reduce water use;

(2) groundwater wells are inoperable or unusable (such as by power outages, mechanical failure, or contamination);

(3) alternative water supplies are limited or unavailable;

(4) groundwater levels or groundwater quality is approaching levels which may require augmentation of the groundwater basin or other actions necessary to protect the groundwater basin as prescribed by the California Department of Water Resources, the Regional Water Quality Control Board, Kern County, or some other regulatory body.

(B) The objective of the measures undertaken in Water Conservation Stage 1 is to reduce water system consumption within the District by ten to fifteen percent.

(C) Upon declaration of a Water Conservation Stage 2 by the Board of Directors, implementation by the District and publication of notice, the following water conservation and drought response measures shall apply:

(1) The District shall determine the total amount of water delivered to the property of each customer in the prior fiscal year (the "Base Year Consumption Amount"). Water customers shall reduce their water consumption by ten to fifteen percent from the Base Year Consumption Amount for the duration of Water Conservation Stage 2. Provided, however, the Base Year Consumption Amount for any subsequent fiscal year shall be determined by the District as appropriate in the event that the District is required to continue Water Conservation Stage 2 for more than twelve months.

(2) Lawns and/or ground covers may be watered and landscaping may be irrigated, including construction meter irrigation, for a maximum of 25 minutes per day only during the following designated hours and designated days:

(a) lawns and/or ground cover may be watered and landscaping may be irrigated for properties with odd number street addresses, parks, and the public right of ways, only on Saturdays, Mondays, and Wednesdays between the hours of 6:00 p.m. to 6:00 a.m. during the winter months and 8:00 a.m. to 8 p.m. during the summer months;

(b) lawns and/or ground cover may be watered and landscaping may be irrigated for properties with even number street addresses only on Sundays, Tuesdays, and Thursdays between the hours of 6:00 p.m. to 6:00 a.m. during the winter months and 8:00 a.m. to 8 p.m. during the summer months;

(c) watering lawns and/or ground cover and irrigating landscaping is prohibited on Fridays and on any day of the week from 6:00 a.m. to 6:00 p.m. during the winter months and 8:00 a.m. to 8 p.m. during the summer months;

(3) All irrigation timers shall be adjusted to comply with the provisions of Section 8(C)(2) hereof.

(4) Notwithstanding the provisions of Section 8(C)(2) hereof, the use of graywater to irrigate fruit trees, lawns and ground covers, and ornamental trees and shrubs is permitted on any day and at any time. Provided, however, graywater may only be used in accordance with Kern County Health Department regulations.

(5) All swimming pools, spas, ponds, and fountains shall be equipped with recirculating pumps.

(6) All plumbing leaks, improperly adjusted sprinklers, or other water conduits/fixtures that require repair or adjustment shall be corrected to the satisfaction of the District.

(7) Water customers shall read their water meters at least once each month to monitor their water consumption.

(8) Use of water from fire hydrants shall be limited to fire fighting, related activities or other activities necessary to maintain the health, safety, and welfare of the public.

(9) All new Single Family Residence and Duplex homes shall be equipped with dual water meters and shall initially reduce water through landscape meters.

Section 9. Water Conservation Stage 3. – Moderate Water Shortage.

(A) Water Conservation Stage 3 is also referred to as a "Moderate Water Shortage" and applies during periods when the District will not be able to meet all of the water demands of its customers. Water Conservation Stage 3 may be caused by, but is not limited to, any or all of the following circumstances or events:

(1) a regional or statewide water supply shortage exists and a regional public outreach campaign is being implemented asking or requiring all persons to reduce water use;

(2) groundwater wells are inoperable or unusable (such as by power outages, mechanical failure, or contamination);

(3) alternative water supplies are limited or unavailable;

(4) groundwater levels or groundwater quality is approaching levels which may require augmentation of the groundwater basin or other actions necessary to protect the groundwater basin as prescribed by the California Department of Water Resources, the Regional Water Quality Control Board, Kern County, or some other regulatory body.

(B) The objective of the measures undertaken in Water Conservation Stage 3 is to reduce water system consumption within the District by fifteen to twenty percent.

(C) Except as otherwise provided in this Section 9, all water conservation and drought response measures of Water Conservation Stages 1 and 2 shall be in full force and effect during Water Conservation Stage 3. Upon declaration of a Water Conservation Stage 3 by the Board of Directors, implementation by the District

and publication of notice, the following water conservation and drought response measures shall apply:

(1) Water customers shall reduce their water consumption by fifteen to twenty percent from the Base Year Consumption Amount for the duration of Water Conservation Stage 3. Provided, however, the Base Year Consumption Amount for any subsequent fiscal year shall be determined by the District as appropriate in the event that the District is required to continue Water Conservation Stage 3 for more than twelve months.

(2) Lawns and/or ground cover may be watered and landscaping may be irrigated, including construction meter irrigation, for a maximum of twenty-five minutes per day, only during the following designated hours and designated days:

(a) lawns and/or ground cover may be watered and landscaping may be irrigated for properties with odd number street addresses, parks, and public right of ways, only on Saturdays and Wednesdays between the hours of 6:00 p.m. and 6:00 a.m.;

(b) lawns and/or ground cover may be watered and landscaping may be irrigated for properties with even number street addresses only on Sundays and Thursdays between the hours of 6:00 p.m. and 6:00 a.m.;

(c) watering lawns and/or ground cover and irrigating landscaping is prohibited on Mondays and Fridays and on any day of the week from 6:00 a.m. to 6:00 p.m.

(3) Notwithstanding the provisions of Section 9(C)(2) hereof, the use of graywater to irrigate fruit trees, lawns and ground covers, and ornamental trees and shrubs is permitted on any day and at any time. Provided, however, graywater may only be used in accordance with Kern County Health Department regulations.

