



# 2015 URBAN WATER MANAGEMENT PLAN

CRESCENTA VALLEY WATER DISTRICT



June 2016  
Final Copy



**2015**

# **URBAN WATER MANAGEMENT PLAN**



## **CRESCENTA VALLEY WATER DISTRICT**

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**June 2016 Final Copy**

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## ACRONYMS

|       |                                                                         |
|-------|-------------------------------------------------------------------------|
| Act   | Urban Water Management Planning Act                                     |
| AF    | acre-feet                                                               |
| AFY   | acre-feet per year                                                      |
| Basin | Verdugo Groundwater Basin                                               |
| BDCP  | Bay Delta Conservation Plan                                             |
| BMP   | Best Management Practice                                                |
| Board | Metropolitan Water District of Southern California's Board of Directors |
| cfs   | cubic feet per second                                                   |
| CII   | Commercial/Industrial/Institutional                                     |
| CIMIS | California Irrigation Management Information System                     |
| CRA   | Colorado River Aqueduct                                                 |
| CUWCC | California Urban Water Conservation Council                             |
| CVP   | Central Valley Project                                                  |
| CVWD  | Crescenta Valley Water District                                         |
| CWC   | California Water Code                                                   |
| DDW   | State Water Resources Control Board Division of Drinking Water          |
| DMM   | Demand Management Measure                                               |
| DWR   | Department of Water Resources                                           |
| EIR   | Environmental Impact Report                                             |
| EIS   | Environmental Impact Statement                                          |
| ETo   | Evapotranspiration                                                      |
| FMWD  | Foothill Municipal Water District                                       |
| GPCD  | gallons per capita per day                                              |
| gpf   | gallons per flush                                                       |
| GW    | Groundwater                                                             |
| GWP   | Glendale Water and Power                                                |
| HECW  | High Efficiency Clothes Washer                                          |
| HET   | High Efficiency Toilet                                                  |
| HR    | Hydrologic Region                                                       |
| IRP   | Integrated Resource Plan                                                |
| IWA   | International Water Association                                         |
| JWPCP | Joint Water Pollution Control Plant                                     |
| LACSD | Sanitation Districts of Los Angeles County                              |
| LADWP | Los Angeles Department of Water and Power                               |

|        |                                                    |
|--------|----------------------------------------------------|
| LAGWRP | Los Angeles/Glendale Water Reclamation Plant       |
| LCID   | La Cañada Irrigation District                      |
| LRWSP  | Local, Reliable Water Supply Program               |
| MAF    | million acre-feet                                  |
| MCL    | Maximum Contaminant Level                          |
| MGD    | million gallons per day                            |
| MOU    | Memorandum of Understanding                        |
| MTBE   | Methyl tertiary butyl ether                        |
| MWD    | Metropolitan Water District of Southern California |
| MWELO  | Model Water Efficient Landscape Ordinance          |
| NDMA   | N-nitrosodimethylamine                             |
| PCE    | Tetrachloroethylene                                |
| PPCPs  | Pharmaceuticals and Personal Care Products         |
| PHETs  | Premium HETs                                       |
| QSA    | Quantification Settlement Agreement                |
| RHNA   | Regional Housing Needs Assessment                  |
| SBx7-7 | Senate Bill x7-7                                   |
| SCADA  | Supervisory Control and Data Acquisition           |
| SCAG   | Southern California Association of Governments     |
| SDP    | Seawater Desalination Program                      |
| SMSS   | Soil Moisture Sensor System                        |
| SWP    | State Water Project                                |
| TDS    | Total Dissolved Solid                              |
| ULARA  | Upper Los Angeles River Area                       |
| ULFT   | Ultra-Low-Flow Toilet                              |
| UWMP   | Urban Water Management Plan                        |
| VOC    | Volatile Organic Compound                          |
| WARN   | Water Agency Response Network                      |
| WBIC   | Weather-Base Irrigation Controller                 |
| WRP    | Water Reclamation Plant                            |
| WSAP   | Water Supply Allocation Plan                       |
| WSDM   | Water Surplus and Drought Management Plan          |

# EXECUTIVE SUMMARY

## Introduction

This report serves as the 2015 update of the Crescenta Valley Water District's (CVWD) Urban Water Management Plan (UWMP). This UWMP has been prepared consistent with the requirements under Water Code Sections 10610 through 10656 of the Urban Water Management Planning Act (Act). The Act requires that "every urban water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to prepare and adopt, in accordance with prescribed requirements, an urban water management plan." These plans must be filed with the California Department of Water Resources (DWR) every five years describing and evaluating reasonable and practical efficient water uses, reclamation, and conservation activities. 2015 UWMP updates are to be adopted by July 1, 2016.

The Act has been amended on several occasions since its initial passage in 1983. New requirements of the Act due to SBx7-7 state that per capita water use within an urban water supplier's service area must decrease by 20 percent by the year 2020 in order to receive grants or loans administered by DWR or other state agencies. The legislation sets an overall goal of reducing per capita urban water use by 20 percent by December 31, 2020. The State shall make incremental progress towards this goal by reducing per capita water use by at least 10 percent by December 31, 2015. Each urban retail water supplier shall develop water use targets by July 1, 2016. Effective beginning of 2016, urban retail water suppliers who do not meet the water conservation requirements established by this bill are not eligible for State water grants or loans.

## Service Area and Facilities

CVWD provides water to a population of approximately 32,385 throughout its service area. CVWD receives its water from two main sources, the Verdugo Groundwater Basin (Basin), and imported water from Metropolitan Water District of Southern California (MWD) through the Foothill Municipal Water District (FMWD). CVWD provides potable drinking water to its customers via 12 local groundwater wells, and imported water supply through three MWD connections and an emergency inter-tie system with the City of Glendale.

## Water Demand

The total water demand for the 32,385 people served by CVWD is over 3,600 acre-feet of potable water for the 2015 calendar year.

CVWD has selected to comply with **Option 3**, 95 percent of the State Hydrologic Region Target, of the SBx7-7 compliance options; however, the minimum required target applies and CVWD's

2015 interim water use target is 151 GPCD, and the 2020 final water-use target is **142 GPCD**. A description of the compliance options is discussed in **Section 2.4**.

In 2015, CVWD has a per capita water use of 100.5 GPCD. CVWD is well below their planned 2015 interim target and its 2020 final water use target.

### **Water Sources and Supply Reliability**

On average, 60 percent of CVWD's source water is local ground water supply in the Basin. The majority of CVWD's ground water wells are located along the Verdugo Wash, south of Honolulu Avenue. The remaining 40 percent of CVWD's source water is imported water supplied by FMWD, which is a member agency to MWD. The sources of imported water supplies include the Colorado River and the State Water Project. MWD's 2015 Integrated Water Resources Plan update describes the core water resource strategy, which will be used to meet full-service demands at the retail level under all foreseeable hydrologic conditions from 2020 through 2040.

It is required that every urban water supplier assess the reliability to provide water service to its customers under normal, dry, and multiple dry water years. MWD's 2015 UWMP finds that MWD is able to meet full service demands of its member agencies with existing supplies from 2020 through 2040 during normal years, single dry year, and multiple dry years. CVWD is therefore capable of meeting the water demands of its customers in normal, single dry, and multiple dry years between 2020 and 2040, as illustrated in **Table 3-11** to **Table 3-17**.

### **Future Water Supply Projects**

CVWD is currently in the design phase of a wellhead treatment facility for its Well No. 2. The installation of the AROnite biological nitrate removal treatment system will allow CVWD to reactivate Well No. 2, thereby aiding in groundwater recovery. When completed, this treatment facility will increase CVWD's ability to pump its adjudicated rights within the Verdugo Basin, utilize a local water source, reduce CVWD's dependence on imported water from MWD purchased through FMWD, and reduce nitrates levels in the groundwater pumped from the Basin.

CVWD is working towards the development of the Crescenta Valley County Park Multiuse Project. This Project will allow CVWD to increase groundwater storage in the Basin by the installation and maintenance of underground infiltration galleries underneath portions of the existing park. This will be accomplished by utilizing the existing Los Angeles County flood control channels, Verdugo Wash, and surface flow within the Crescenta Valley to divert storm water during the rainy season into underground infiltration basins within the recreational areas. The project will potentially increase the local ground water supply by an annual average of 340 acre-feet per year, thus enhancing CVWD's groundwater resource and reducing dependence on imported supplies. Also, through the process of capture, treatment, and reuse



of storm water and dry weather flow, the project could potentially reduce the pollutant load from contaminating the Los Angeles River.

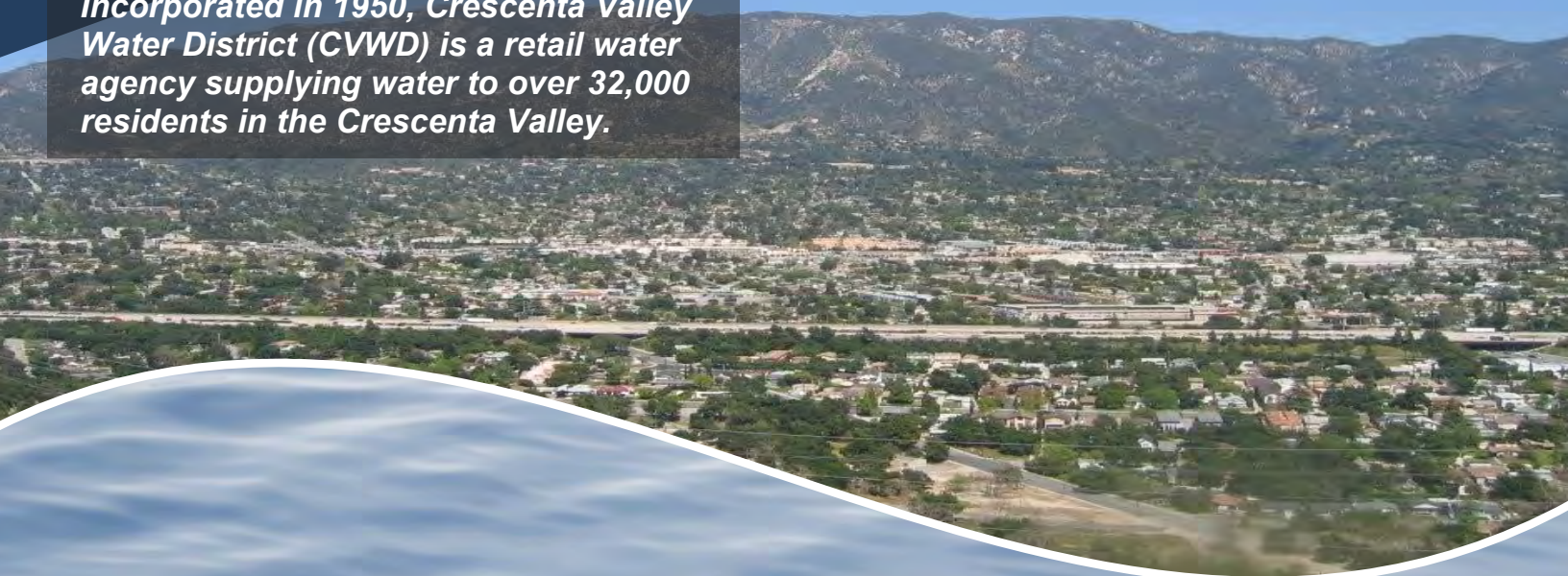
CVWD is nearing completion of a new emergency interconnection with the City of Los Angeles Department of Water and Power (LADWP) by the end of 2016. CVWD will be able to receive up to 2.2 cubic feet per second or 1.9 million gallons per day from LADWP through the interconnection and will have the ability to provide an emergency water supply to FMWD and its sub-agencies.

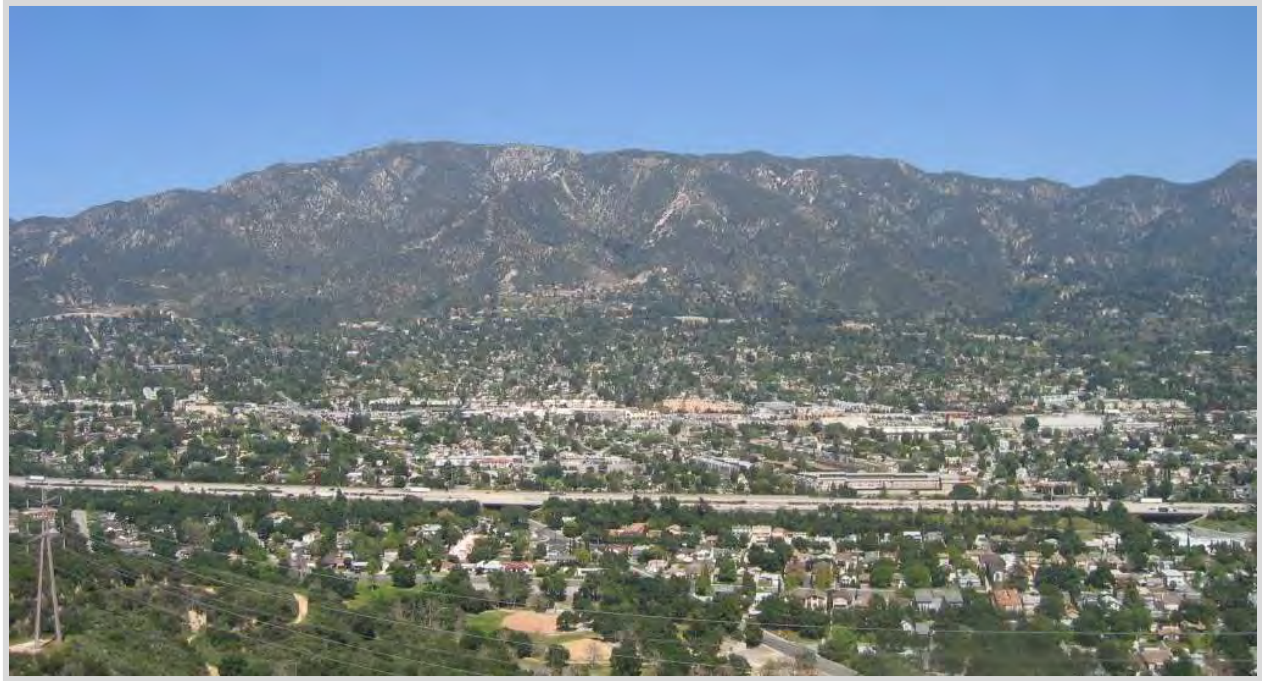
As funding permits, CVWD plans to rehabilitate its older groundwater wells with new technologies over the 10-year period starting in 2015. The existing wells are between 55 to 80 years old and have reached the end of their useful life. CVWD's current program is to perform at least two well rehabilitations a year, which include cleaning the well casing with chemical treatment and installation of a liner to extend the life of the well.

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# SECTION 1: INTRODUCTION

*Incorporated in 1950, Crescenta Valley Water District (CVWD) is a retail water agency supplying water to over 32,000 residents in the Crescenta Valley.*





## SECTION 1: INTRODUCTION

### 1.1 URBAN WATER MANAGEMENT PLAN PURPOSE & SUMMARY

This is the 2015 Urban Water Management Plan (UWMP) for Crescenta Valley Water District (CVWD). This plan has been prepared in compliance with the Urban Water Management Planning Act (Act), which has been codified as California Water Code (CWC) sections 10610 through 10657.

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

The Act requires that “every urban water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet (AF) of water annually, to prepare and adopt, in accordance with prescribed requirements, an urban water management plan.” These plans must be filed with the California Department of Water Resources (DWR) every five years describing and evaluating reasonable and practical efficient water uses, reclamation, and conservation activities. (*See general Water Code § 10631*).



Figure 1-1: UWMPs Comply with State Water Code

## 1.2 PAST UPDATES TO THE UWMP ACT

The Act has been amended on several occasions since its initial passage in 1983. Of all the amendments, the most significant came in 2009 as a result of the requirements of Senate Bill 7 / Seventh Extraordinary Session. This is better known as the Water Conservation Act of 2009 (SBx7-7). The requirements of this bill state that per capita water use within an urban water supplier's service area must decrease by 20 percent by the year 2020 (20x2020) in order to receive grants or loans administered by DWR or other State agencies. The legislation sets an overall goal of reducing per capita urban water use by 20 percent by December 31, 2020. The State shall make incremental progress towards this goal by reducing per capita water use by at least 10 percent by December 31, 2015. Each urban retail water supplier shall develop water use targets by July 1, 2016. Effective at the beginning of 2016, urban retail water suppliers who do not meet the water conservation

requirements established by this bill are not eligible for State water grants or loans. SBx7-7 substantially expanded the role of the UWMPs by requiring all urban retail water suppliers to develop baseline daily per capita water use data, urban water use targets, and other technical information, and to report all of the information in their 2010 UWMPs.

### 1.3 UPDATES TO THE UWMP ACT FOR 2015 UWMPs

There have not been any significant changes affecting the 2015 UWMPs on the level of SBx7-7; however, there have been several minor to moderate updates to the UWMP Act affecting the 2015 UWMPs as follows:

- **Demand Management Measures (DMMs):** Updates to the DMMs (CWC § 10631 (f) (1) & (2) AB 2067, 2014)
- **Submittal Date:** Submittal Date Has Been Extended (CWC § 10621 (d) (1) & (2) AB 2067, 2014)
- **Electronic Submittal:** New Submittal Format to DWR (CWC § 10644 (a) (2) SB 1420, 2014)
- **Standardized Forms:** Must Use Standardized Forms for DWR Submittal (CWC § 10644 (a) (2) SB 1420, 2014)
- **Water Loss:** New Submittal Format to DWR (CWC § 10631 (e) (1) (J) and (e) (3) (A) and (B) SB 1420, 2014)
- **Estimating Future Water Savings:** Water Use Projections Should Assume Water Savings Per Appendix K (CWC § 10644 (e) (4) SB 1420, 2014)
- **Voluntary Reporting of Energy Intensity:** Provide details of Energy to Produce Water (CWC § 10631.2 (a) (b) SB 1036, 2014)
- **Defining Water Features:** Provide details of Energy to Produce Water (CWC § 10632 (b) SB 2049, 2010)

Of the above, the changes to the DMMs are the most significant update affecting the 2015 UWMP. AB 2067 and SB 1420, which amended the DMMs, mark a continued focus on water use reduction strategies. AB 2067 and SB 1420 not only change the amount of DMMs required (consolidated from 14 DMMs to 7 DMMs), but also changed the reporting requirements on the DMMs.

In addition to the above, there are several optional or voluntary categorical and data reporting changes to the UWMP Act (some of which applied to the 2010 UWMPs). These include optional categories of Climate Change, Energy Intensity, Passive Savings, as well as various optional data reporting.

## 1.4 2015 UWMP SCOPE & FORMAT

### 1.4.1 SCOPE & TOPICS OF DISCUSSION

This UWMP provides DWR with information on the present and future water resources and demands and provides an assessment of the water resource needs of CVWD. Specifically, this document will provide water supply planning for a 25-year planning period in 5-year increments. This plan will identify water supplies for existing and future demands, quantify water demands during normal year, single-dry year, and multiple-dry years, and identify supply reliability under the three hydrologic conditions. CVWD's 2015 UWMP update revises the 2010 UWMP. This document has been prepared in compliance with the requirements of the Act as amended in 2009, and includes the following topics:

- Water Service Area and Facilities
- Water Sources and Supplies
- Water Use by Customer Type
- Demand Management Measures
- Water Supply Reliability
- Planned Water Supply Projects and Programs
- Water Shortage Contingency Plan
- Recycled Water

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*With the passage of SBx7-7 in 2009, Demand Management Measures (DMMs) have become a critical component of an agency's UWMP.*

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The topics listed above are consistent with the 2010 UWMP, and no new stand-alone topics have been added to this 2015 UWMP; however, narratives related to the above topics have been revised to reflect current (2015) conditions. In addition, visual format changes, expansions of existing text, and addition of new sub-categories and/or new data, have been added to enhance this 2015 UWMP and provide more benefit for CVWD.

#### 1.4.2 SBX7-7 CONSERVATION UPDATES

As required in the 2010 UWMP, each urban retail water supplier must include in its 2015 UWMP the following information from its target-setting process:

- Baseline daily per capita water use
- 2020 Urban water use target
- 2015 Interim water use target
- Compliance method being used along with calculation method and support data
- Updates on interim (2015) target

Since the above information was already contained in the 2010 UWMP, an agency has the option of re-stating this information if it is the same from the 2010 UWMP or revising it if different from the 2010 UWMP.



Figure 1-2: SBx7-7 Aims to Protect Water Sources

Wholesale water suppliers, including CVWD's imported water supplier, Foothill Municipal Water District (FMWD), are required to include an assessment of present and proposed future measures, programs, and policies which would help CVWD achieve the 20x2020 goal.

### 1.4.3 FORMAT OF THE REPORT

The sections in this Plan correspond to the UWMP Act (Article 2, Contents of Plans, Sections 10631, 10632, and 10633). The sequence used for the required information, however, differs slightly in order to present information in a manner reflecting the unique characteristics of CVWD's water utility. The Sections are as follows:

- **SECTION 1: INTRODUCTION**

This section describes the UWMP Act, CVWD's planning and coordination process, the history of CVWD's water supply system, and a description of its service area.

- **SECTION 2: WATER DEMANDS**

This section describes past, current, and projected future water demands within CVWD's service area, as well as factors which affect demand, including climate and population demographics. This chapter also discusses the requirements of the SBx7-7.

- **SECTION 3: WATER SOURCES & SUPPLIES**

This section describes CVWD's water supplies, including imported water from FMWD, and how CVWD manages those water supplies. This section also discusses the quality of CVWD's water sources, effects on management strategies, and supply reliability.

- **SECTION 4: CONSERVATION MEASURES**

This section addresses CVWD's compliance with the current Best Management Practices (BMPs), otherwise known as Demand Management Measures (DMMs).

- **SECTION 5: CONTINGENCY PLANNING**

This section describes CVWD's efforts which will be utilized in the event of a water supply interruption, such as a drought or catastrophe. CVWD's Board adopted Water Conservation Program (Adopted in January 2009 and updated in April of 2015), which encourages conservation and recommends minimum restrictions be placed on water use, is discussed. In addition, the Water Surplus and Drought Management Plan (WSDM) of Metropolitan Water District of Southern California (MWD) is also described.

- **SECTION 6: RECYCLED WATER**

This chapter describes past, current, and projected recycled water use, along with a description of wastewater collection and treatment facilities.

- **SECTION 7: FUTURE WATER SUPPLY PROJECTS & PROGRAMS**

This section discusses planned and potential future water supplies and programs, including new supply sources, transfers and exchanges, and the feasibility of such supplies and programs.

- **SECTION 8: UWMP ADOPTION PROCESS**

This section describes CVWD's planning and coordination process for the 2015 UWMP, including public and outside agency participation, and CVWD Board adoption.

- **APPENDICES**

The appendices contain references, supplemental information, and specific documents relating to CVWD which were used to prepare this 2015 UWMP.

## **1.5 AGENCY OVERVIEW**

The Crescenta Valley Water District was formed as the Crescenta Valley County Water District on December 14, 1950 by the vote of local residents. Organized under the provisions of Division 12 of the CWC, CVWD operates as a political subdivision of the State. The term "County" was officially deleted from CVWD's name in 1996.

In the early 1950's, the newly-formed CVWD purchased the assets and consolidated the infrastructure of several small private water companies then in existence. By 1953, with rapid growth in the Crescenta Valley and surrounding foothill communities, it became apparent that the local groundwater supply was not going to be sufficient to meet the increasing demand. Residents from La Crescenta to Altadena voted to form the Foothill Municipal Water District (FMWD) to purchase and distribute imported water from the Metropolitan Water District of Southern California (MWD). By 1955, CVWD was augmenting its local well water with MWD water from the Colorado River. In the 1960's, MWD increased its supply by also contracting for Northern California water with the completion of the State Water Project.

CVWD has a 5-member Board of Directors who participate in the management of CVWD. The current members of the Board of Directors are:

- **Kerry Erickson – President**  
*Chair of Finance Committee*
- **James Bodnar – Vice President**  
*Chair of Engineering Committee*
- **Mike Claessens – Board Director**  
*Chair of Emergency Planning Committee*
- **Ken Putnam – Board Director**  
*Chair of Community Relations and Water Conservation Committee*
- **Judy Tejeda – Board Director**  
*Chair of Employee Relations Committee*

CVWD is dedicated to providing high quality water and wastewater services in partnership with the family of Southern California water agencies. CVWD values:

- |                                       |                             |
|---------------------------------------|-----------------------------|
| ➤ Excellent Customer Service          | ➤ Community Involvement     |
| ➤ Fiscal Responsibility               | ➤ Water Conservation        |
| ➤ Dedicated Employees                 | ➤ Technology and Innovation |
| ➤ Reliable Water and Sewer Facilities | ➤ Environmental Sensitivity |

## 1.6 SERVICE AREA AND FACILITIES

### 1.6.1 SERVICE AREA DESCRIPTION

CVWD's service area is located in the Crescenta Valley area of Los Angeles County in the foothills of the San Gabriel Mountains, between the San Fernando and San Gabriel valleys. CVWD provides water distribution and sewage collection within its four square mile service area boundaries to the unincorporated communities of La Crescenta, Montrose, and Verdugo City as well as a small portion of the City of Glendale and City of La Cañada-Flintridge. The service area ranges in elevation from approximately 1,200 feet to almost 3,000 feet above sea level due to its location next to the San Gabriel Mountains and sloping terrain. **Figure 1-3** on page 1-10 shows a map of CVWD's service boundaries.

CVWD currently provides water to over 8,000 accounts representing a population of 32,385. Customer growth is steady although the Crescenta Valley area is nearly built-out. Residential growth is occurring through increased housing density in the multiple-unit zoned areas (primarily Montrose) as well as limited in-fill housing developments on random parcels in La Crescenta.

### **1.6.2 CVWD'S WATER FACILITIES**

CVWD's water sources are 12 local groundwater wells, with an average depth of 200 feet, one mountain tunnel (gravity fed), and imported water supply through three separate FMWD connections and emergency inter-tie system with the City of Glendale. On a long term basis, approximately 60 percent of CVWD's annual water demand is met by the local groundwater supply and 40 percent by imported water. This ratio does change depending on the water supply conditions, weather, and demand. CVWD operates 11 separate water pressure zones served by 14 pumping stations and 17 storage reservoirs totaling 17.5 million gallons.

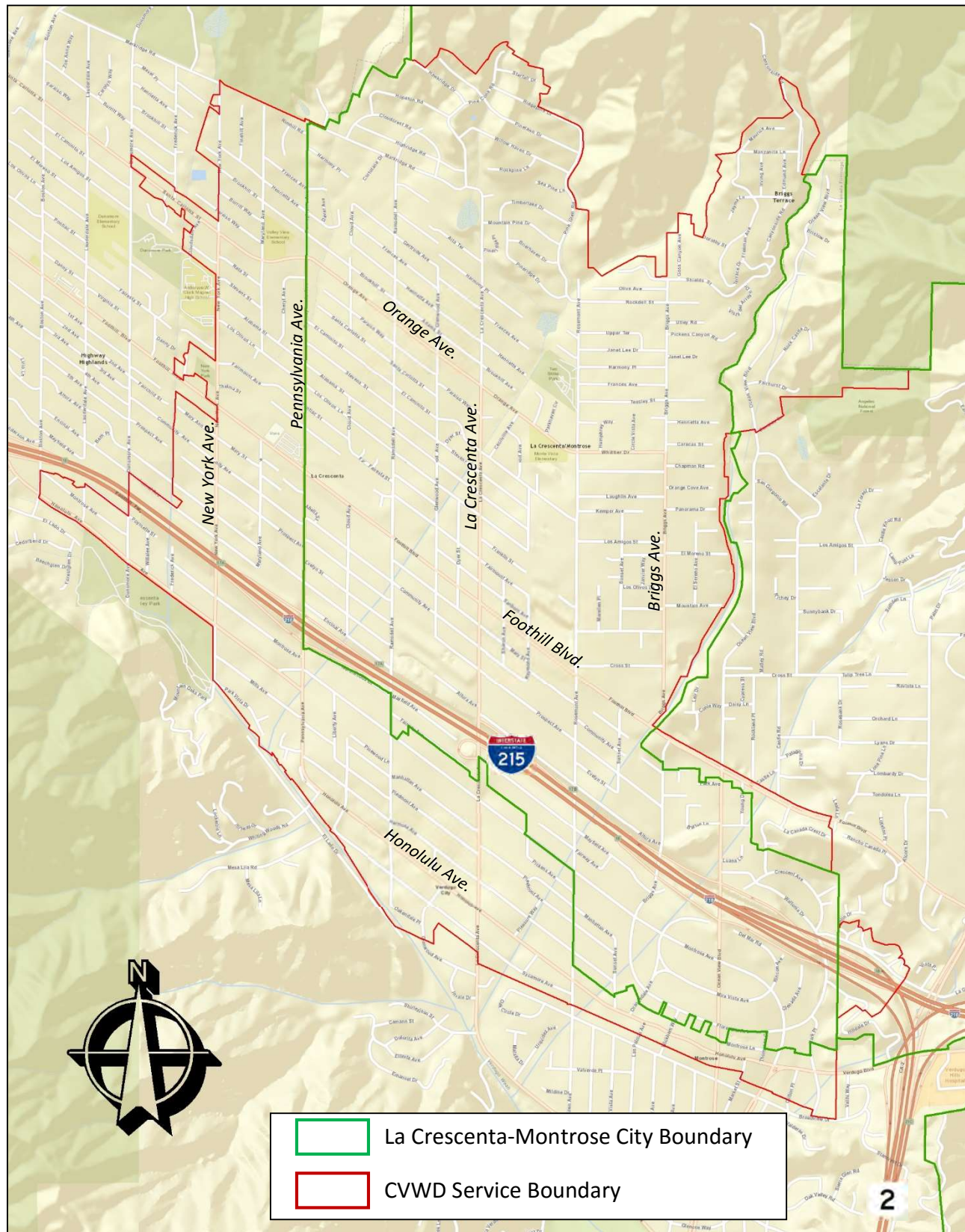


Figure 1-3: CVWD's Service Boundaries

# SECTION 2: WATER DEMANDS



*Approximately 89 percent of CVWD's water demand is residential; only 9 percent of the demand is attributed to the Commercial/Industrial/Institutional category.*



## SECTION 2: WATER DEMAND

### 2.1 OVERVIEW

Water use within CVWD's service area includes residential potable use, landscape irrigation use, commercial and institutional uses, and of course water losses. Water use is variable and depends on a number of factors which include seasonal climate changes, demographic shifts, changes in land use or redevelopment, and of course legislation. Since CVWD's service area is largely residential, changes in residential plumbing fixtures and customer usage habits can significantly affect water usage. CVWD is able to meet its demands with a blend of groundwater and imported water.

This section explores the water usage trends within CVWD's service area and quantifies total usage per customer class. In addition, the provisions of SBx7-7 are explored in detail.

### 2.2 FACTORS AFFECTING DEMAND

Water consumption is influenced by many factors including climate characteristics of the hydrologic region, demographics (including social and economic demographics),

land use characteristics, and economics. The key factors affecting water demand in CVWD's service area are discussed in the following sub-sections.

### 2.2.1 CLIMATE CHARACTERISTICS

CVWD has a Mediterranean climate, with a "foothill" characteristic. Summers are warm to hot, and dry while winters are cool and have an annual historical average precipitation of approximately 22 inches, which has decreased to 16.0 inches over the last 10-years and 11.6 inches over the last 5-years. Another feature of this foothill Mediterranean climate is the frequency of high-velocity, low-humidity, northeasterly winds in the fall and early winter. Therefore, CVWD is highly prone to wildfire danger during these periods. Adequate storage of reservoir water supply is deemed critical by the local fire jurisdictions. **Table 2-1** lists the historical monthly average evapotranspiration (ET<sub>o</sub>), rainfall, and temperatures from 1922 to 2014.

**Table 2-1: Climate Characteristics**

| Month         | Standard Monthly Average<br>ET <sub>o</sub> (inches) [1] | Annual Rainfall<br>(inches) [2] | Average Temperature<br>(°F) [2] |
|---------------|----------------------------------------------------------|---------------------------------|---------------------------------|
| Jan           | 2.26                                                     | 4.60                            | 53.3                            |
| Feb           | 2.57                                                     | 4.79                            | 54.2                            |
| Mar           | 4.03                                                     | 3.54                            | 55.7                            |
| Apr           | 4.72                                                     | 1.80                            | 56.4                            |
| May           | 4.88                                                     | 0.43                            | 62.6                            |
| Jun           | 5.73                                                     | 0.17                            | 66.0                            |
| Jul           | 6.19                                                     | 0.03                            | 71.8                            |
| Aug           | 6.28                                                     | 0.10                            | 73.0                            |
| Sep           | 4.96                                                     | 0.42                            | 71.5                            |
| Oct           | 3.57                                                     | 0.84                            | 64.4                            |
| Nov           | 2.76                                                     | 2.01                            | 60.6                            |
| Dec           | 2.11                                                     | 3.26                            | 55.2                            |
| <b>Annual</b> | <b>50.04</b>                                             | <b>21.99</b>                    | <b>62.0</b>                     |

[1] Average ET<sub>o</sub> is an average value taken from station #133 (Glendale) and station #159 (Monrovia) provided by CIMIS.

[2] Data provided by Western Regional Climate Center from station 040144 (Altadena). Average from 1922-2014.