(4) Irrigation timers shall be adjusted to comply with the provisions of Section 9(C)(2) hereof.

(5) The washing of automobiles, trucks, trailers, boats, airplanes and other types of mobile equipment is permitted only during the hours of 5:00 p.m. to 7 p.m. or to coincide with daylight savings PST, on Saturdays, Sundays, and Mondays with a hand-held bucket or a hand-held hose equipped with an automatic, positive shut-off nozzle for quick rinses. Washing is permitted at any time on the immediate premises of a commercial car wash. The use of water by all types of commercial car washes not using partially reclaimed or recycled water shall be reduced in volume by an amount determined by the Board of Directors. Further, such washings are exempt from these regulations where the health, safety, and welfare of the public is

contingent upon frequent vehicle cleanings, such as garbage trucks and vehicles used to transport food and perishables.

(6) The overfilling of swimming pools and spas is prohibited. The filling or refilling of ponds, streams, and artificial lakes is prohibited.

(7) The operation of any ornamental fountain or similar structure is prohibited except for short periods of time to prevent damage.

Section 10. Water Conservation Stage 4. – Severe Water Shortage.

(A) Water Conservation Stage 4 is also referred to as a "Severe Water Shortage" and applies during periods when the District will not be able to meet all of the water demands of its customers. Water Conservation Stage 4 may be caused by, but is not limited to, any or all of the following circumstances or events:

(1) a regional or statewide water supply shortage exists and a regional public outreach campaign is being implemented asking or requiring persons to reduce water use;

(2) groundwater wells are inoperable or unusable (such as by power outages, mechanical failure, or contamination);

(3) alternative water supplies are limited or unavailable;

(4) groundwater levels or groundwater quality is approaching levels which may require augmentation of the groundwater basin or other actions necessary to protect the groundwater basin as prescribed by the California Department of Water Resources, the Regional Water Quality Control Board, Kern County, or some other regulatory body; and

(5) a major failure of any supply or distribution facility, whether temporary or permanent, occurs in the water distribution system of the State, the Antelope Valley East Kern Water Agency, or District water facilities.

(B) The objective of the measures undertaken in Water Conservation Stage 4 is to reduce water consumption within the District by twenty to forty percent.

(C) Except as otherwise provided in this Section 10, all water conservation and drought response measures of Water Conservation Stages 1, 2 and 3 shall be in full force and effect during Water Conservation Stage 4. Upon declaration of a Water Conservation Stage 4 by the Board of Directors, implementation by the District and publication of notice, the following water conservation and drought response measures shall apply:

(1) Water customers shall reduce their water consumption by twenty to forty percent from the Base Year Consumption Amount for the duration of Water Conservation Stage 4. Provided, however, the Base Year Consumption Amount for subsequent fiscal years shall be determined by the District as appropriate in the event that the District is required to continue Water Conservation Stage 4 for more than twelve months.

(2) Irrigation of landscaping shall be limited to supporting minimal survival of trees and shrubs. Landscaping may be irrigated, including construction meter irrigation, for a maximum of twenty-five minutes per day only during the following designated hours and designated days:

(a) properties with odd number street addresses, parks, and public right of ways may irrigate landscaping only on Saturdays between the hours of 6:00 p.m. and 6:00 a.m.;

(b) properties with even number street addresses may irrigate landscaping and pastures only on Sundays between the hours of 6:00 p.m. and 6:00 a.m.;

(c) irrigating landscaping is prohibited on Mondays, Tuesdays, Wednesdays, Thursdays, and Fridays and on any day of the week from 6:00 a.m. to 6:00 p.m.

(3) Notwithstanding the provisions of Section 10(C)(2) hereof, the use of graywater to irrigate fruit trees, lawns and ground covers, and ornamental trees and shrubs is permitted on any day and at any time. Provided, however, graywater may only be used in accordance with Kern County Health Department regulations.

(4) All outdoor watering and irrigation of lawns and ground covers is prohibited with the exception of plant materials classified and determined by the District General Manager to be rare, exceptionally valuable, or essential to the well being of the public at large or rare animals.

(5) The washing of automobiles, trucks, trailers, boats, airplanes and other types of mobile equipment is prohibited. Washing is permitted at any time on the immediate premises of a commercial car wash. Commercial car washes shall only use partially reclaimed or recycled water for washing automobiles, trucks, trailers, boats, airplanes and other types of mobile equipment. Further, such washings are exempt from these regulations where the health, safety and welfare of the public is contingent upon frequent vehicle cleanings, such as garbage trucks and vehicles used to transport food and perishables.

(6) The filling, refilling, or adding of water to swimming pools, spas, ponds, streams, and artificial lakes is prohibited.

(7) The operation of any ornamental fountain, pond, or similar structure is prohibited except for short periods of time to prevent damage.

(8) The use of water for cooling mists is prohibited.

(9) The use of water for commercial, manufacturing, or processing purposes shall be reduced in volume by an amount determined by the Board of Directors.

(10) Provided the Board of Directors has declared a water shortage emergency pursuant to California Government code section 350 *et sseq.*, no new construction meters will be issued. Construction water shall not be used for earth work, road construction purposes, dust control, compaction, or trenching jetting. Construction projects necessary to maintaining the health, safety, and welfare of the public are exempt from these regulations.

(11) Provided the Board of Directors has declared a water shortage emergency pursuant to California Water Code sections 350 *et seq.*, except as to property for which a building permit has been heretofore issued, no new meter(s) will be installed, except in the following circumstances:

(a) for projects necessary to protect the public's health, safety, and welfare;

(b) when using reclaimed water;

(c) when the recipient of the building permit can demonstrate that no net increase in water use will occur; or

(d) where the recipient of the building permit provides a conservation offset. For purposes of this Section 10(C)(11)(d), "conservation offset" shall mean the implementation of proven conservation techniques which, when installed, will result in a reduction equal to demand of the proposed use. A conservation offset may be effected by paying a fee established by the District in an amount necessary to cover the cost of implementing such conservation techniques or acquiring alternative water sources. The fee will be based on the conservation offset required for an equivalent dwelling unit. Such fee shall apply to residential as well as commercial and industrial buildings, and may be adjusted from time to time as determined by the District.