The sources of CVWD's imported water supplies, the State Water Project (SWP) and Colorado River Aqueduct (CRA), are influenced by weather conditions in Northern California and along the Colorado River Basin region. Both regions have recently been

suffering from multi-year drought conditions and record low rainfalls which directly impact demands and supplies to CVWD and Southern California.



**Figure 2-1: Snowfall on the San Gabriel Mountains**

Climate fluctuations not only can increase or decrease demand, but can also directly affect CVWD's ratio of groundwater to imported water, since reduced precipitation and snowfall means less groundwater replenishment. When groundwater supplies are reduced, CVWD purchases more imported water.

## 2.2.2 DEMOGRAPHICS

The population within CVWD's service area is expected to increase by 12.5 percent in the next 25 years, or 0.5 percent annually. **Table 2-2** shows the current and projected population for the next 25 years.

**Table 2-2: Population – Current and Projected**

| Year                    | 2015   | 2020   | 2025   | 2030   | 2035   | 2040   |
|-------------------------|--------|--------|--------|--------|--------|--------|
| Service Area Population | 32,385 | 33,203 | 34,041 | 34,901 | 35,782 | 36,686 |

The service area populations for CVWD was determined using the DWR Population Tool ("WUE"), which uses the service boundaries, US Census data, and number of residential service connections. The tool calculates population by using past US Census data and service connections to obtain persons per connection. Using the persons per connection and current count on service connections would provide the current service population. Future service population can be projected based on the average growth factor.

There is no industry in CVWD's service area and there are less than 5 percent commercial or institutional accounts. CVWD does not anticipate any significant increases in employment for the area based on the land availability and the zoning. The 0.5 percent annual average increase was obtained from the averages of percent population change from 2000 to 2015 provided by the US Census through the DWR Population Tool. Densification will occur as single-family lots are converted to multi-family dwellings where it is allowed by zoning classification and the governing agency.

### 2.2.3 LAND USE

Land use in the service area is primarily residential with two commercial/business corridors along Foothill Boulevard and Honolulu Avenue. Of the residential service, some of the area south of Foothill Boulevard continues to be converted over time to multi-family units as zoning permits. There are no industrial or agricultural water users within CVWD, and institutional users are limited to schools, churches, parks, and freeway landscaping.



Figure 2-2: Land Use within CVWD's Service Area

CVWD currently provides water service to over 8,000 accounts and wastewater collection service to over 6,300 accounts. CVWD's service area is for the most part built-out with densification accomplished through single-family lot splits and conversion of single-family to multi-family dwelling units.

#### **2.2.4 LEGISLATION**

The passage of SBx7-7, discussed in **Section 2.4**, will increase efforts to reduce the use of potable supplies in the future. As a retailer, CVWD has provided an assessment of its present and proposed future measures, programs, and policies to help its service area achieve the water use reductions.

Substantial water reductions can be gained by proper landscape design, installation, and maintenance. To improve water savings in this sector, DWR has updated the State Model Water Efficient Landscape Ordinance (MWELo) for cities and counties per Governor Brown's Executive Order B-29-15. MWELo promotes efficient landscapes in new developments and retrofitted landscapes.

The revised MWELo increases water use efficiency standards for new and retrofitted landscapes through more efficient irrigation systems, greywater usage, onsite storm water capture, and by limiting the portion of landscapes which can be covered in turf. It also required reporting by cities and counties on the implementation and enforcement of local ordinances, with required reports due by December 31, 2015.

### **2.3 WATER USE WITHIN CVWD'S SERVICE AREA**

The knowledge of an agency's water consumption by type of use or by customer class is key to developing that agency's water use profile which identifies when, where, and how much water is used, and by whom within the agency's service area. A comprehensive water use profile is critical to the assessment of impacts of prior water conservation efforts as well as to the development of future conservation programs.

This section provides an overview of CVWD's water consumption by customer class from 2011 to 2015. The customer classes are categorized as follows: single-family residential, multi-family residential, commercial/industrial/institutional (CII), and dedicated landscape, and fire services. Non-revenue water is discussed later in this section.

### 2.3.1 HISTORIC WATER DEMAND

Water demands within the CVWD's service area over the past six years were met by groundwater from the Verdugo Groundwater Basin (Basin) and imported water from FMWD. Annual water use since 2010 has ranged from about 3,638 AF to 4,683 AF (average 4,347 acre-feet per year (AFY)) as shown below in **Table 2-3**:

**Table 2-3: Six-Year Historic Total Water Demand (AF)**

| Year   | 2010  | 2011  | 2012  | 2013  | 2014  | 2015  |
|--------|-------|-------|-------|-------|-------|-------|
| Demand | 4,291 | 4,416 | 4,645 | 4,683 | 4,407 | 3,638 |

As indicated by the table, annual water use fluctuates each year.

### 2.3.2 WATER USE STATISTICS

CVWD maintains records of water consumption and bills its customers on a bi-monthly basis for water and sewer service. Approximately 89 percent of CVWD's water demand is residential. CII sectors account for approximately 9 percent of CVWD's potable water supply. A small portion of CVWD's demand pertains to fire service purposes. CVWD does not provide any sales to agriculture, nor other agencies, saline water intrusion barriers, groundwater recharge, or conjunctive use. Unaccounted for water consists of water losses due to leakage or inaccurate water meters. Water loss calculation was done in accordance with CWC 10631(e)(3)(B). The total number of service connections and water consumption is shown in **Tables 2-4** and **2-5**.

**Table 2-4: Historic Service Accounts by Sector**

| Sector                    | 2011         | 2012         | 2013         | 2014         | 2015         |
|---------------------------|--------------|--------------|--------------|--------------|--------------|
| Single-Family Residential | 6,810        | 6,816        | 6,825        | 6,827        | 6,828        |
| Multi-Family Residential  | 715          | 684          | 691          | 693          | 694          |
| Commercial/Institutional  | 418          | 416          | 411          | 411          | 413          |
| Landscape Irrigation      | 61           | 59           | 65           | 66           | 66           |
| Fire                      | 99           | 101          | 101          | 101          | 101          |
| <b>Total Connections:</b> | <b>8,103</b> | <b>8,076</b> | <b>8,093</b> | <b>8,098</b> | <b>8,102</b> |

**Table 2-5: Historic Water Demand by Sector (AF)**

| Sector                                                         | 2011         | 2012         | 2013         | 2014         | 2015         |
|----------------------------------------------------------------|--------------|--------------|--------------|--------------|--------------|
| Single-Family Residential                                      | 2,553        | 2,701        | 2,741        | 2,680        | 2,181        |
| Multi-Family Residential                                       | 881          | 912          | 920          | 906          | 800          |
| Commercial/Institutional                                       | 330          | 313          | 337          | 329          | 292          |
| Landscape Irrigation                                           | 107          | 173          | 154          | 139          | 82           |
| Other                                                          | 0.32         | 0            | 0            | 0            | 0            |
| <b>Total Water Sales:</b>                                      | <b>3,871</b> | <b>4,097</b> | <b>4,152</b> | <b>4,054</b> | <b>3,355</b> |
| Unaccounted for Water<br>(Percent of Total Water Consumption)  | 545<br>(12%) | 547<br>(12%) | 531<br>(11%) | 354<br>(8%)  | 283<br>(8%)  |
| <b>Total Water Consumption<br/>(Total Supply Into System):</b> | <b>4,416</b> | <b>4,645</b> | <b>4,683</b> | <b>4,407</b> | <b>3,638</b> |

## 2.4 WATER CONSERVATION ACT

### 2.4.1 SBX7-7 BACKGROUND

Due to the limited amount of water allowed to be pumped in the San Joaquin Delta, the CA Legislature drafted the Water Conservation Act of 2009 (SBx7-7) to protect statewide water sources. The legislation called for a 20 percent reduction in water use in California by the year 2020. The legislation amended the Water Code to call for 2015 and 2020 water use targets in the 2010 UWMPs, updates or revisions to these targets in the 2015 UWMPs, and allows DWR to enforce compliance to the new water use standards. In essence, the bill requires each urban retail water supplier to develop urban water use targets to help meet the 20 percent goal by 2020 and an interim 10 percent goal by 2015.

The bill establishes methods for urban retail water suppliers to determine their targets to help achieve statewide water reduction targets, which may or may not be a strict 20 percent level. The retail water supplier must select one of the four target-setting methods as described in **Section 2.4.3**. The retail agency may also choose to comply with SBx7-7 as an individual or as a region in collaboration with other water suppliers. Under the regional compliance option, the retail water supplier is mandated to report the water use target for its individual service area. The bill also includes reporting

requirements in the 2010, 2015, and 2020 UWMPs. Beginning this year (2016), failure to comply with interim and final targets will make a retail agency ineligible for grants and loans from the State needed to attain water self-sufficiency by 2020; however, if an agency which is not in compliance documents a plan and obtains funding approval to come into compliance, it could then become eligible for grants or loans.



**Figure 2-3: CVWD's Water Conservation Efforts Include Drought Tolerant Landscape**

Wholesale water suppliers, including FMWD, are not required to determine baseline daily per capita water use, urban water use target, interim urban water use target, or compliance daily per capita water use. However, wholesale water suppliers are required to include in their UWMPs discussions of programs they intend to implement to support the retail water suppliers, such as CVWD, in attaining their reduction goals and targets.

#### **2.4.2 SBX7-7 PROVISIONS**

In addition to an overall statewide 20 percent water use reduction, the objective of SBx7-7 is to reduce water use within each hydrologic region in accordance with the agricultural and urban water needs of each region. Currently, DWR recognizes 10 separate hydrologic regions in California as shown in **Figure 2-4**. Each hydrologic region



has been established for planning purposes and corresponds to the State's major drainage areas. CVWD is located in the South Coast Hydrologic Region (HR), which includes all of Orange County, most of San Diego and Los Angeles Counties, parts of Riverside, San Bernardino, and Ventura counties, and a small amount of Kern and Santa Barbara Counties. The South Coast HR is shown in **Figure 2-5**.

Per capita water use, measured in gallons per capita per day (GPCD), in the South Coast HR varies between different water agencies, depending on the geographic and economic conditions of the agency's service area. The South Coast HR has an overall baseline per capita water use of 180 GPCD and DWR has established a regional target of 149 GPCD for the region as a compliance target to satisfy SBx7-7 legislation.

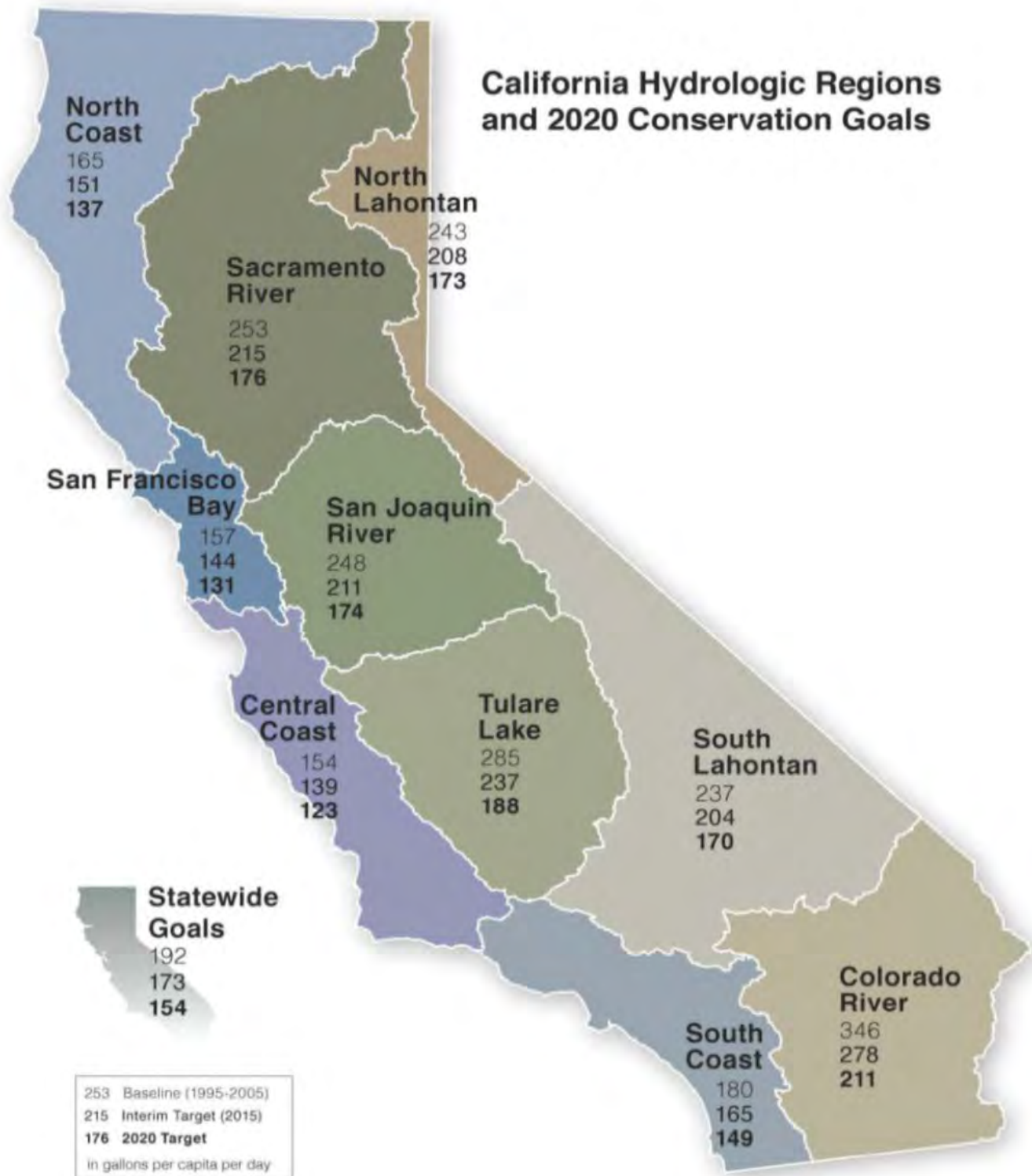


Figure 2-4: California's 2020 Water Conservation Goals



Figure 2-5: South Coast Hydrologic Region

### 2.4.3 SBX7-7 COMPLIANCE OPTIONS

DWR has established four compliance options for urban retail water suppliers to choose from. Each supplier is required to adopt one of the four options to comply with SBx7-7 requirements. The four options include:

- **Option 1:** A strict 20 percent reduction from the baseline by 2020 and 10 percent by 2015.
- **Option 2:** A budget-based approach by requiring an agency to achieve a performance stand based on three metrics:
  - Residential indoor water use of 55 GPCD
  - Landscape water use commiserate with Model Landscape Ordinance

- 10 percent reduction in baseline CII water use
- **Option 3:** Requires achievement of 95 percent of the applicable state hydrologic region targets as set forth in the State's 20x2020 Water Conservation Plan.
- **Option 4:** Requires the subtraction of Total Savings from the Base GPCD:
  - Total Saving includes indoor residential savings, meter savings, CII savings, and landscape and water loss savings

These options were established in order to avoid placing any undue hardship on water agencies which have already been implementing water conservation measures for some time. The basic procedure for determining the applicable water reduction target is illustrated by **Figure 2-6**. If an agency's 10-year baseline is slightly higher than the Hydrologic Region's target, that agency still must achieve a five percent reduction from its 5-year baseline. If an agency has a per capita use of 100 GPCD or less, that agency will not have to adhere to any reduction targets as that agency is already considered water efficient.

#### 2.4.4 CVWD'S COMPLIANCE OPTION SELECTION

To satisfy the provisions of SBx7-7, CVWD previously established a per capita water use target for the year 2020 as well as an interim target (2015) in its 2010 UWMP. DWR provided guidelines for determining these targets in its *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use* (2011) and also in the 2010 and 2015 UWMP Guidebooks. The *Methodologies* guidebook made provisions which allowed a water supplier to meet the target requirements by achieving any one of a number of target requirements, provided that the water supplier's per capita water use is low enough relative to the region within which it supplies water. The basic options included a minimum reduction requirement of 5 percent (Water Code § 10620), a 5 percent reduction from the Regional (South Coast HR) target (Water Code § 10608.20 (b) (3)), or a strict 20 percent reduction.

While each retail agency was required to choose a compliance option in 2010, DWR allows for the agency to change its compliance option in 2015. This will allow CVWD to determine its water use targets for Compliance Options 2 and 4 since CVWD anticipates more data to be available for target calculation in the future.