Section 10. Water Conservation Stage 5. – Critical Water Shortage.

(A) Water Conservation Stage 5 is also referred to as a "Critical Water Shortage" and applies during periods when the District will not be able to meet all of the water demands of its customers. Water Conservation Stage 5 may be caused by, but is not limited to, any or all of the following circumstances or events:

(1) a regional or statewide water supply shortage exists and a regional public outreach campaign is being implemented asking or requiring all persons to reduce water use;

(2) groundwater wells are inoperable or unusable (such as by power outages, mechanical failure, or contamination);

(3) alternative water supplies are limited or unavailable;

(4) groundwater levels or groundwater quality is approaching levels which may require augmentation of the groundwater basin or other actions necessary to protect the groundwater basin as prescribed by the California Department of Water Resources, the Regional Water Quality Control Board, Kern County, or some other regulatory body;

(5) a major failure of any supply or distribution facility, whether temporary or permanent, occurs in the water distribution system of the State, the Antelope Valley East Kern Water Agency, or District water facilities and the District cannot meet all of the water demands of its customers.

(B) The objective of the measures undertaken in Water Conservation Stage 5 is to reduce water consumption by forty percent or more.

(C) Except as otherwise provided in this Section 11, all water conservation and drought response measures of Water Conservation Stages 1, 2, 3, and 4 shall be in full force and effect during Water Conservation Stage 5. Upon declaration of a Water Conservation Stage 5 by the Board of Directors, implementation by the District and publication of notice, the following water conservation and drought response measures shall apply:

(1) Water customers shall reduce their water consumption by forty percent or more from the Base Year Consumption Amount for the duration of Water Conservation Stage 5. Provided, however, the Base Year Consumption Amount for subsequent fiscal years shall be determined by the District as appropriate in the event that the District is required to continue Water Conservation Stage 5 for more than twelve months.

(2) All outdoor watering and irrigation of lawns and ground cover, and landscaping shall be prohibited, with the exception of the use of graywater to irrigate fruit trees, lawns and ground covers, and ornamental trees and shrubs, which is permitted on any day and at any time. Provided, however, graywater may only be used in accordance with Kern County Health Department regulations.

(3) Provided the Board of Directors has declared a water shortage emergency pursuant to California Water Code sections 350 *et seq.*, the District shall not allow any new connections to the water system during Water Conservation Stage 5.

Section 11. Conflicting Provisions.

If provisions of this ordinance are in conflict with each other, other rules and regulations of the District, any other resolution or ordinance of the District, or any State law or regulation, the more restrictive provisions shall apply.

Section 12. Severability.

If any provision, section, subsection, sentence, clause or phrase or sections of this ordinance, including Exhibit A hereto, or the application of same to any person or set of circumstances, is for any reason held to be unconstitutional, void or invalid, the invalidity of the remaining portions of sections of this ordinance shall not be affected, it being the intent of the Board of Directors in adopting this ordinance that no portions, provisions, or regulations contained herein shall become inoperative, or fail by reason of the unconstitutionality of any other provision hereof, and all provisions of this ordinance are declared to be severable for that purpose.

Section 1. Effective Date.

This ordinance shall be effective upon adoption. Before the expiration of 15 days after its passage, the Secretary shall cause this ordinance to be published once, with the names of the members voting for and against it, in a newspaper published in the County pursuant to the provisions of California Government Code Section 25124. Within ten (10) days after its adoption, the District Secretary shall cause this ordinance to be published once pursuant to California Government Code section 6061 in full in a newspaper of general circulation which is printed, published, and circulated in the District. If there is no such newspaper, the ordinance shall be posted within the District after its adoption in three public places.

Introduced at a regular meeting of the Board of Directors of the Rosamond Community Services District, Rosamond, California, held on the 11th day of March, 2009;

Enacted at a regular meeting of the Board of Directors of the Rosamond Community Services District, Rosamond, California, held on the 25th day of March, 2009, by the following vote: 5 Ayes, 0 Noes.

Kathleen Spoor, President
Board of Directors
Rosamond Community Services District

ATTEST:

Lizette Guerrero, Secretary of the Rosamond Community Services District and the Board of Directors thereof

Exhibit A
Rules and Regulations of the District's Water Conservation (No Waste) Program

Section 1. Mandatory Conservation Stage Implementation.

(A) The District General Manager, or his or her designee, shall monitor the projected supply and demand for water by water customers on a daily basis during periods of a water shortage or drought and shall recommend to the Board of Directors the extent of the conservation required through the implementation and/or termination of particular water conservation stages to prudently plan and supply water to water customers. Thereafter, the Board of Directors may order the implementation or termination of the appropriate water conservation stage.

(B) The declaration of any water conservation stage beyond Water Conservation Stage 1 shall be made by resolution of the Board of Directors. Within ten (10) days of the adoption of the resolution declaring the applicable Water Conservation Stage, the District shall make a public announcement of the applicable Water Conservation Stage, which shall be published a minimum of three (3) times for three (3) consecutive weeks. Three publications in a newspaper regularly published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates, are sufficient. Such declaration and notice shall provide the extent, terms, and conditions respecting the use and consumption of water in accordance with the applicable water conservation stage as provided in this ordinance. Upon such declaration and publication of such notice, due and proper notice shall be deemed to have been given to each and every person supplied water within the District. The water conservation stage designated shall become effective immediately upon announcement.