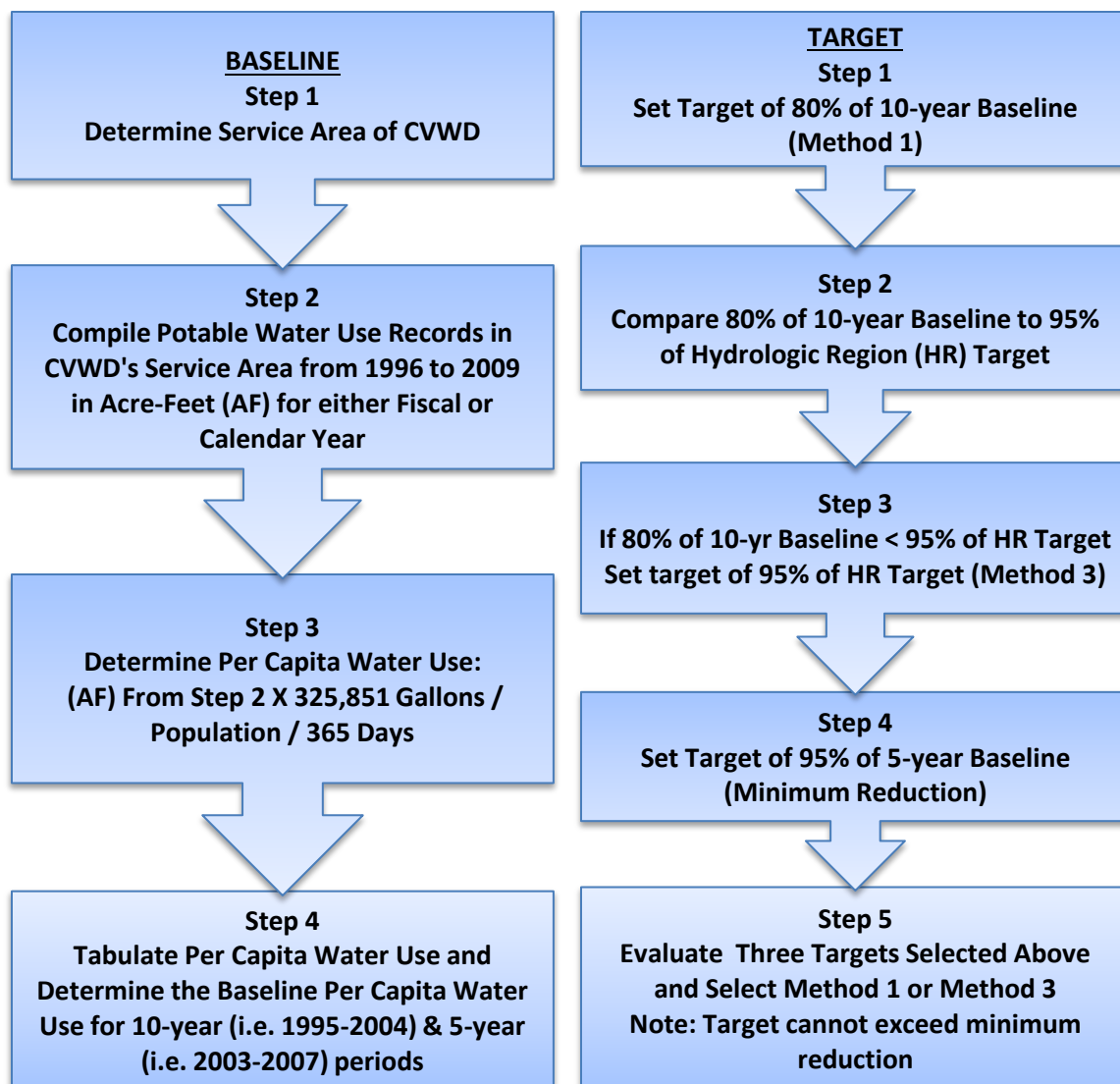


Figure 2-6: Procedure for Determining Baseline and Per Capita Water Use

The first step to calculating an agency's water use target is to determine its base daily-per-capita water use (baseline water use). This baseline water use is essentially the agency's gross water use divided by its service area population, reported in GPCD. Gross water use is defined as volume into the distribution system while deducting any recycled water for direct use during a 10-year period. The baseline water use is calculated as a continuous 10-year average during a period which ends no earlier than December 31, 2004 and no later than December 31, 2010. Agencies for which recycled water made up 10 percent or more of 2008 retail water delivery can use up to a 15-year average for the calculation. The base period must end no earlier than December 31, 2007, and no later than December 31, 2010.

## 2.4.5 BASELINE WATER USE

Since CVWD does not use recycled water, a 10-year instead of a 15-year rolling average was calculated. CVWD's baseline water use is **160.1 GPCD**, which was obtained from the 10-year period January 1, 1996 to December 31, 2005.

**Table 2-6** provides the base period ranges used to calculate the baseline water use for CVWD as well as the service area population and annual water use data from the base daily per capita water use. The data was used to calculate the continuous 10-year and 5-year average baseline. Moreover, regardless of the compliance method adopted by CVWD, it will need to meet the minimum water use target of 5 percent reduction from a five-year baseline as calculated. Values for 1996 to 2007 are from the 2010 UWMP, and 2011 to 2015 values are from CVWD Records.

**Table 2-6: Past GPCD Water Use**

| Calendar Year                                                | Service Area Population | Gross Water use (AF) | Daily Per Capita Water use (GPCD) |
|--------------------------------------------------------------|-------------------------|----------------------|-----------------------------------|
| 1996                                                         | 30,390                  | 5,277                | 155.0                             |
| 1997                                                         | 30,475                  | 5,497                | 161.0                             |
| 1998                                                         | 30,560                  | 5,076                | 148.3                             |
| 1999                                                         | 30,645                  | 5,608                | 163.4                             |
| 2000                                                         | 30,731                  | 5,717                | 166.0                             |
| 2001                                                         | 30,817                  | 5,635                | 163.0                             |
| 2002                                                         | 30,903                  | 5,792                | 167.0                             |
| 2003                                                         | 30,989                  | 5,724                | 164.7                             |
| 2004                                                         | 31,075                  | 5,726                | 165.2                             |
| 2005                                                         | 31,162                  | 5,327                | 152.6                             |
| 2006                                                         | 31,249                  | 5,463                | 156.8                             |
| 2007                                                         | 31,336                  | 5,525                | 155.2                             |
| <b>Past Five Years</b>                                       |                         |                      |                                   |
| 2011                                                         | 31,612                  | 4,416                | 123.2                             |
| 2012                                                         | 31,790                  | 4,645                | 129.2                             |
| 2013                                                         | 31,874                  | 4,683                | 129.8                             |
| 2014                                                         | 31,968                  | 4,407                | 121.8                             |
| 2015                                                         | 32,385                  | 3,647                | 100.5                             |
| 10-Year Average (1996-2005) Base Daily per Capita Water Use: |                         |                      | <b>160.1</b>                      |
| 5-Year Average (2003-2007) Base Daily per Capita Water Use:  |                         |                      | <b>159.1</b>                      |

## 2.4.6 SBX7-7 WATER USE TARGETS

In its 2010 UWMP, CVWD selected compliance **Option 3**. Under Compliance Option 3, CVWD chose to achieve 95 percent of the State's hydrologic region target of 141.6 GPCD by 2020; however, the minimum required calendar year target calculated from the five-year base daily GPCD found in **Table 2-7** comes to 151.1 GPCD in 2020. Therefore, under Option 3, CVWD's 2015 interim water use target is 151 GPCD, and the 2020 final water use target is **142 GPCD** as summarized in **Table 2-7**.

**Table 2-7: Preferred Compliance Option and Water Use Targets**

| Option 3                               | Baseline | 2015 Target | 2020 Target |
|----------------------------------------|----------|-------------|-------------|
| 95% of State Hydrologic Region Targets | 160      | 151         | 142         |

As shown in **Table 2-6**, CVWD's 2015 GPCD was **100.5** which is well below their 2015 and 2020 Targets. This means that CVWD has achieved their 2015 interim water use target and is set to achieve their 2020 target as well.

CVWD is not revising its interim or 2020 SBx7-7 targets.

## 2.5 WATER USE REDUCTION PLAN

### 2.5.1 ON-GOING WATER CONSERVATION EFFORTS

In order to remain below the SBx7-7 targets, CVWD will continue to implement the water use efficiency measures described in **Section 4** of this UWMP and continue to participate in water use efficiency programs offered by MWD rebate programs for its retail agencies. Because residential homes are the largest water use sector in the region, the focus of water conservation efforts will continue to be residential rebate programs and public outreach programs. Single family residential homes and some large landscapes are common in the CVWD area.

In addition to the SBx7-7 provisions, agencies also seek to manage the provisions of Governor Brown's Executive Order. Governor Brown granted this Executive Order in April 2015 which mandated a statewide 25 percent reduction in water use. This executive order helped to further the goals of SBx7-7. To date, Californians have

reduced water use by about 25 percent since emergency conservation regulations took effect in June 2015. This continues to meet Governor Brown's 25 percent mandate.



**Figure 2-7: SBx7-7 Seeks to Preserve the Waters of the Bay-Delta**

Through financial incentive programs and various public outreach campaigns and events, CVWD has met its SBx7-7 target.

## **2.5.2 FUTURE MWD PROGRAMS**

### **OVERVIEW**

In 2010, MWD, in collaboration with its member agencies, developed a draft Long-Term Conservation Plan, which was modified in April 2015, with the primary goals to:

- Achieve the 2015 Integrated Water Resources Plan Update (IRP) conservation target. The target for new water savings through conservation is a regional per capita use of 159 gallons per day in 2015 and 141 gallons per day in 2020.
- Pursue innovation which will advance water conservation.
- Transform the public's value of water within this region. A higher value on water within this region can lead to a conservation ethic resulting in permanent change in water use behavior, earlier adoption of new water-saving technologies, and transition towards climate-appropriate landscapes.



Figure 2-8: MWD's IRP is a Valuable Resource for its Member Agencies

Achieving these goals requires the use of integrated strategies which leverage the opportunities within the region.

## STRATEGIES

MWD and its member agencies will implement five strategies through a traditional program, a market acceleration program, and legislation and regulation. The five strategies include:

- **Use catalysts for market transformation.** MWD and member agencies will pursue market transformation to affect the market and consumer choices for water efficient devices and services.
- **Encourage action through outreach and education.** MWD and member agencies will provide outreach, educational workshops, and training classes through a range of media and formats which are essential to changing public perceptions of the value of water.
- **Develop regional technical capability.** MWD and member agencies will conduct research, facilitate information sharing, and/or provide technical assistance to member agencies and retail agencies to develop technical capabilities within the region for water budgeting, advanced metering infrastructure, ordinances, retail rate structures, and other conservation measures.
- **Build strategic alliances.** MWD and member agencies will form strategic alliances with partners to leverage resources, opportunities and existing

momentum which support market transformation.

- **Advance water efficiency standards.** MWD and member agencies will work to advance water efficiency codes and standards to increase efficiency and reduce water waste.

## METHODS TO ADVANCE STRATEGIES

Successful market transformation requires the integrated use of all five strategies. It is implemented through three complementary programs: traditional and market acceleration programs, legislation, and regulation. When used together, these approaches can be catalytic and transform markets.

- **Traditional Program:** A traditional program of incentives, outreach, education, and training will be used to provide a foundation of water savings, establish baseline conditions, provide market data, and help determine devices and services which are primed for market acceleration. Implementation may include regional incentive programs, pilot programs, regional outreach, and research for a variety of devices and services.
- **Market Acceleration Program:** A portion of MWD's resources will be used for market acceleration of devices and services which have potential for market change. MWD will use a strategic focus for a specified time period to affect the market for a particular device or service. Tactics may include strategic outreach to manufacturers, retailers, contractors, and consumers; enhanced incentives; and collaboration on implementation.
- **Legislation and Regulation:** These are important tools and often the primary means for ensuring future water savings from devices and services. Regulation, ordinances, and codes establish conditions which will ensure a minimum level of water efficiency for a particular device or service in the future. Markets are dynamic, and the influences on manufacturers, retailers, and consumers are constantly changing. Progress made on changing consumer preferences for a market share of efficient products is protected through legislation and regulations requiring a minimum efficiency standard. This benefits both water agencies and manufactures who invest in bringing water-efficiency technologies to the market. Legislation and regulation are also effective exit strategies to

discontinue traditional incentive programs so that resources can be redirected to new technologies and approaches.

Implementation of the combined programs, Traditional – Market Acceleration – Legislation and Regulation, will be closely coordinated between MWD, member agencies and sub-agencies to maximize synergies. An adaptive management approach will be employed using research, implementation, and evaluation to guide decisions on program activities and intensity.

### PERIODIC REVIEW

A periodic review of conservation actions to measure progress towards the water savings goals will be an integral component of the effort. The review will include work which is completed or in progress. It will consider factors which have affected the results as well as the opportunities to improve cost effectiveness and water savings.

## 2.6 DEMAND PROJECTIONS

### 2.6.1 25 YEAR PROJECTIONS

One of the main objectives of this UWMP is to provide CVWD's future water demand outlook. Currently, CVWD's total annual water demand is 3,647 AF comprised of 60 percent local groundwater and 40 percent imported water.

As illustrated in **Table 2-8**, CVWD's water demand is expected to increase within the next 25 years.

**Table 2-8: Current and Projected Water Demands on Supply Sources (AF)**

| Water Supply Sources                            | 2015         | 2020         | 2025         | 2030         | 2035         | 2040         |
|-------------------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| FMWD (Imported Treated Full Service (non-int.)) | 1,745        | 885          | 1,271        | 1,428        | 1,576        | 1,746        |
| Verdugo Basin GW                                | 1,902        | 3,185        | 3,844        | 3,854        | 3,854        | 3,854        |
| <b>Total</b>                                    | <b>3,647</b> | <b>4,070</b> | <b>5,115</b> | <b>5,282</b> | <b>5,430</b> | <b>5,600</b> |

**Table 2-9** shows the projected demands for imported water, which CVWD has provided to FMWD, its wholesale agency, illustrating the amount of water CVWD may need to purchase from FMWD over the next 25 years.

**Table 2-9: CVWD's Demand Projections Provided to Wholesale Suppliers (AF)**

| Wholesaler | 2020 | 2025  | 2030  | 2035  | 2040  |
|------------|------|-------|-------|-------|-------|
| FMWD       | 885  | 1,271 | 1,428 | 1,576 | 1,746 |

**Table 2-10** projects future demands based on water sector over the next 25 years. Demand projections were determined using 110 GPCD, assuming that individuals continue to save water, and the projected population. Per capita consumption rates should be expected to remain under 110 GPCD by 2020 and trend further below that rate.

**Table 2-10: CVWD's Demand Projections by Water Sector (AF)**

| Sector                           | 2020         | 2025         | 2030         | 2035         | 2040         |
|----------------------------------|--------------|--------------|--------------|--------------|--------------|
| Water Service Area Population    | 33,203       | 34,041       | 34,901       | 35,782       | 36,686       |
| <b>Demands</b>                   |              |              |              |              |              |
| Single Family Residential        | 2,416        | 2,477        | 2,539        | 2,603        | 2,669        |
| Multi-Family Residential         | 833          | 854          | 875          | 897          | 920          |
| Commercial/Institutional         | 302          | 309          | 317          | 325          | 333          |
| Landscape Irrigation             | 121          | 124          | 128          | 131          | 134          |
| <b>Total Water Sales:</b>        | <b>3,672</b> | <b>3,764</b> | <b>3,859</b> | <b>3,957</b> | <b>4,057</b> |
| Unaccounted for Water            | 398          | 430          | 441          | 452          | 464          |
| <b>Projected Total Water Use</b> | <b>4,070</b> | <b>4,194</b> | <b>4,300</b> | <b>4,409</b> | <b>4,520</b> |

## 2.6.2 LOW-INCOME HOUSEHOLD PROJECTIONS

One significant change to the UWMP Act since 2005 is the requirement for retail water suppliers to develop water use projections for “low-income” households at the single-family and multi-family level. These projections assist retail suppliers with compliance with Section 65589.7 of the Government Code, which requires suppliers to grant a priority for the provision of service to low-income households. Consistent with this Code section, a low-income household is defined as a household earning 80 percent or less of the area’s median income.

The 2010 UWMP utilized the Regional Housing Needs Assessment (RHNA) or Regional Housing Needs Plan information to obtain a percentage of low income households within an area. The information was developed by the Local Council of Governments, in coordination with the California Department of Housing and Community Development. The RHNA plan lists every city within the Southern California region and provides percentages of very low and low income households. The area CVWD main serves is La Crescenta-Montrose, an unincorporated area and a census-designated place.

In assessing the most recent RHNA Subcommittee’s report titled 5<sup>th</sup> Cycle RHNA Final Allocation Plan, 1/1/2014 – 10/1/2021, the percentage of very low and low income households combined was 41.2 percent within unincorporated areas. This value is not a valid representation and will not be used.

Instead, a percentage was obtained from records from the US Census Bureau. It provides information regarding the breakdown of households per income range and the percentages for each range. Based on their latest records (2014), approximately 12.7 percent of households is considered low income.

Therefore, from inference, it is estimated that approximately 12.7 percent of the projected water demands within the CVWD service area will be for housing needed for low income households. **Table 2-11** provides the projected water needs for low income household. The projected water demands shown here represent 12.7 percent of the projected residential water demand provided in **Table 2-11**.

**Table 2-11: Projected Water Demands for Housing Needed for Low-income Households (AF)**

| Water use Sector                                     | 2020  | 2025  | 2030  | 2035  | 2040  |
|------------------------------------------------------|-------|-------|-------|-------|-------|
| Total Retail Demand                                  | 3,672 | 3,764 | 3,859 | 3,957 | 4,057 |
| Total Residential Demand                             | 3,249 | 3,330 | 3,414 | 3,501 | 3,589 |
| <b>Total Low-income Households Demand</b>            | 413   | 423   | 434   | 445   | 456   |
| SF Residential Demand - Total                        | 2416  | 2477  | 2539  | 2603  | 2669  |
| <b>SF Residential Demand – Low-income Households</b> | 307   | 315   | 322   | 331   | 339   |
| MF Residential Demand - Total                        | 833   | 854   | 875   | 897   | 920   |
| <b>MF Residential Demand – Low-income Households</b> | 106   | 108   | 111   | 114   | 117   |

# SECTION 3: WATER SOURCES & SUPPLY RELIABILITY



*CVWD imports 40 percent of its supply from Foothill Municipal Water District, water wholesale agency, and 60 percent from local ground supply to meet its demands.*



## SECTION 3: WATER SOURCES & SUPPLY RELIABILITY

### 3.1 OVERVIEW

CVWD's water supplies consist of groundwater produced from the Verdugo Basin and imported water purchased from FMWD. Approximately 60 percent of CVWD's water consists of groundwater, while the remaining 40 percent consists of imported water. The majority of CVWD's ground water wells are located along the Verdugo Wash, south of Honolulu Avenue. Local groundwater is disinfected with chlorine before blending with MWD's surface water. The sources of imported water supplies include the Colorado River Aqueduct (CRA) and the State Water Project (SWP). The most dominant feature of CVWD's water supply operations is the intensive pumping required for delivering water to the residents in the communities located in the foothills of the San Gabriel Mountains. In some cases, this water must be lifted over 1,000 feet in order to deliver it to the elevations of some water users in the service area. This section discusses water supply, quality, and water reliability under all foreseeable hydrologic conditions from 2020 through 2040.

## 3.2 IMPORTED WATER

### 3.2.1 WATER SOURCES (MWD)

MWD has access to imported water from the Colorado River and the Sacramento-San Joaquin River Delta in Northern California. These two water systems provide Southern California with over 2 million acre-feet (MAF) of water annually for urban uses.

#### COLORADO RIVER

The Colorado River supplies California with 4.4 MAF annually for agricultural and urban uses with approximately 3.85 MAF used for agriculture in Imperial and Riverside Counties. The remaining unused portion (600,000 to 800,000 AF) is used for urban purposes in MWD's service area.



Figure 3-1: Parker Dam at Colorado River

#### BAY DELTA

In addition to the Colorado River, the Sacramento-San Joaquin River Delta has historically provided a significant amount of supply annually to Southern California. The Delta is located at the confluence of the Sacramento and San Joaquin Rivers east of the

San Francisco Bay and is the West Coast's largest estuary. The Delta supplies Southern California with over 1 MAF of water annually which has been significantly reduced in recent years.

The use of water from the Sacramento-San Joaquin Delta continues to be a critical issue as it competes between uses for water supply and ecological habitat that jeopardizes the Delta's ability to meet either need and may threaten the estuary's ecosystem.

An ongoing planning effort to increase long-term supply reliability for both the SWP and Central Valley Project (CVP) is taking place. This plan, formerly known as the Bay Delta Conservation Plan (BDCP), includes co-equal goals to improve water supply reliability and restore the Delta ecosystem. In April 2015, state and federal agencies announced a new sub-alternative, California WaterFix and California EcoRestore, which replaced the proposed BDCP as the State's preferred project. The new alternative reflects the State's proposal to separate the conveyance facility and habitat restoration measures into two separate efforts: California WaterFix and California EcoRestore. These two efforts are a direct reflection of public comments and fulfill the requirement of the 2009 Delta Reform Act to meet co-equal goals. Preparation of the BDCP and now California WaterFix is through a collaboration of state, federal, and local water agencies, state and federal fish agencies, environmental organizations, and other interested parties. Several "isolated conveyance system" alternatives considered in the plan would divert water from the north Delta to the south Delta where pumped water travels into the south-of-Delta stretches of the SWP and CVP. The new conveyance facilities would allow for greater flexibility in balancing the needs of the estuary with the reliability of water supplies. The plan also provides other benefits, such as reducing the risk of long-term outages from Delta levee failures.

The BDCP/California WaterFix has been in development since 2006 and is currently undergoing extensive environmental review. In December 2013, officials released the Draft BDCP and its associated Draft Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) for public review. In response to public comments, the BDCP was reevaluated. Based on this reevaluation, as mentioned above, in April 2015 the lead agencies announced a modified alternative which effectively split the project into two parts: the conveyance portion (known as Cal WaterFix), and the restoration portion (known as EcoRestore). The Cal WaterFix alternative is evaluated in a partially recirculated draft environmental document (Recirculated Draft EIR/Supplemental Draft

EIR) released for public review in July 2015. The final environmental documents for Cal Waterfix will be available in 2016.

While there is widespread support for the BDCP/Cal WaterFix project, plans are currently in flux and environmental review is ongoing. Additionally, several regulatory and legal requirements must be met prior to any construction. Because of this uncertainty, any improvements in SWP supply reliability or other benefits that could result from this proposed project are not included in this Plan.

### AQUEDUCT SYSTEMS

In order to provide Southern California with imported water, MWD utilizes two separate aqueduct systems (one for each source of supply) to obtain its supplies. These two aqueduct systems convey water from each source into two separate reservoirs whereupon MWD pumps the water to one of its five treatment facilities. One of these aqueduct systems, known as the Colorado River Aqueduct (CRA), serves as MWD's primary water delivery system and first constructed shortly after MWD's incorporation in 1928. The CRA, which is owned and operated by MWD, spans 242 miles and conveys water from the Colorado River to Lake Mathews.



**Figure 3-3: Colorado River Aqueduct**

In addition to the CRA, MWD receives water from northern California via the California Aqueduct. Also known as the State Water Project (SWP), the California Aqueduct is 444 miles long and carries Delta water to Southern California and is operated by DWR.



**Figure 3-4: California Aqueduct or "SWP"**

The previously mentioned aqueducts supply Southern California with a significant amount of its water and are crucial to its sustainability. In addition to these two water systems, there are also several other aqueducts vital to the State. The major aqueducts in California are shown in **Figure 3-5**.

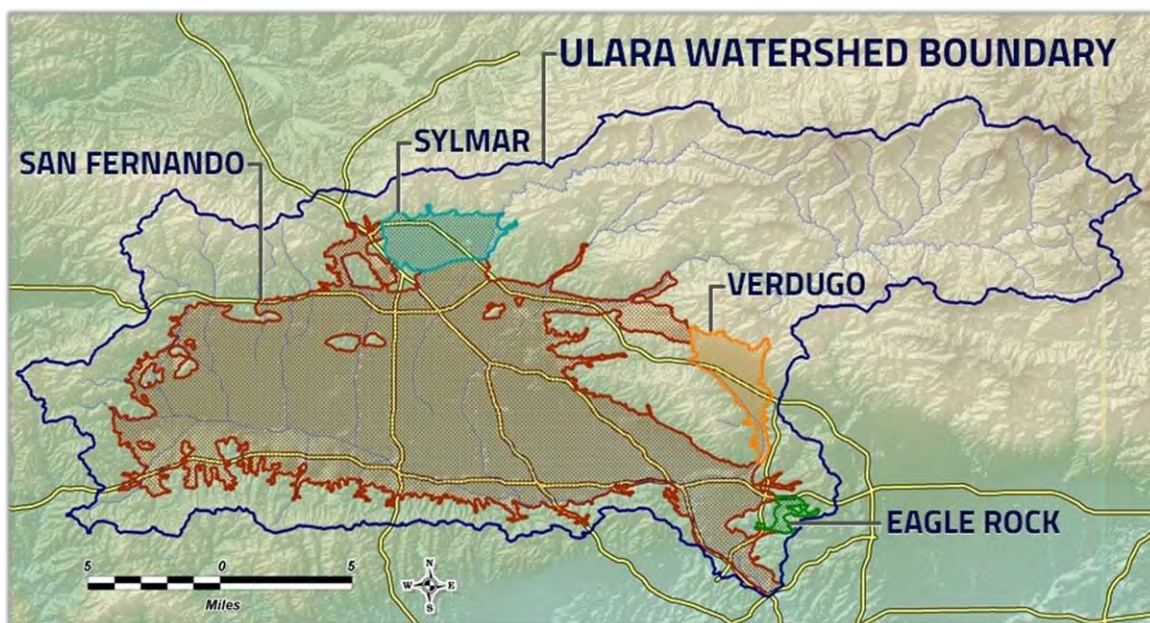


Figure 3-5: Aqueduct Systems in California



### 3.3 GROUNDWATER

CVWD owns and operates 12 production wells in the Verdugo Groundwater Basin (Basin). The Basin, shown in **Figure 3-8**, north and east of the Verdugo Mountains, consists of 4,400 acres and comprises 3.6 percent of the total valley fill. It is bounded on the north by the San Gabriel Mountains; on the northwest by a groundwater divide, which separates it from the San Fernando Basin; on the east by a groundwater divide separating it from the Monk Hill Subarea of the Raymond Basin; on the southeast by the San Rafael Hills; and on the south and southwest by the Verdugo Mountains.



**Figure 3-7: Local Groundwater Basins**

The Basin is an adjudicated basin within the Upper Los Angeles River Area (ULARA). The Basin has an adjudicated "safe yield" of 7,150 AFY. CVWD shares groundwater rights in this basin with the City of Glendale. As the only two water-rights holders in the Basin, CVWD has an annual entitlement of 3,294 AFY and the City of Glendale has an annual entitlement of 3,856 AFY.

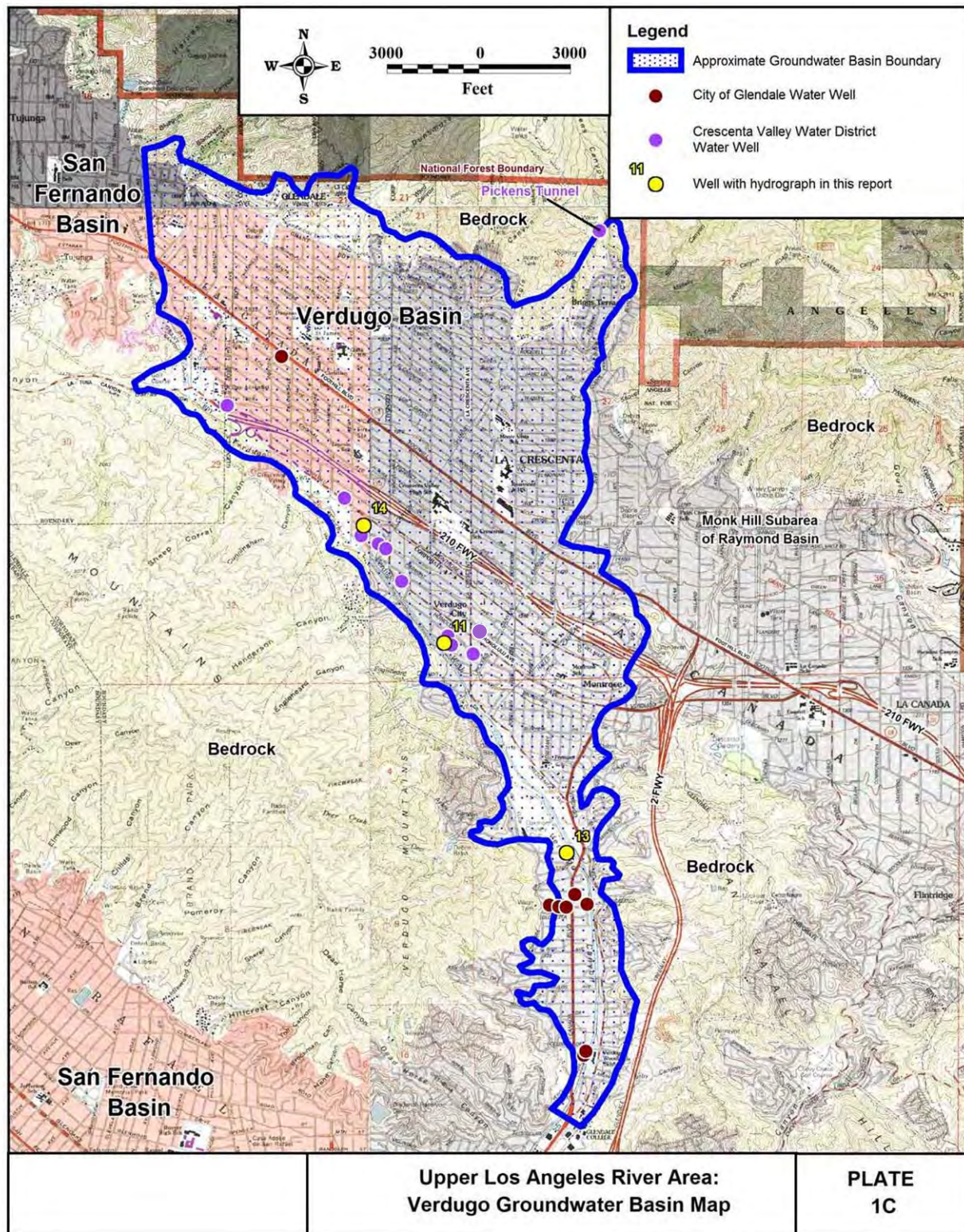


Figure 3-8: Verdugo Basin

### 3.4 WATER QUALITY

In 1974, Congress passed the Safe Drinking Water Act in order to protect public health by regulating the nation's drinking water supply. As required by the Safe Drinking Water Act, CVWD provides annual Water Quality Reports to its customers.



Figure 3-9: Health Standards Protect Drinking Water

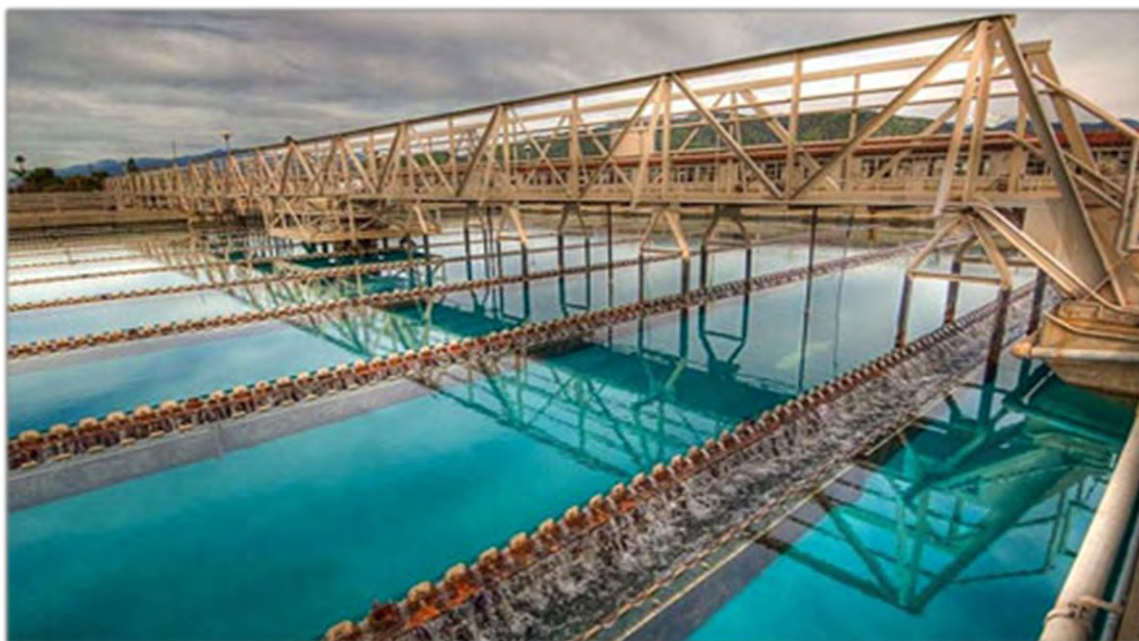
To ensure quality of its water, CVWD considers risks to drinking water, including: turbidity, microbiological content, organic and inorganic chemical concentration, radionuclide content, and disinfection by-product concentration.

Adverse health effects from these contaminants include not only acute effects but also chronic effects, which may occur if contaminants are ingested at unsafe levels over many years.

The two main sources of CVWD's water supply are imported water from FMWD (MWD water) and groundwater from the Verdugo Basin. Since MWD draws the majority of its water from the CRA and the SWP, the quality of CVWD's imported water supply is closely related to the quality of these two sources.