(C) The declaration of a water shortage emergency during any water conservation stage shall be made in accordance with California Water Code sections 350 *et seq.*

Section 2. Violations and remedies.

(A) It shall be unlawful for any person to willfully violate the provisions of this ordinance. Any violation of the provisions of this ordinance shall be a misdemeanor subject to imprisonment in the county jail for not more than thirty (30) days or by fine not to exceed $1,000, or by both as provided in California Water Code section 377.

(B) Upon conviction of a misdemeanor for violating any provision of this ordinance, a person shall be subject to payment of a fine, imprisonment or both, not to exceed the limits set forth by law.

(C) Upon conviction of an infraction for violating any provision of this ordinance, a person shall be subject to payment of a fine, not to exceed the limits set forth by law.

(D) In addition to criminal penalties, any conditions caused or permitted to exist in violation of any of the provisions of this ordinance is a threat to the public health, safety, and welfare and may be declared and deemed, after an administrative hearing, to be a public nuisance which may be summarily abated. The cost of such abatement shall be borne by the property owner of the premises and the cost thereof may be imposed as a lien upon and against the premises, and as such lien shall continue in existence until the same shall be paid.

(E) In addition to any other remedies provided in this ordinance or available under applicable law, the District can alternatively seek injunctive relief in the Superior Court or take enforcement action, including discontinuing or appropriately limiting water service to any customer, against any person who violates any provision of this ordinance through one or any combination of the administrative enforcement options set forth in this ordinance.

(F) All remedies provided herein shall be cumulative and not exclusive.

Section 3. Notice of violation.

(A) The District General Manager or his or her designee may serve a notice of violation onto the property owner and/or occupant of any property, and/or any other person responsible for a violation of this ordinance. The notice of violation shall:

(1) identify the provision(s) of this ordinance and any State law, if applicable, alleged to have been violated; and

(2) state that continued noncompliance may result in civil, criminal, or administrative enforcement actions against the person who committed the violation, or the property owner and/or occupant of the property where the violation occurred; and

(3) state a compliance date that must be met by the person who committed the violation, or the property owner and/or occupant of the property where the violation occurred; and

(4) order remediation work, where applicable, that must be taken by the property owner and/or occupant of the property.

(B) The notice of violation may include, where deemed applicable by the District General Manager or his or her designee, the following terms and conditions:

(1) specific steps or actions and time schedules for compliance as reasonable necessary to prevent future violations of this ordinance; and

(2) specific steps or actions and time schedules for compliance as necessary to prevent further violations; and

(3) any other terms, conditions, or requirements reasonably calculated to prevent continued or threatened future violations of this ordinance, including, but not limited to, discontinuing or limiting water service with the installation of a flow restricting device.

(C) In addition to or in conjunction with the notice of violation, for a first violation of any provision of this ordinance, within two weeks of the violation:

(1) the District may provide notice to the property owner or occupant of the property where the violation occurred to advise such person of:

(a) the water conservation stage then in effect and the provisions of this ordinance relating thereto;

(b) water conservation and drought response measures that are required and may be implemented pursuant to this ordinance;

(c) possible consequences and actions which may be taken by the District for future violations of this ordinance, including discontinuance of water service;

(d) penalties that may be imposed for the specific violation and any future violations of this ordinance; and

(2) if the District General Manager or his or her designee deems it to be appropriate, the District may order the installation of a flow-restricting device on the service line for any person who violates any term or provision of this ordinance.

(D) In addition to or in conjunction with the notice of violation, for a second or any subsequent violation of this ordinance, within two weeks of the violation:

(1) the District may provide notice to the property where the violation occurred to notify the property owner or occupant of the property where the violation occurred to advise such person of:

(a) the water conservation stage then in effect and the provisions of this ordinance relating thereto;

(b) the water conservation and drought response measures that are required and may be implemented by such person; and

(c) possible consequences which may occur in the event of any future violations of this ordinance;

(2) if the District General Manager or his or her designee deems it to be appropriate, the District may order the installation of a flow-restricting device on the service line for any person who violates any term or provision of this ordinance;

(3) if the District General Manager or his or her designee deems it to be appropriate, the District may discontinue water service at the location where the violation occurred.

(E) The District may, after one written notice of violation, order that a special meter reading or readings be made in order to ascertain whether wasteful or unreasonable use of water is occurring. The District may impose a meter reading fee for each meter reading it conducts pursuant to this ordinance.

Section 4. Cease and desist order.

(A) The District General Manager or his or her designee may issue a cease and desist order directing the property owner, or occupant, or other person in charge of day-to-day operations of any property, and/or any other person responsible for a violation of this ordinance to:

(1) immediately discontinue any prohibited use of water pursuant to this ordinance;

(2) immediately cease any activity not in compliance with the terms, conditions, and requirements of this ordinance.

Section 5. Administrative compliance order and penalties.

(A) Separate from, in addition to, or in combination with a notice of violation or cease and desist order, the District General Manager or his or her designee may issue an administrative compliance order against the property owner and/or occupant of the property where a violation of this ordinance occurred and/or any other person responsible for a violation of this ordinance who violates any provision of this ordinance. Issuance of a notice of violation or a cease and desist order is not a prerequisite to the issuance of an administrative compliance order. The administrative compliance order shall allege the act(s) or failure(s) to act that constitute violations of this ordinance and shall set forth the penalty for the violation.

(B) The District General Manager or his or her designee may impose the following monetary penalties, in addition to other appropriate action requirements:

(1) An amount that shall not exceed one hundred dollars ($100.00) for each day a person fails or refuses to timely comply with a notice of violation or cease and desist order required by the District General Manager or his or her designee or this ordinance.

(2) An amount that shall not exceed one thousand dollars ($1,000.00) per day for each day on which a person violates any provision of this ordinance. Unless timely

appealed, an administrative compliance order shall be effective and final as of the date it is issued by the District General Manager or his or her designee.