### 3.4.1 IMPORTED WATER QUALITY

MWD is responsible for providing water of a high quality throughout its service area. The water delivered by MWD is tested both for currently regulated contaminants and for additional contaminants of concern. Over 300,000 water quality tests are conducted each year to regulate the safety of its water. MWD's supplies originate primarily from the CRA and from the SWP. The two sources, proportional to each year's availability of the source, is then treated and delivered throughout MWD's service area.



**Figure 3-10: MWD's Weymouth Treatment Plant Provides a Safe Supply of Water**

MWD's primary sources face individual water quality issues of concern. The CRA water source contains a higher level of total dissolved solids (TDS) and a lower level of organic material, while the SWP contains a lower TDS level while its level of organic materials is much higher, lending to the formation of disinfection byproducts. To remediate the CRA's high level of salinity and the SWP's high level of organic materials, MWD has been blending CRA water with SWP supplies as well as implementing updated treatment processes to decrease the disinfection byproducts. In addition, MWD engages in efforts to protect its Colorado River supplies from threats of uranium, perchlorate, and chromium VI while also investigating the potential water quality impact of emerging contaminants, N-nitrosodimethylamine (NDMA) and pharmaceuticals and personal care products (PPCPs). MWD has assured its ability to overcome the above mentioned water

quality concerns through its protection of source waters, implementation of renovated treatment processes, and blending of its two sources.



**Figure 3-11: Native Rock adds to the Salinity of the Colorado River Water Supplies**

While unforeseeable water quality issues could alter reliability, MWD's current strategies ensure the deliverability of high quality water.

### **3.4.2 GROUNDWATER QUALITY**

The water quality of the Basin is high in nitrates and selected wells show the presence of Volatile Organic Compounds (VOCs), particularly tetrachloroethylene (PCE), above the State Water Resources Control Board's Division of Drinking Water (DDW) maximum contaminant levels (MCLs). In addition, CVWD experienced Methyl tertiary butyl ether (MTBE) levels above the public health goal and removed a well from service in 2006. That well was placed back into service in May 2008; however, another well was taken out of service in September 2008 due to high levels of MTBE. That well was placed back into service in March 2011. While MTBE levels remain below detectable concentrations, CVWD continues to monitor all sources on a monthly basis.

### **3.4.3 WATER QUALITY IMPACTS**

As a result of MWD's efforts, MWD's 2015 UWMP indicates that none of the water quality challenges described below will impact the reliability of its supplies during the next 25 years.

CVWD's water system is and has been in compliance with all DDW water quality standards. Groundwater quality does not impact water supply at this time due to CVWD's Nitrate treatment plant and the ability to blend waters below the MCL for PCE, and Nitrate.

Groundwater containing nitrate is either blended with imported water and/or treated at CVWD's Glenwood Nitrate Reclamation Facility to meet drinking water standards. Blending with other well water or imported water is sufficient to supply water at less than the MCL for PCE as approved by DDW. During the past five years, there have been wells with MTBE levels above the DDW allowed MCL. Wells with MTBE levels above the secondary standard were taken out of service. At the present time, MTBE is not present in any of CVWD's wells above the secondary DDW standard. MTBE levels are monitored monthly throughout CVWD.

In the case that MTBE should reappear at levels above the secondary MCL, a Granular Activated Carbon treatment plant has been designed and would be able to be constructed within six months if necessary. Should complete contamination of CVWD's groundwater occur for a temporary or extended period of time due to high concentrations of MTBE, imported water would be used to meet CVWD's demand. A maximum of 5.3 million gallons per day (MGD) can be obtained from FMWD, CVWD's wholesale provider and 3.2 MGD is available from CVWD's emergency connection with the City of Glendale.

Additionally, CVWD is near completing a second emergency interconnection with the City of Los Angeles by the end of 2016. The additional 1.9 MGD from LADWP, plus water supply from CVWD's wells and water from Glendale Water and Power (GWP) will allow CVWD to provide an emergency water supply of 4.0 MGD to FMWD and its sub-agencies.

### **3.5 CURRENT & PROJECTED WATER SUPPLY**

#### **3.5.1 IMPORTED WATER PURCHASES**

CVWD currently relies on 1,745 AF of imported water wholesaled by MWD through FMWD to supplement local groundwater. Imported water represents approximately 40 percent of CVWD's total water supply. MWD's principal sources of water originate from

two sources - the Colorado River via the Colorado Aqueduct and the Lake Oroville watershed in Northern California through the SWP. This water is treated at MWD's Weymouth Treatment Plant. Because of SWP's lower salinity level, MWD blends SWP water with CRA to reduce the salinity of the delivered water.

MWD's Upper Feeder is tapped by FMWD in the vicinity of Seco Street and Rosemont Avenue in the City of Pasadena. Water flows from MWD's system into FMWD's Arroyo Seco Gravity Main, which traverses in a northerly direction in the vicinity of Rosemont Avenue and terminates at FMWD's Main Pumping Plant located near Rosemont Avenue and Washington Boulevard in the City of Pasadena.

**Table 3-1** shows the recent imported water from MWD via FMWD in the past six years from 2010 to 2015.

**Table 3-1: Amount of Water Imported in 2010 – 2015 (AF)**

| Wholesaler Source       | 2010  | 2011  | 2012  | 2013  | 2014  | 2015  |
|-------------------------|-------|-------|-------|-------|-------|-------|
| FMWD                    | 1,678 | 1,425 | 1,519 | 1,929 | 2,187 | 1,745 |
| % of Total Water Supply | 39%   | 32%   | 33%   | 41%   | 50%   | 48%   |

### 3.5.2 GROUNDWATER PRODUCTION

From 2010 to 2015, CVWD has pumped groundwater ranging from 1,892 to more than 3,126 AF. The Basin was adjudicated in a court decision in 1979 and is administered by the ULARA Watermaster. A copy of the ULARA judgment is included in this UWMP as **Appendix A**. CVWD's prescriptive rights in the Basin are 3,294 AFY. To date, the neighboring City of Glendale, as the only other Basin rights holder, has not pumped its full adjudication (3,856 AFY) in the Basin.

It is CVWD's goal to maintain full groundwater pumping capabilities in the Basin to pump its adjudicated right of 3,294 AF every year. As shown in **Table 3-2**, CVWD has a projection of 3,294 AFY of groundwater. Since the 2005 UWMP, CVWD implemented a long-term capital improvement program to continue rehabilitating its original 12 wells. In addition, CVWD has installed a new well (Well 16), which came online in 2016. CVWD is also planning to reactivate Well 2 with a new nitrate removal plant.

**Table 3-2: Groundwater Pump Rights (AFY)**

| Basin Name    | Pumping Right (AFY) |
|---------------|---------------------|
| Verdugo Basin | 3,294               |
| <b>Total</b>  | <b>3,294</b>        |

**Table 3-3** shows CVWD’s recent groundwater production from the Basin in the past 5 years from 2010 to 2015.

**Table 3-3: Amount of Groundwater Pumped in the Past 6 Years (AF)**

| Basin Name(s)                  | 2010       | 2011       | 2012       | 2013       | 2014       | 2015       |
|--------------------------------|------------|------------|------------|------------|------------|------------|
| Verdugo Basin                  | 2,612      | 2,991      | 3,126      | 2,754      | 2,220      | 1,902      |
| <b>% of Total Water Supply</b> | <b>61%</b> | <b>68%</b> | <b>67%</b> | <b>59%</b> | <b>50%</b> | <b>52%</b> |

CVWD has a contract to lease water rights from GWP. The agreement, contained in **Appendix B**, allows CVWD to pump and purchase groundwater through the operation of GWP’s Rockhaven Well (Well 16) and its existing infrastructure. CVWD began purchasing groundwater pumped from GWP’s well in March 2016.

### 3.5.3 WATER SUPPLY PROJECTIONS

#### IMPORTED WATER SUPPLY PROJECTIONS

Based on MWD’s supply projections that it will be able to meet full service demands under all three hydrologic scenarios, FMWD, CVWD’s wholesale supplier concludes that it would also be able to meet the demands of its retail agencies under these conditions.

CWC section 10631 (k) requires the wholesale agency to provide information to the urban retail water supplier for inclusion in its UWMP which identifies and quantifies the existing and planned sources of water available from the wholesale agency. **Table 3-4** indicates the wholesaler’s water availability projections by source for the next 25 years as provided to CVWD by FMWD.

**Table 3-4: Wholesaler Identified & Quantified Planned Sources of Water (AF)**

| Wholesaler Source | 2020 | 2025  | 2030  | 2035  | 2040-opt |
|-------------------|------|-------|-------|-------|----------|
| FMWD              | 885  | 1,271 | 1,428 | 1,576 | 1,746    |

## GROUNDWATER SUPPLY PROJECTIONS

**Table 3-5** shows the amount of groundwater projected to be pumped from the Basin by CVWD over the next 25 years. It is CVWD's goal to pump its entire adjudication every year. Various problems with CVWD's wells have made that prohibitive in the past three years. This is a contributing factor to CVWD's intention to embark on a well rehabilitation and development plan over the next several years.

**Table 3-5: Amount of Groundwater Projected to be Pumped (AF)**

| Basin Name(s)           | 2020  | 2025  | 2030  | 2035  | 2040-opt |
|-------------------------|-------|-------|-------|-------|----------|
| Verdugo Basin GW        | 3,185 | 3,844 | 3,854 | 3,854 | 3,854    |
| % of Total Water Supply | 78%   | 75%   | 73%   | 71%   | 69%      |

**Table 3-5** includes CVWD's projected amount of groundwater pumped from GWP's Rockhaven Well. The projected amount of groundwater purchased from GWP over the next 25 years averages 566 AFY.

## 3.6 SUPPLY VS DEMAND

### 3.6.1 MWD'S SUPPLY OUTLOOK

#### COLORADO RIVER SUPPLIES

Water supply from the CRA continues to be a critical issue for Southern California as MWD competes with several agricultural water agencies in California for unused water rights to the Colorado River. Although California's allocation has been established at 4.4 MAF annually, MWD's allotment stands at 550,000 AFY with additional amounts increasing MWD's allotment to 842,000 AFY if there is any unused water from the

agricultural agencies.

MWD recognizes that competition from other states and other agencies within California has decreased the CRA's supply reliability. In 2003, the Quantification Settlement Agreement (QSA) facilitated the transfer of water from agricultural agencies to urban uses. This historic agreement provides California the means to implement transfers and supply programs, which will allow California to live within the State's 4.4 MAF basic annual apportionment of Colorado River water.

### **STATE WATER PROJECT SUPPLIES**

The reliability of the SWP impacts MWD's member agencies' ability to plan for future growth and supply. DWR's Bulletin 132-14, November 2015, provides certain SWP reliability information, and in July 2015, the DWR Bay-Delta Office prepared a report specifically addressing the reliability of the SWP. This report, The State Water Project Delivery Reliability Report, provides information on the reliability of the SWP to deliver water to its contractors assuming historical precipitation patterns.

On an annual basis, each of the 29 SWP contractors, including MWD, request an amount of SWP water based on their anticipated yearly demand. In most cases, MWD's requested supply is equivalent to its full Table A amount. After receiving the requests, DWR assesses the amount of water supply available based on precipitation, snow pack on Northern California watersheds, volume of water in storage, projected carry over storage, and Sacramento-San Joaquin Bay Delta regulatory requirements. For example, according to the State Water Project Delivery Capability Report 2015, the total SWP annual delivery of water to contractors ranged from 3.7 MAF in 2005 to 476,743 AF in 2014. Due to the uncertainty in water supply, contractors are not typically guaranteed their full Table A amount, but instead a percentage of that amount based on available supply.

Each December, DWR provides the contractors with their first estimate of allocation for the following year. As conditions develop throughout the year, DWR revises the allocations. Currently, the total contractor requested allocation for Table A water is 4.2 MAF. MWD initially requested 1.9 MAF, which is 45 percent of the total contractors' requests for Table A water. Due to the variability in supply for any given year, it is important to understand the reliability of the SWP to supply a specific amount of water each year to the contractors.

## STORAGE RESERVOIR SUPPLIES

Statewide, storage reservoir levels rise and fall due to seasonal climate changes, which induce increase in demand. During periods of drought, reservoir levels can drop significantly and can limit the amount of supplies available. As a result, both DWR and MWD monitor their reservoir levels regularly. In 2014, conditions of several key reservoirs indicated drought conditions affecting the entire state. As of April 21, 2016, several reservoir levels are below historical average levels as indicated by **Figures 3-12** and **3-13** while other reservoirs are threatening to crest. The reservoirs below historical average levels are south of the Delta and those that could crest are north of the Delta. This contrast is a direct result of the regulatory restrictions constraining DWR from using the pumps in the Delta to move water across the Delta to those reservoirs south of the Delta. The successful completion of the California WaterFix would resolve this issue.

### 3.6.2 MWD'S PROJECTED SUPPLY VS DEMAND COMPARISONS

MWD evaluated supply reliability by projecting supply and demand conditions for the single- and multi-year drought cases based on conditions affecting the SWP (MWD's largest and most variable supply). For this supply source, the single driest-year was 1977 and the three-year dry period was 1990-1992. MWD's analyses are illustrated in **Tables 3-6** and **3-7**, which correspond to Tables 2-1 to 2-6 in MWD's 2015 UWMP. These tables show that the region can provide reliable water supplies not only under normal conditions but also under both the single driest year and the multiple dry year hydrologies.