(C) The amount of any penalties imposed pursuant to this Section 15 which have remained delinquent for a period of sixty (60) days shall constitute a lien against the real property of the person violating this ordinance. The lien provided herein shall have no force and effect until recorded with the Kern County Recorder and when recorded shall have the force and effect and priority of a judgment lien and continue for ten (10) years from the time of recording unless sooner released, and shall be renewable in accordance with the provisions of Sections 683.110 to 683.220, inclusive, of the California Code of Civil Procedure.

(D) All moneys collected under this Section 15 shall be deposited in a special account of the District and shall be made available for enforcement of this ordinance.

(E) The District may, at its option, elect to petition the Superior Court to confirm any order establishing administrative penalties and enter judgment in conformity therewith in accordance with the provisions of Sections 1285 to 1287.6, inclusive, of the California Code of Civil Procedure.

Section 6. Separate Offenses.

A person shall be deemed guilty of a separate offense for each and every day or portion thereof during which any violation of any provision of this ordinance is committed, continued, or permitted.

Section 7. Civil actions.

(A) In addition to any other remedies provided in this ordinance, any violation of this ordinance may be enforced by civil action brought by the District.

(B) In any such action, the District may seek, and the court may grant, as appropriate, any or all of the following remedies:

(1) a temporary and/or permanent injunction;

(2) assessment of the violator for the costs of any investigation which led to the establishment of the violation and for the reasonable costs of preparing and bringing legal action under this ordinance;

(3) any other costs incurred in enforcing the provisions of this ordinance.

(C) Assessments under this subsection shall be paid to the District to be used exclusively for costs associated with implementing or enforcing the water conservation and regulatory provisions of this ordinance.

Section 8. Recovery of costs.

(A) The District General Manager or his or her designee shall serve an invoice for costs upon the property owner and/or occupant of any property, or any other responsible person who is subject to a notice of violation, a cease and desist order, or an administrative compliance order. An invoice for costs shall be immediately due and payable to the District. If any property owner or person in charge of day-to-day operations, customer, or responsible party, or any other person fails to either pay the invoice for costs or appeal successfully the invoice for costs in accordance with this ordinance, then the District may institute collection proceedings. The invoice for costs may include reasonable attorneys' fees.

(B) The District shall impose any other penalties or regulatory fees, as fixed from time to time by the Board of Directors, for a violation or enforcement of this ordinance.

(C) In order to recover the costs of the water conservation regulatory program set forth in this ordinance, the Board of Directors may, from time to time, fix and impose fees and charges. The District fees and charges may include, but are not limited to fee and charges for:

(1) any visits of an enforcement officer or other District staff for time incurred for meter reading, follow-up visits, or the installation or removal of a flow-restricting device;

(2) monitoring, inspection, and surveillance procedures pertaining to enforcement of this ordinance;

(3) enforcing compliance with any term or provision of this ordinance;

(4) reinitiating service at a property where service has been discontinued pursuant to this ordinance;

(5) processing any fees necessary to carry out the provisions of this ordinance.

Section 9. Notices.

(A) Any notice, notice of violation, cease and desist order, and administrative compliance order shall be served pursuant to the requirements of this ordinance and shall:

(1) state that the recipient has a right to appeal the matter as set forth in this ordinance;

(2) include the address of the affected property and be addressed to the property owner as shown on the most recently issued equalized assessment roll or as may otherwise appear in the current records of the District. If the order applies to a responsible party who is not the owner of the property or if the event is not related to a specific property, the notice may be sent to the last known address of the responsible party; and

(3) be deemed served ten (10) business days after posting on the property, if the property owner or occupant of the affected property cannot be located after the reasonable efforts of the District General Manager or his or her designee.

(B) Any notice of violation, cease and desist order, and administrative compliance order may be sent by regular mail. Service by regular mail is effective on the date of mailing.

Section 10. Appeals.

Any person subject to a notice of violation, cease and desist order, or administrative compliance order aggrieved by the issuance of an order may appeal from the issuance thereof to a hearing officer in accordance with the appeal procedures of the District of this Code except that any such appeal shall be filed within fifteen (15) days of the date of service of the notice of violation, cease and desist order, or administrative compliance order by the District General Manager or his or her designee upon the appealing party.

Section 11. Relief from compliance.

Consideration of written applications for relief from compliance ("relief") regarding the regulations and restrictions on water use set forth in this ordinance may be made by the District.

(A) Written applications for relief shall be accepted, and may be granted or denied, by the General Manager (the "approving authority"), at his or her sole discretion, or by his or her designee at his or her sole discretion. The application shall be in a form prescribed by the District and shall be accompanied by a non-refundable processing fee in an amount as determined by the Board of Directors for the purpose of defraying the costs incidental to the proceedings.

(B) The grounds for granting or conditionally granting relief are:

(1) due to unique circumstances, a specific requirement of this ordinance would result in undue hardship to a person using District water or to property upon which District water is used, that is disproportionate to the impacts to other District water users generally or to similar property or classes of water users; or

(2) failure to grant relief would adversely affect the health, sanitation, fire protection, or safety of the applicant or the public.

(C) The application for relief shall be accompanied, as appropriate, with photographs, maps, drawings, and other information substantiating the applicant's request, including a statement of the applicant.

(D) An application for relief shall be denied unless the approving authority finds, based on the information provided in the application, supporting documentation, or such other additional information as may be requested, and on water use information for the property as shown by the records of the District, all of the following:

(1) That the relief does not constitute a grant of special privilege inconsistent with the limitations upon other District customers.

(2) That because of special circumstances applicable to the property or its use, the strict application of this ordinance would have a disproportionate impact on: (a) the property or use that exceeds that customers generally; or (b) the applicant's health that exceeds customers generally.

(3) That the authorization of such relief will not be of substantial detriment to adjacent properties, and will not materially affect the ability of the District to effectuate the purposes of this ordinance and will not be detrimental to the public interest.

(4) That the condition or situation of: (a) the subject property or the intended use of the property for which the relief is sought is not common, recurrent, or general in nature; or (b) the applicant's health or safety is not common, recurrent, or general in nature.

(E) The denial or grant of a relief shall be acted upon within fifteen (15) days of the submittal of the complete application, including any photographs, maps, drawings, and other information substantiating the applicant's request and the statement of the applicant. The application may be approved, conditionally approved, or denied. The decision of the approving authority shall be prepared in writing, include terms and conditions, if any, and promptly sent to the applicant.

(F) The denial of a request for relief may be appealed in writing to the Secretary of the Board. An appeal shall be made in accordance with the following procedures:

(1) The person appealing the denial of the request for relief ("appellant") shall complete and submit in writing a form provided by the District for such purpose and shall state in such form the grounds for his or her appeal. All appeals shall be submitted to the Secretary of the Board within thirty (30) calendar days of the date of the notice of the denial of the request for relief.

(2) The General Manager, or his or her designee, shall review the appeal and any related information provided, and, if necessary, cause an investigation and report to be made concerning the request for relief. The General Manager, or his or her designee, shall have fifteen (15) calendar days from the submission of the appeal to render a decision on whether to grant the appeal and mail notice thereof to the appellant. If the General Manager, or his or her designee, grants the appeal and determines that the request for a relief shall be granted, then within fifteen (15) calendar days of such determination the General Manager, or his or her designee, shall give written notice thereof.

(3) The decision of the General Manager, or his or her designee, may be appealed by the appellant to the Board of Directors. Such appeal must be submitted in writing and filed with the District Secretary within fifteen (15) calendar days of the date of decision of the General Manager, or his or her designee. The Board of Directors shall conduct a hearing on such appeal at its next regularly scheduled Board of Directors meeting; provided, however, the Board of Directors shall have received the notice of appeal at least fifteen (15) calendar days prior to such meeting. If the appeal is not submitted within at least fifteen (15) calendar days prior to a regularly scheduled Board of Directors meeting, then the hearing shall be held at the following regularly scheduled Board of Directors meeting. A notice of the hearing shall be mailed to the appellant at least ten (10) calendar days before the date fixed for the hearing. The Board of Directors shall review the appeal de novo. The determination of the Board of Directors shall be conclusive and shall constitute a final order. Notice of the determination by the Board of Directors shall be mailed to the appellant within ten (10) calendar days of such determination and shall indicate whether the appeal has been granted in whole or in part and set forth the terms and conditions of the relief, if any, granted to the appellant. If the appeal is denied, the appellant shall comply with all terms and conditions of this ordinance and the applicable water conservation stage then in effect.

(4) Until the conclusion of the appeal process, all provisions and decisions under appeal shall remain in full force and effect until the conclusion of the appeal process.

Appendix E

RCSD-Water Shortage Contingency Plan

Appendix G-2

RCSD Water Shortage Contingency Plan (Excerpt from 2000 UWMP)

Table 13 ULFT Retrofit Program	
Year	# of ULFT Retrofits
2000	240e
2001	240e
2002	240e
2003	240e
2004	240e
2005	240e
2006	240e
2007	240e
2008	240e
2009	240e
2010	240e
e = estimate	
Estimated 3000 toilets @ 80% = 2400 toilets/10 years = 240 toilets/year	

METHODS TO EVALUATE EFFECTIVENESS: The District will calculate annual ULFT replacement program water savings to confirm the savings are within 10% of calculated retrofit-on-resale water savings, using the CUWCC MOU Exhibit 6 methodology and water savings estimates. Exhibit 6 has become an industry standard for evaluation of ULFT replacement programs.

CONSERVATION SAVINGS: Projected total annual water savings from toilet retrofits at full implementation has yet to be determined.

BUDGET: Proposed annual budget: $33,900.00, for materials, rebates, and administrative costs.

Water Shortage Contingency Plan

Preparation for Catastrophic Water Supply Interruption

Law

> 10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:
>
> 10632 (c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

Water Shortage Emergency Response

RCSD is discussing plans that contain procedures for the distribution of potable water in a disaster; these procedures will be consistent with guidelines prepared by the California State Office of Emergency Services.

RCSD is considering the feasibility of : (1) the purchase of water purification equipment; (2) purchase of standby generators and auxiliary pumps; and (3) construction of emergency water conveyance and supply storage facilities.

Specific water-critical customers (such as hospitals, nursing facilities, schools, and a few individual customers with medical conditions dependent on continuous water availability) have been identified. Likely potable water distribution sites have been identified. Standby procurement documents procedures are being considered for emergency bulk purchase of bottled water. All existing water supply storage, treatment, and distribution, and wastewater treatment facilities are currently inspected monthly.

The District recognizes the importance of the DMMs in reducing water demand and would continue to implement the programs. Also, the District would increase media attention to the water supply situation during a shortage and would step up public water education programs, encourage property owners to apply for a landscape and interior water use survey and continue to advertise the importance of customers to install ULF plumbing fixtures.

During declared shortages, or when a shortage declaration appears imminent, the RCSD General Manager will activate a District water shortage response team. The team includes: water, fire, sewer, street lighting, public affairs, parks and recreation. During a declared water shortage, the District will accept applications for new building permits but will not issue permits until the shortage declaration is rescinded. An appeal process will be established.

Supplemental Water Supplies

To offset future potential water shortages due to drought or disaster, the District is considering the following supplemental water supplies.

Desalination

RCSD has no reason for considering desalination of its source water at the present time.

Water Transfers

See the Transfer or Exchange Opportunities section.