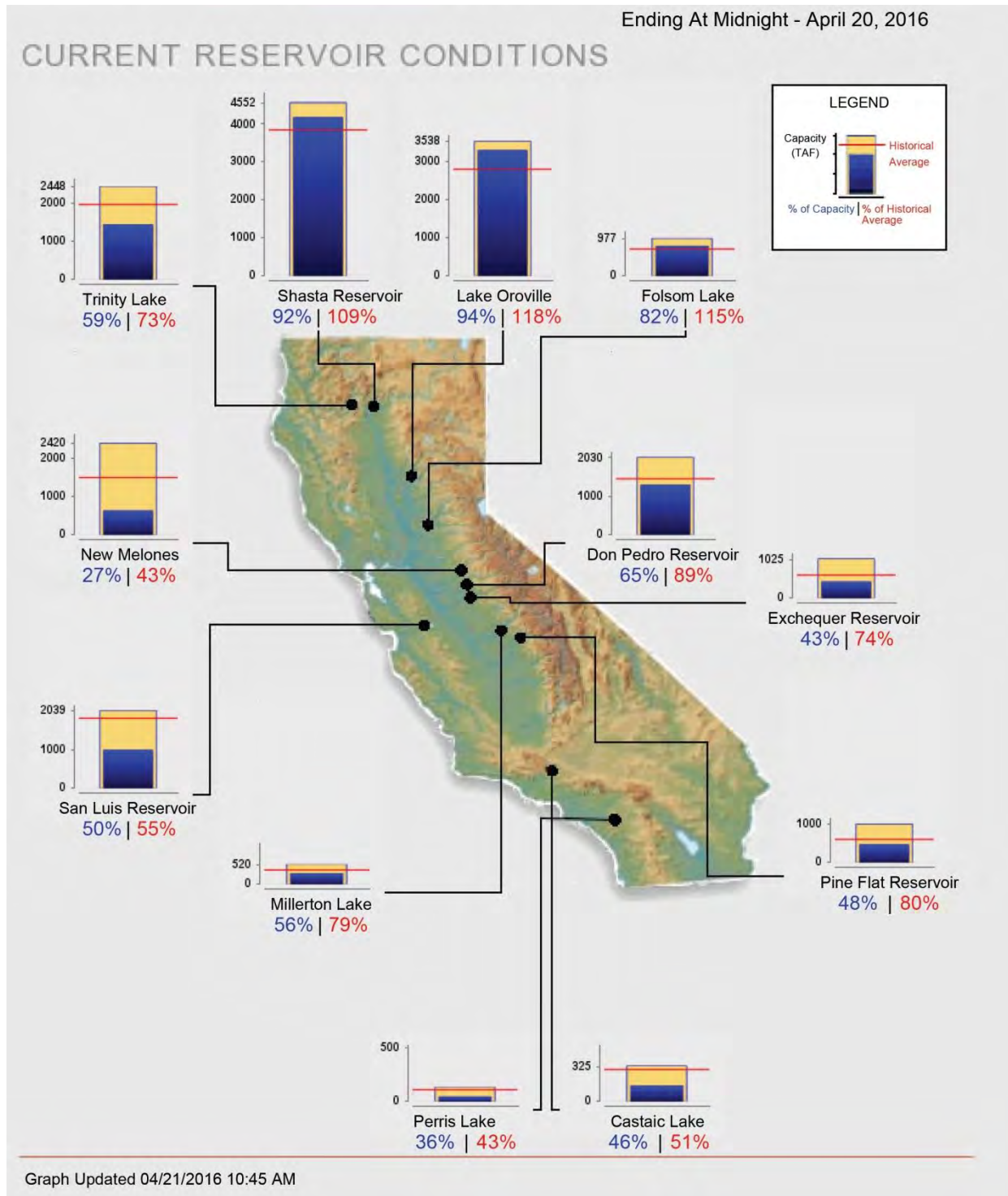


Figure 3-12: California State Reservoir Levels

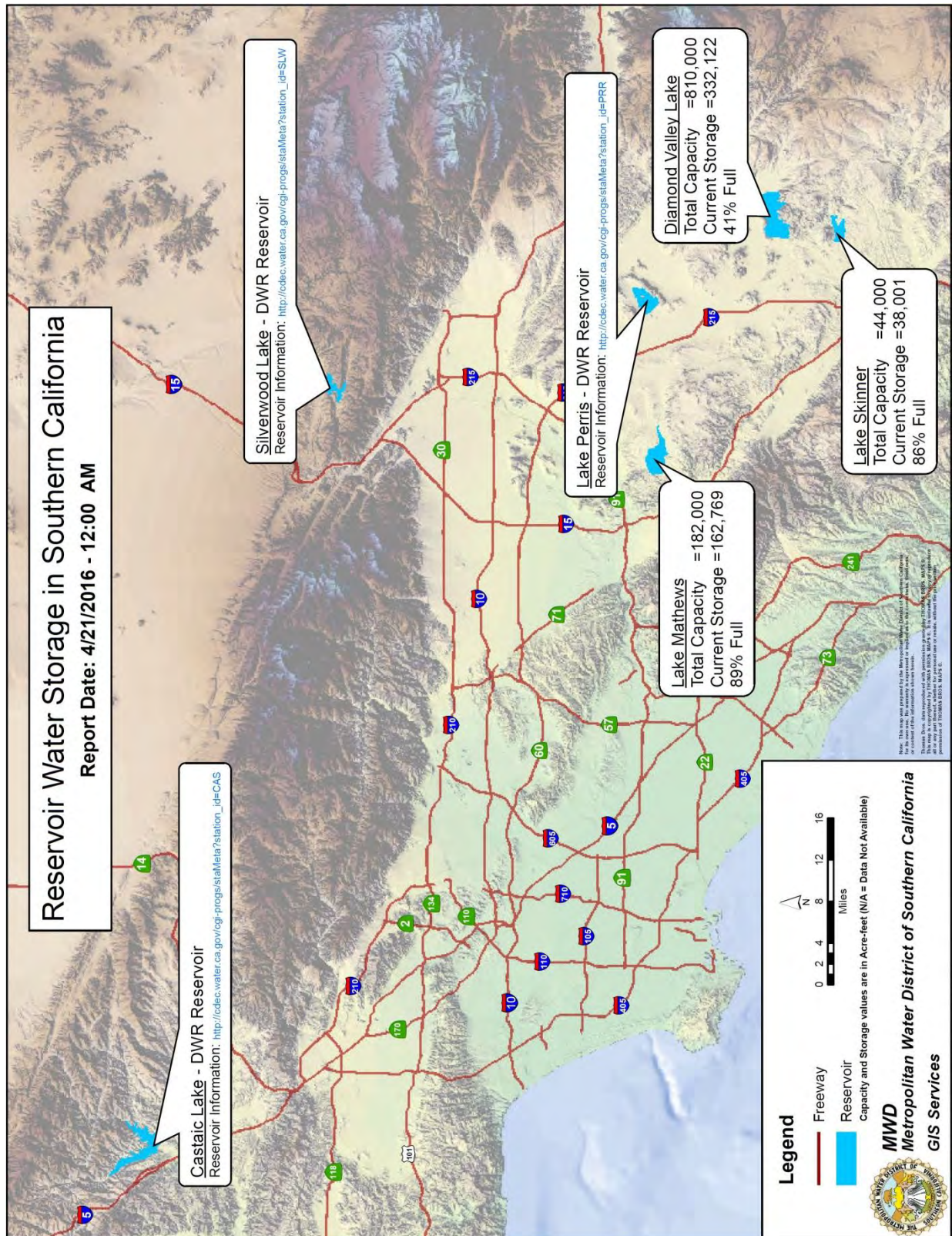


Figure 3-13: MWD Reservoir Levels



**Table 3-6: MWD Regional Imported Water Supply Reliability Projections  
Average and Single Dry Years (AF) for 2020 to 2040**

| Row                               | Region Wide Projections                         | 2020          | 2025          | 2030          | 2035          | 2040          |
|-----------------------------------|-------------------------------------------------|---------------|---------------|---------------|---------------|---------------|
| <b>Supply Information</b>         |                                                 |               |               |               |               |               |
| <b>A</b>                          | Projected Supply: Average Year                  | 3,653,000     | 3,755,000     | 3,925,000     | 4,055,000     | 4,091,000     |
| <b>B</b>                          | Projected Supply: Dry Year                      | 2,537,000     | 2,639,000     | 2,744,000     | 2,874,000     | 2,910,000     |
| <b>C = B/A</b>                    | Projected Dry Yr. / Avg. Yr. Supply (%)         | <b>69.4%</b>  | <b>70.3%</b>  | <b>69.9%</b>  | <b>70.9%</b>  | <b>71.1%</b>  |
| <b>Demand Information</b>         |                                                 |               |               |               |               |               |
| <b>D</b>                          | Projected Average Year Demand                   | 1,860,000     | 1,918,000     | 1,959,000     | 2,008,000     | 2,047,000     |
| <b>E</b>                          | Projected Dry Year Demand                       | 2,005,000     | 2,066,000     | 2,108,000     | 2,160,000     | 2,201,000     |
| <b>F = E/D</b>                    | Projected Dry Year / Avg. Year (%)              | <b>107.8%</b> | <b>107.7%</b> | <b>107.6%</b> | <b>107.6%</b> | <b>107.5%</b> |
| <b>Surplus</b>                    |                                                 |               |               |               |               |               |
| <b>G = A-D</b>                    | Projected Surplus: Average Year                 | 1,793,000     | 1,837,000     | 1,966,000     | 2,047,000     | 2,044,000     |
| <b>H = B-E</b>                    | Projected Surplus: Dry Year                     | 532,000       | 573,000       | 636,000       | 714,000       | 709,000       |
| <b>Programs Under Development</b> |                                                 |               |               |               |               |               |
| <b>I</b>                          | Projected Capability of Programs (Average Year) | 63,000        | 100,000       | 343,000       | 385,000       | 425,000       |
| <b>J</b>                          | Projected Capability of Programs (Dry Year)     | 63,000        | 100,000       | 316,000       | 358,000       | 398,000       |
| <b>Potential Surplus</b>          |                                                 |               |               |               |               |               |
| <b>K=A+I-D</b>                    | Projected Surplus: Average Year                 | 1,856,000     | 1,937,000     | 2,309,000     | 2,432,000     | 2,469,000     |
| <b>L=B+J-E</b>                    | Projected Surplus: Dry Year                     | 532,000       | 573,000       | 636,000       | 714,000       | 709,000       |
| <b>Comparisons</b>                |                                                 |               |               |               |               |               |
| <b>I = A/D</b>                    | Projected Avg. Yr. Supply/Demand (%)            | <b>196.4%</b> | <b>195.8%</b> | <b>200.4%</b> | <b>201.9%</b> | <b>199.9%</b> |
| <b>J = A/E</b>                    | Projected Dry Yr. Supply/Demand (%)             | <b>126.5%</b> | <b>127.7%</b> | <b>130.2%</b> | <b>133.1%</b> | <b>132.2%</b> |

**Table 3-7: MWD Regional Imported Water Supply Reliability Projections**  
**Average and Multiple Dry Years (AF) for 2020 to 2040**

| Row                               | Region Wide Projections                              | 2020          | 2025          | 2030          | 2035          | 2040          |
|-----------------------------------|------------------------------------------------------|---------------|---------------|---------------|---------------|---------------|
| <b>Supply Information</b>         |                                                      |               |               |               |               |               |
| <b>A</b>                          | Projected Supply: Average Year                       | 3,653,000     | 3,755,000     | 3,925,000     | 4,055,000     | 4,091,000     |
| <b>B</b>                          | Projected Supply: Multiple Dry Year                  | 2,151,000     | 2,202,000     | 2,246,000     | 2,298,000     | 2,316,000     |
| <b>C = B/A</b>                    | Proj. Mult. Dry Yr. / Avg. Yr. Supply (%)            | <b>58.9%</b>  | <b>58.6%</b>  | <b>57.2%</b>  | <b>56.7%</b>  | <b>56.6%</b>  |
| <b>Demand Information</b>         |                                                      |               |               |               |               |               |
| <b>D</b>                          | Projected Average Year Demand                        | 1,860,000     | 1,918,000     | 1,959,000     | 2,008,000     | 2,047,000     |
| <b>E</b>                          | Projected Dry Year Demand                            | 2,001,000     | 2,118,000     | 2,171,000     | 2,216,000     | 2,258,000     |
| <b>F = E/D</b>                    | Projected Dry Year / Average Year (%)                | <b>107.6%</b> | <b>110.4%</b> | <b>110.8%</b> | <b>110.4%</b> | <b>110.3%</b> |
| <b>Surplus</b>                    |                                                      |               |               |               |               |               |
| <b>G = A-D</b>                    | Projected Surplus: Average Year                      | 1,793,000     | 1,837,000     | 1,966,000     | 2,047,000     | 2,044,000     |
| <b>H = B-E</b>                    | Projected Surplus: Multiple Dry Year                 | 150,000       | 84,000        | 75,000        | 82,000        | 58,000        |
| <b>Programs Under Development</b> |                                                      |               |               |               |               |               |
| <b>I</b>                          | Projected Capability of Programs (Average Year)      | 63,000        | 100,000       | 343,000       | 385,000       | 425,000       |
| <b>J</b>                          | Projected Capability of Programs (Multiple Dry Year) | 43,000        | 80,000        | 204,000       | 245,000       | 286,000       |
| <b>Potential Surplus</b>          |                                                      |               |               |               |               |               |
| <b>K=A+I-D</b>                    | Projected Surplus: Average Year                      | 1,856,000     | 1,937,000     | 2,309,000     | 2,432,000     | 2,469,000     |
| <b>L=B+J-E</b>                    | Projected Surplus: Multiple Dry Year                 | 150,000       | 84,000        | 75,000        | 82,000        | 58,000        |
| <b>Comparisons</b>                |                                                      |               |               |               |               |               |
| <b>I = A/D</b>                    | Projected Avg. Yr. Supply/Demand (%)                 | <b>196.4%</b> | <b>195.8%</b> | <b>200.4%</b> | <b>201.9%</b> | <b>199.9%</b> |
| <b>J = A/E</b>                    | Projected Dry Yr. Supply/Demand (%)                  | <b>107.5%</b> | <b>104.0%</b> | <b>103.5%</b> | <b>103.7%</b> | <b>102.6%</b> |

### 3.7 CVWD'S SUPPLY RELIABILITY

#### 3.7.1 OVERVIEW

It is required that every urban water supplier assess the reliability to provide water service to its customers under normal, dry, and multiple dry water years. CVWD depends on a combination of imported and local supplies to meet its water demands and has taken numerous steps to ensure that it has adequate supplies.

#### 3.7.2 IMPORTED WATER RELIABILITY

MWD is participating in the development of groundwater, groundwater recovery, recycled water systems, desalination opportunities, and collection of urban return flows to augment the reliability of the imported water system. There are various factors that may impact reliability of supplies, such as legal, environmental, water quality, and climatic, which are discussed below. The water supplies are projected to meet full-service demands; MWD's 2015 UWMP finds that MWD is able to meet with existing supplies full service demands of its member agencies in 2020 through 2040 during normal years, single dry year, and multiple dry years.

MWD's 2015 Integrated Water Resources Plan (IRP) update describes the core water resource strategy that will be used to meet full-service demands at the retail level under all foreseeable hydrologic conditions from 2020 through 2040. The foundation of MWD's resource strategy for achieving regional water supply reliability has been to develop and implement water resources programs and activities through its IRP preferred resource mix. This preferred resource mix includes conservation, local resources, such as water recycling and groundwater recovery, Colorado River supplies and transfers, SWP supplies and transfers, in-region surface reservoir storage, in-region groundwater storage, out-of-region banking, treatment, conveyance and infrastructure improvements. FMWD is reliant on MWD for all of its imported water. With the addition of planned supplies under development, MWD's 2015 UWMP finds that MWD will be able to meet full-service demands from 2020 through 2040, even under a repeat of the worst drought. **Table 3-8** shows the reliability of the MWD's supply for single dry year and multiple dry year scenarios.

**Table 3-8: Wholesaler Supply Reliability - Percent of Normal AFY**

| Wholesaler Sources | Single Dry | Multiple Dry Water Years |        |        |
|--------------------|------------|--------------------------|--------|--------|
|                    |            | Year 1                   | Year 2 | Year 3 |
| MWD                | 100%       | 100%                     | 100%   | 100%   |

In addition to meeting full-service demands from 2020 through 2040, MWD projects reserve and replenishment supplies to refill system storage. **Table 3-9** shows the basis of water year data used to predict MWD's drought supply availability.

**Table 3-9: Basis of Water Year Data**

| Water Year Type         | Base Year           | Base Year | Base Year |
|-------------------------|---------------------|-----------|-----------|
| Normal Water Year       | Average 1922 – 2004 |           |           |
| Single-Dry Water Year   | 1977                |           |           |
| Multiple-Dry Water Year | 1990                | 1991      | 1992      |

### 3.7.3 FACTORS CONTRIBUTING TO CVWD'S IMPORTED WATER SUPPLY RELIABILITY

The Act requires a description of the reliability of the water supply and vulnerability to seasonal or climatic shortage. The following are some of the factors identified by MWD which may have an impact on the reliability of MWD supplies.

**Environment** - Endangered species protection needs in the Sacramento-San Joaquin River Delta have resulted in operational constraints to the SWP system. The Bay-Delta's declining ecosystem caused by agricultural runoff, operation of water pumps, and other factors has led to historical restrictions in SWP supply deliveries. SWP and CVP delivery restrictions due to the biological opinions have reduced SWP and CVP supplies by approximately 5.2 MAF since in 2008.

**Legal** - Listings of additional species under the Endangered Species Act and new regulatory requirements could further impact SWP operations by requiring additional export reductions, releases of additional water from storage, or other operational changes impacting water supply operations. Additionally, any challenges to the QSA in the court systems may have impacts on the Imperial Irrigation District and San Diego

County Water Authority transfer. If there are negative impacts, San Diego could become more dependent on the Metropolitan supplies. One such challenge was settled in 2013 upholding the validity of the QSA.

**Water Quality** - Water imported from the CRA contains high levels of salts. The operational constraint is that this water needs to be blended with SWP supplies to meet the target salinity of 500 mg/L of TDS. Another water quality concern is related to the quagga mussel. Controlling the spread and impacts of quagga mussels within the CRA requires extensive maintenance and results in reduced operational flexibility.

**Climate Change** - Changing climate patterns are expected to shift precipitation patterns and affect water supply. Unpredictable weather patterns will make water supply planning even more challenging. The areas of concern for California include the reduction in Sierra Nevada snowpack, increased intensity and frequency of extreme weather events, and rising sea levels causing increased risk of levee failure.

Legal, environmental, and water quality issues may have impacts on MWD supplies. It is believed, however, that climatic factors would have more of an impact than the others. Climatic conditions have been projected based on historical patterns; however, severe pattern changes may occur in the future. **Table 3-10** shows the factors that may affect inconsistency of supply. These and other factors are addressed in greater detail in MWD's 2015 UWMP.

**Table 3-10: Factors Which May Affect Inconsistency of Supply**

| Name of Supply      | Legal | Environmental | Water Quality | Climatic |
|---------------------|-------|---------------|---------------|----------|
| State Water Project | X     | X             | X             | X        |
| Colorado River      |       |               | X             | X        |

### 3.7.4 CVWD'S PROJECTED SUPPLY VS DEMAND COMPARISONS

To project future supply and demand comparisons, it will be assumed that demand will increase annually based on population growth and a constant of 110 GPCD in accordance with SBx7-7 requirements. During times of drought, however, demand will increase at a time when supply will decrease. To project demands during drought periods, the following factors measured from actual demand data from dry years 2013

to 2015 will be assumed:

- **Single Dry Year Demand Increase:** 94% of Normal
- **Multiple Dry Year Demand Increases (Years 1, 2, & 3):** 103%, 97%, 80% of Normal

**Tables 3-11 to 3-17**, shown on the following pages, provide an analysis of CVWD's supply and demand projections.

Based on the data contained in **Tables 3-11 to 3-17**, CVWD can expect to meet future demands through 2040 for all climatologic classifications. Projected groundwater supply capacities are not expected to be significantly affected during times of low rainfall and over short term dry periods of up to three years; however, during prolonged periods of drought, CVWD's imported water supply capacities may potentially be reduced significantly due to reductions in MWD's storage reservoirs resulting from increases in regional demand.