Long Term Additional Water Supply Options

To meet future long-term water demand beyond 2020, the District will be considering drilling additional wells and importing water from outside sources.

The following table summarizes the actions the water agency will take during a water supply catastrophe.

Table 14. Preparation Actions for a Catastrophe	
Examples of Actions	Check if Discussed
Determine what constitutes a proclamation of a water shortage.	✓
Stretch existing water storage.	✓
Obtain additional water supplies.	✓
Develop alternative water supplies.	✓
Determine where the funding will come from.	✓
Contact and coordinate with other agencies.	✓
Create an Emergency Response Team/Coordinator.	✓
Create a catastrophe preparedness plan.	✓
Put employees/contractors on-call.	✓
Develop methods to communicate with the public.	✓
Develop methods to prepare for water quality interruptions.	✓

Water Shortage Contingency Ordinance/Resolution

Law

> 10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:
>
> 10632 (h) A draft water shortage contingency resolution or ordinance.

RCSD Water Shortage Response

As mentioned earlier, the District adopted a "No-Waste" Ordinance in 2000, and has developed a Resolution to Declare a Water Shortage Emergency. The District will adopt a policy to implement a Moratorium on New Connections during declared water shortages see Appendix C.

Stages of Action

Law

> 10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:
>
> 10632 (a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply and an outline of specific water supply conditions which are applicable to each stage.

Rationing Stages and Reduction Goals

The District has developed a four stage rationing plan (see Table 16) to invoke during declared water shortages. The rationing plan includes voluntary and mandatory rationing, depending on the causes, severity, and anticipated duration of the water supply shortage.

Table 15:
Water Rationing Stages and Reduction Goals

Shortage Condition	Stage	Customer Reduction Goal	Type of Rationing Program
Up to 15%	I	15%	Voluntary
15 – 25%	II	25%	Mandatory
25 - 35%	III	35%	Mandatory
35 - 50%	IV	50% or >	Mandatory

Priority by Use

Priorities for use of available potable water during shortages were based on input from RCSD's operations personnel, staff statistical analysts, citizen groups, and legal requirements set forth in the California Water Code, Sections 350-358. Water allocations are established for all customers according to the following ranking system:

- Minimum health and safety allocations for interior residential needs (includes single family, multi-family, hospitals and convalescent facilities, retirement and mobile home communities, and student housing, and fire fighting and public safety)
- Commercial, industrial, institutional/governmental operations (where water is used for manufacturing and for minimum health and safety allocations for employees and visitors), to maintain jobs and economic base of the community (not for landscape uses)
- Existing landscaping
- New customers, proposed projects without permits when shortage declared.

Note: It is not expected that any potable water supply reductions would result in recycled water shortages. However, this may change in the future, as more customers use recycled water.

Health and Safety Requirements

Based on commonly accepted estimates of interior residential water use in the United States, Table 17 indicates per capita health and safety water requirements. In Stage I shortages, customers may adjust either interior or outdoor water use (or both), in order to meet the voluntary water reduction goal.

However, under Stage II, Stage III and Stage IV mandatory rationing programs, the District has established a health and safety allotment of 68 gallons per capita-day (gpcd). This translates to 33 hundred cubic feet (HCF) per person per year. Based on previous studies, that amount of water insufficient for essential interior water with no habit or plumbing fixture change. If customers wish to change water use habits or plumbing fixtures, 68 gpcd is sufficient to provide for limited non-essential (i.e. outdoor) uses.

Stage IV mandatory rationing, which is likely to be declared only as the result of a prolonged water shortage or as a result of a disaster, would require that customers make changes in their interior water use habits (for instance, not flushing toilets unless "necessary" or taking less frequent showers).

Table 16.
Per Capita Health and Safety Water Quantity Calculations

	Non-Conserving Fixtures		Habit Changes 1		Conserving Fixtures 2	
Toilets	5 flushes x 5.5 gpf	27.5	3 flushes x 5.5 gpf	16.5	5 flushes x 1.6 gpf	8.0
Shower	5 min x 4.0 gpm	20.0	4 min x 3.0 gpm	12.0	5 min x 2.0	10.0
Washer	12.5 gpcd	12.5	11.5 gpcd	11.5	11.5 gpcd	11.5
Kitchen	4 gpcd	4.0	4 gpcd	4.0	4 gpcd	4.0
other	4 gpcd	4.0	4 gpcd	4.0	4 gpcd	4.0
Total (gpcd)		68.0		48.0		37.5
HCF per capita per year		33.0		23.0		18.0

1 Reduced shower use results from shorter and reduced flow. Reduced washer use results from fuller loads.
2 Fixtures include ULF 1.6 gpf toilets, 2.0 gpm showerheads and efficient clothes washers.

Water Shortage Stages and Triggering Mechanisms

As the water purveyor, RCSD must provide the minimum health and safety water needs of the community at all times. The water shortage response is designed to provide a minimum of 50% of normal supply during a severe or extended water shortage. The rationing program triggering levels shown below were established to ensure that this goal is met.

Rationing stages may be triggered by a shortage in one water source or a combination of sources. Although an actual shortage may occur at any time during the year, a shortage (if one occurs) is usually forecasted by the AVEK on or about April 1 each year. If it appears that it may be a dry year, the District advises all of its customers in April or May so that they can minimize potential financial impacts.

The District's potable water sources are groundwater, and imported surface water. Rationing stages may be triggered by a supply shortage or by contamination in one source or a combination of sources. Because shortages overlap Stages, triggers automatically implement the more restrictive Stage. Specific criteria for triggering the City's rationing stages are shown in Table 17.

Table 17
Water Shortage Stages and Triggering Mechanisms

Percent Reduction of Supply	Stage I Up to 15%	Stage II 15 - 25%	Stage III 25 - 35%	Stage IV 35 - 50% >
		Water Supply Condition		
Current Supply	Total supply is 85 – 90% of "normal." And Below "normal" year is declared. Or	Total supply is 75 – 85% of "normal." Or Below "normal" year is declared Or	Total supply is 65 – 75% of "normal." Or Fourth consecutive below "normal" year is declared. Or	Total supply is less than 65% of "normal." Or Fifth consecutive below "normal" year is declared. Or
Future Supply	Projected supply insufficient to provide 80% of "normal" deliveries for the next two years. Or	Projected supply insufficient to provide 75% of "normal" deliveries for the next two years. Or	Projected supply insufficient to provide 65% of "normal" deliveries for the next two years. Or	Projected supply insufficient to provide 50% of "normal" deliveries for the next two years. Or
Groundwater	No excess groundwater pumping undertaken. Or	First year of excess groundwater pumping taken, must be "replaced" within four years. Or	Second year of excess groundwater pumping taken, must be "replaced" within four years. Or	No excess groundwater pumping available. Or Reduced groundwater pumping due to replenishment of previously pumped groundwater. Or
Water Quality	Contamination of 10% of water supply (exceeds primary drinking water standards)	Contamination of 20% of water supply (exceeds primary drinking water standards)	Contamination of 30% of water supply (exceeds primary drinking water standards)	Or
Disaster Loss				Disaster Loss

Water Allotment Methods

The District plans to establish the following allocation method for each customer type. See Appendix C for sample water shortage rationing allocation method.

Single Family	Hybrid of Per-capita and Percentage Reduction
Multifamily	Hybrid of Per-capita and Percentage Reduction
Commercial	Percentage Reduction
Industrial	Percentage Reduction
Gvt/Institutional	Percentage Reduction
Agricultural-Permanent	Percentage Reduction - vary by efficiency
Agricultural-Annual	Percentage Reduction - vary by efficiency
Recreational	Percentage Reduction - vary by efficiency
New Customers	Per-capita (no allocation for new landscaping during a declared water shortage.)

Based on current and projected customer demand, Appendix C indicates the water allocated to each customer type by priority and rationing stage during a declared water shortage.

Individual customer allotments are based on a five-year period. This gives the District a more accurate view of the usual water needs of each customer and provides additional flexibility in determining allotments and reviewing appeals. However, no allotment may be greater than the amount used in the most recent year of the five-year base period.

The General Manager's staff shall classify each customer and calculate each customer's allotment according to the Sample Water Rationing Allocation Method. The allotment shall reflect seasonal patterns. Each customer shall be notified of their classification and allotment by mail before the effective date of the Water Shortage Emergency. New customers will be notified at the time the application for service is made. In a disaster, prior notice of allotment may not be possible; notice will be provided by other means. Any customer may appeal the General Manager's classification on the basis of use or the allotment on the basis of incorrect calculation.

Prohibitions, Consumption Reduction Methods and Penalties

Law

> 10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:
>
> 10632 (d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.
> 10632 (e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.
> 10632 (f) Penalties or charges for excessive use, where applicable.

Mandatory Prohibitions on Water Wasting

The RCSD "No Waste" Ordinance (see Appendix C) includes prohibitions on various wasteful water uses such as lawn watering during mid-day hours, washing sidewalks and driveways with potable water, and allowing plumbing leaks to go uncorrected more than 24 hours after customer notification.

The following table is a list of consumption reduction methods that could be implemented at the various water shortage stages. The BOD has not decided which, if any of these measures shall be incorporated into the Ordinance at a future date.

Table 18
Consumption Reduction Methods

Examples of Consumption Reduction Methods	Stage When Method Takes Effect
Demand reduction program	All stages
Reduce pressure in water lines	
Flow restriction	IV
Restrict building permits	II, III, IV
Restrict for only priority uses	
Use prohibitions	All stages
Water shortage pricing	All stages
Per capita allotment by customer type	IV
Plumbing fixture replacement	
Voluntary rationing	I
Mandatory rationing	II, III, IV
Incentives to reduce water consumption	
Education Program	All Stages
Percentage reduction by customer type	II, III, IV
Other	
Other	

See Appendix C, the "No Waste" Ordinance and Moratorium on New Connections - which details the reduction methods - regarding Table 18.

Excessive Use Penalties

The BOD has decided upon the penalties as stated in the "No Waste" Ordinance. See Appendix C.

Revenue and Expenditure Impacts and Measures to Overcome Impacts

Law

> 10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:
>
> 10632 (g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier...

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

RCSD has begun the process of evaluating rate changes based on projected wastewater handling expenses, water equipment expenses and projected expenses for additional purchased surface water. See Appendix D for the District's efforts to establish an Emergency Fund and a Rate Stabilization Fund.

Reduction Measuring Mechanism

Law

> 10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:
>
> 10632 (i) A mechanism for determining actual reductions in water use pursuant to the
> urban water shortage contingency analysis.

Mechanism to Determine Reductions in Water Use

Under normal water supply conditions, potable water production figures are recorded daily. Totals are reported weekly to the Water Treatment Facility Supervisor. Totals are reported monthly to the General Manager and incorporated into the water supply report.

During a Stage I or Stage II water shortage, daily production figures are reported to the General Manager. The General Manager compares the weekly production to the target weekly production to verify that the reduction goal is being met. Weekly reports are forwarded to the Chairman of the Board of Directors (BOD) and the Water Shortage Response Team. Monthly reports are sent to the BOD as well. If reduction goals are not met, the Manager will notify the BOD so that corrective action can be taken.

During a Stage III or Stage IV water shortage, the procedure listed above will be followed, with the addition of a daily production report to the General Manager.

During emergency shortages, production figures are reported to the Field Supervisor hourly and to the General Manager and the Water Shortage Response Team daily. Daily reports will also be provided to the BOD and the Kern County Office of Emergency Services.