**Table 3-11: CVWD's Water Supply Availability & Demand Projections  
Normal Water Year (AF)**

| Water Sources                         | 2020         | 2025         | 2030         | 2035         | 2040         |
|---------------------------------------|--------------|--------------|--------------|--------------|--------------|
| <b>Population</b>                     |              |              |              |              |              |
| Water Service Area Population         | 33,203       | 34,041       | 34,901       | 35,782       | 36,686       |
| <b>Supply</b>                         |              |              |              |              |              |
| Imported Water                        | 2,154        | 2,154        | 2,154        | 2,154        | 2,154        |
| Groundwater                           | 3,854        | 3,854        | 3,854        | 3,854        | 3,854        |
| <b>Total Supply</b>                   | <b>6,008</b> | <b>6,008</b> | <b>6,008</b> | <b>6,008</b> | <b>6,008</b> |
| <b>Demand</b>                         |              |              |              |              |              |
| <b>Total Normal Demand</b>            | <b>4,091</b> | <b>4,194</b> | <b>4,300</b> | <b>4,409</b> | <b>4,520</b> |
| % of 2011-2015 Avg. Demand<br>(4,358) | 93.8%        | 96.2%        | 98.7%        | 101.2%       | 103.7%       |
| <b>Supply/Demand Comparison</b>       |              |              |              |              |              |
| Supply/ Demand Difference             | 1,917        | 1,814        | 1,708        | 1,599        | 1,488        |
| Supply/Demand (%)                     | 146.9%       | 143.2%       | 139.7%       | 136.3%       | 132.9%       |

Table is intended only to show CVWD has the capacity to meet demand for all years per the following\*:

1. Total Demand based on 110 GPCD (SBx7-7) multiplied by population projections shown above.
2. Imported Water Supply represents supply available to CVWD, if needed, based on the CVWD's FMWD's Tier 1 Limit of 2,154 AFY.
3. Groundwater Supplies based on the CVWD's adjudicated rights of 3,294 AF and 600 AF from Glendale during a normal year.

*\*This Table not intended to be a projection of CVWD's actual groundwater production. CVWD may pump amounts different (above or below) from the amount that is shown.*

*\*This Table is not intended to be a projection of CVWD's actual demand. Demand of 110 GPCD is based on SBx7-7 limits. Actual demand may be above or below the SBx7-7 limit of 110 GPCD in accordance with water usage needs in the service area.*

**Table 3-12: CVWD's Water Supply Availability & Demand Projections  
Single Dry Year (AF)**

| Water Sources                   | 2020         | 2025         | 2030         | 2035         | 2040         |
|---------------------------------|--------------|--------------|--------------|--------------|--------------|
| <b>Population</b>               |              |              |              |              |              |
| Water Service Area Population   | 33,203       | 34,041       | 34,901       | 35,782       | 36,686       |
| <b>Supply</b>                   |              |              |              |              |              |
| Imported Water                  | 2,154        | 2,154        | 2,154        | 2,154        | 2,154        |
| Groundwater                     | 3,083        | 3,083        | 3,083        | 3,083        | 3,083        |
| <b>Total Supply</b>             | <b>5,237</b> | <b>5,237</b> | <b>5,237</b> | <b>5,237</b> | <b>5,237</b> |
| Normal Year Supply              | 6,008        | 6,008        | 6,008        | 6,008        | 6,008        |
| % of Normal Year                | 87.2%        | 87.2%        | 87.2%        | 87.2%        | 87.2%        |
| <b>Demand</b>                   |              |              |              |              |              |
| <b>Total Dry Demand</b>         | <b>3,834</b> | <b>3,931</b> | <b>4,030</b> | <b>4,132</b> | <b>4,236</b> |
| Normal Year Demand              | 4,091        | 4,194        | 4,300        | 4,409        | 4,520        |
| % of Normal Year                | 93.7%        | 93.7%        | 93.7%        | 93.7%        | 93.7%        |
| <b>Supply/Demand Comparison</b> |              |              |              |              |              |
| Supply/Demand Difference        | 1,403        | 1,306        | 1,207        | 1,105        | 1,001        |
| Supply/Demand (%)               | 136.6%       | 133.2%       | 129.9%       | 126.7%       | 123.6%       |

Table is intended only to show CVWD will be able to meet demand for all years per the following\*:

1. Total Demand based on 110 GPCD (SBx7-7) multiplied by population projections shown above and by multiple dry year increases of 103%, 97%, and 80%.
2. All other items derived in similitude to Table 3-11.
3. Groundwater Supplies based on the CVWD's adjudicated rights of 3,294 AF and 600 AF from Glendale during a normal year.

\*See notes below Table 3-11 for explanation of groundwater supply / overall demand.



**Table 3-13: CVWD's Water Supply Availability & Demand Projections  
Multiple Dry Years (2016-2020) (AF)**

| Water Sources                   | 2016                | 2017         | 2018                      | 2019         | 2020         |
|---------------------------------|---------------------|--------------|---------------------------|--------------|--------------|
| <b>Population</b>               |                     |              |                           |              |              |
| Water Service Area Population   | 32,547              | 32,710       | 32,873                    | 33,038       | 33,203       |
| <b>Supply</b>                   |                     |              |                           |              |              |
|                                 | <b>Normal Years</b> |              | <b>Multiple Dry Years</b> |              |              |
| Imported Water                  | 2,154               | 2,154        | 2,154                     | 2,154        | 2,154        |
| Groundwater                     | 2,350               | 2,420        | 2,420                     | 2,420        | 2,470        |
| <b>Total Supply</b>             | <b>4,504</b>        | <b>4,574</b> | <b>4,574</b>              | <b>4,574</b> | <b>4,624</b> |
| Normal Year Supply              | 6,008               | 6,008        | 6,008                     | 6,008        | 6,008        |
| % of Normal Year                | 75.0%               | 76.1%        | 76.1%                     | 76.1%        | 77.0%        |
| <b>Demand</b>                   |                     |              |                           |              |              |
|                                 | <b>Normal Years</b> |              | <b>Multiple Dry Years</b> |              |              |
| <b>Total Demand</b>             | <b>4,010</b>        | <b>4,030</b> | <b>4,187</b>              | <b>3,960</b> | <b>3,293</b> |
| Normal Year Demand              | 4,010               | 4,030        | 4,050                     | 4,071        | 4,091        |
| % of Normal Year                | 100.0%              | 100.0%       | 103.4%                    | 97.3%        | 80.5%        |
| <b>Supply/Demand Comparison</b> |                     |              |                           |              |              |
|                                 | <b>Normal Years</b> |              | <b>Multiple Dry Years</b> |              |              |
| Supply/Demand Difference        | 494                 | 544          | 387                       | 614          | 1,331        |
| Supply/Demand (%)               | 112.3%              | 113.5%       | 109.2%                    | 115.5%       | 140.4%       |

Table is intended only to show CVWD will be able to meet demand for all years per the following\*:

1. Total Demand based on 110 GPCD (SBx7-7) multiplied by population projections shown above and by multiple dry year increases of 103%, 97%, and 80%.

2. All other items derived in similitude to Table 3-11.

*\*See notes below Table 3-11 for explanation of groundwater supply / overall demand.*

**Table 3-14: CVWD's Water Supply Availability & Demand Projections  
Multiple Dry Years (2021-2025) (AF)**

| Water Sources                   | 2021                | 2022         | 2023                      | 2024         | 2025         |
|---------------------------------|---------------------|--------------|---------------------------|--------------|--------------|
| <b>Population</b>               |                     |              |                           |              |              |
| Water Service Area Population   | 33,369              | 33,536       | 33,703                    | 33,872       | 34,041       |
| <b>Supply</b>                   |                     |              |                           |              |              |
|                                 | <b>Normal Years</b> |              | <b>Multiple Dry Years</b> |              |              |
| Imported Water                  | 2,154               | 2,154        | 2,154                     | 2,154        | 2,154        |
| Groundwater                     | 2,560               | 2,660        | 2,760                     | 2,860        | 2,960        |
| <b>Total Supply</b>             | <b>4,714</b>        | <b>4,814</b> | <b>4,914</b>              | <b>5,014</b> | <b>5,114</b> |
| Normal Year Supply              | 6,008               | 6,008        | 6,008                     | 6,008        | 6,008        |
| % of Normal Year                | 78.5%               | 80.1%        | 81.8%                     | 83.5%        | 85.1%        |
| <b>Demand</b>                   |                     |              |                           |              |              |
|                                 | <b>Normal Years</b> |              | <b>Multiple Dry Years</b> |              |              |
| <b>Total Demand</b>             | <b>4,112</b>        | <b>4,132</b> | <b>4,293</b>              | <b>4,060</b> | <b>3,377</b> |
| Normal Year Demand              | 4,112               | 4,132        | 4,153                     | 4,174        | 4,194        |
| % of Normal Year                | 100.0%              | 100.0%       | 103.4%                    | 97.3%        | 80.5%        |
| <b>Supply/Demand Comparison</b> |                     |              |                           |              |              |
|                                 | <b>Normal Years</b> |              | <b>Multiple Dry Years</b> |              |              |
| Supply/Demand Difference        | 602                 | 682          | 621                       | 954          | 1,737        |
| Supply/Demand (%)               | 114.7%              | 116.5%       | 114.5%                    | 123.5%       | 151.5%       |

Table is intended only to show CVWD will be able to meet demand for all years per the following\*:

1. Total Demand based on 110 GPCD (SBx7-7) multiplied by population projections shown above and by multiple dry year increases of 103%, 97%, and 80%.

2. All other items derived in similitude to Table 3-11.

*\*See notes below Table 3-11 for explanation of groundwater supply / overall demand.*



**Table 3-15: CVWD's Water Supply Availability & Demand Projections  
Multiple Dry Years (2026-2030) (AF)**

| Water Sources                   | 2026                | 2027         | 2028                      | 2029         | 2030         |
|---------------------------------|---------------------|--------------|---------------------------|--------------|--------------|
| <b>Population</b>               |                     |              |                           |              |              |
| Water Service Area Population   | 34,211              | 34,382       | 34,554                    | 34,727       | 34,901       |
| <b>Supply</b>                   |                     |              |                           |              |              |
|                                 | <b>Normal Years</b> |              | <b>Multiple Dry Years</b> |              |              |
| Imported Water                  | 2,154               | 2,154        | 2,154                     | 2,154        | 2,154        |
| Groundwater                     | 3,060               | 3,160        | 3,260                     | 3,360        | 3,460        |
| <b>Total Supply</b>             | <b>5,214</b>        | <b>5,314</b> | <b>5,414</b>              | <b>5,514</b> | <b>5,614</b> |
| Normal Year Supply              | 6,008               | 6,008        | 6,008                     | 6,008        | 6,008        |
| % of Normal Year                | 86.8%               | 88.4%        | 90.1%                     | 91.8%        | 93.4%        |
| <b>Demand</b>                   |                     |              |                           |              |              |
|                                 | <b>Normal Years</b> |              | <b>Multiple Dry Years</b> |              |              |
| <b>Total Demand</b>             | <b>4,215</b>        | <b>4,236</b> | <b>4,401</b>              | <b>4,163</b> | <b>3,462</b> |
| Normal Year Demand              | 4,215               | 4,236        | 4,258                     | 4,279        | 4,300        |
| % of Normal Year                | 100.0%              | 100.0%       | 103.4%                    | 97.3%        | 80.5%        |
| <b>Supply/Demand Comparison</b> |                     |              |                           |              |              |
|                                 | <b>Normal Years</b> |              | <b>Multiple Dry Years</b> |              |              |
| Supply/Demand Difference        | 999                 | 1,078        | 1,013                     | 1,351        | 2,152        |
| Supply/Demand (%)               | 123.7%              | 125.4%       | 123.0%                    | 132.5%       | 162.2%       |

Table is intended only to show CVWD will be able to meet demand for all years per the following\*:

1. Total Demand based on 110 GPCD (SBx7-7) multiplied by population projections shown above and by multiple dry year increases of 103%, 97%, and 80%.

2. All other items derived in similitude to Table 3-11.

*\*See notes below Table 3-11 for explanation of groundwater supply / overall demand.*

**Table 3-16: CVWD's Water Supply Availability & Demand Projections  
Multiple Dry Years (2031-2035) (AF)**

| Water Sources                   | 2031                | 2032         | 2033                      | 2034         | 2035         |
|---------------------------------|---------------------|--------------|---------------------------|--------------|--------------|
| <b>Population</b>               |                     |              |                           |              |              |
| Water Service Area Population   | 35,075              | 35,251       | 35,427                    | 35,604       | 35,782       |
| <b>Supply</b>                   |                     |              |                           |              |              |
|                                 | <b>Normal Years</b> |              | <b>Multiple Dry Years</b> |              |              |
| Imported Water                  | 2,154               | 2,154        | 2,154                     | 2,154        | 2,154        |
| Groundwater                     | 3,560               | 3,660        | 3,760                     | 3,854        | 3,854        |
| <b>Total Supply</b>             | <b>5,714</b>        | <b>5,814</b> | <b>5,914</b>              | <b>6,008</b> | <b>6,008</b> |
| Normal Year Supply              | 6,008               | 6,008        | 6,008                     | 6,008        | 6,008        |
| % of Normal Year                | 95.1%               | 96.8%        | 98.4%                     | 100.0%       | 100.0%       |
| <b>Demand</b>                   |                     |              |                           |              |              |
|                                 | <b>Normal Years</b> |              | <b>Multiple Dry Years</b> |              |              |
| <b>Total Demand</b>             | <b>4,322</b>        | <b>4,343</b> | <b>4,512</b>              | <b>4,268</b> | <b>3,549</b> |
| Normal Year Demand              | 4,322               | 4,343        | 4,365                     | 4,387        | 4,409        |
| % of Normal Year                | 100.0%              | 100.0%       | 103.4%                    | 97.3%        | 80.5%        |
| <b>Supply/Demand Comparison</b> |                     |              |                           |              |              |
|                                 | <b>Normal Years</b> |              | <b>Multiple Dry Years</b> |              |              |
| Supply/Demand Difference        | 1,392               | 1,471        | 1,402                     | 1,740        | 2,459        |
| Supply/Demand (%)               | 132.2%              | 133.9%       | 131.1%                    | 140.8%       | 169.3%       |

Table is intended only to show CVWD will be able to meet demand for all years per the following\*:

1. Total Demand based on 110 GPCD (SBx7-7) multiplied by population projections shown above and by multiple dry year increases of 103%, 97%, and 80%.

2. All other items derived in similitude to Table 3-11.

*\*See notes below Table 3-11 for explanation of groundwater supply / overall demand.*

**Table 3-17: CVWD's Water Supply Availability & Demand Projections  
Multiple Dry Years (2036-2040) (AF)**

| Water Sources                   | 2036                | 2037         | 2038                      | 2039         | 2040         |
|---------------------------------|---------------------|--------------|---------------------------|--------------|--------------|
| <b>Population</b>               |                     |              |                           |              |              |
| Water Service Area Population   | 35,961              | 36,141       | 36,321                    | 36,503       | 36,686       |
| <b>Supply</b>                   |                     |              |                           |              |              |
|                                 | <b>Normal Years</b> |              | <b>Multiple Dry Years</b> |              |              |
| Imported Water                  | 2,154               | 2,154        | 2,154                     | 2,154        | 2,154        |
| Groundwater                     | 3,854               | 3,854        | 3,854                     | 3,854        | 3,854        |
| <b>Total Supply</b>             | <b>6,008</b>        | <b>6,008</b> | <b>6,008</b>              | <b>6,008</b> | <b>6,008</b> |
| Normal Year Supply              | 6,008               | 6,008        | 6,008                     | 6,008        | 6,008        |
| % of Normal Year                | 100.0%              | 100.0%       | 100.0%                    | 100.0%       | 100.0%       |
| <b>Demand</b>                   |                     |              |                           |              |              |
|                                 | <b>Normal Years</b> |              | <b>Multiple Dry Years</b> |              |              |
| <b>Total Demand</b>             | <b>4,431</b>        | <b>4,453</b> | <b>4,626</b>              | <b>4,376</b> | <b>3,639</b> |
| Normal Year Demand              | 4,431               | 4,453        | 4,475                     | 4,498        | 4,520        |
| % of Normal Year                | 100.0%              | 100.0%       | 103.4%                    | 97.3%        | 80.5%        |
| <b>Supply/Demand Comparison</b> |                     |              |                           |              |              |
|                                 | <b>Normal Years</b> |              | <b>Multiple Dry Years</b> |              |              |
| Supply/Demand Difference        | 1,577               | 1,555        | 1,382                     | 1,632        | 2,369        |
| Supply/Demand (%)               | 135.6%              | 134.9%       | 129.9%                    | 137.3%       | 165.1%       |

Table is intended only to show CVWD will be able to meet demand for all years per the following\*:

1. Total Demand based on 110 GPCD (SBx7-7) multiplied by population projections shown above and by multiple dry year increases of 103%, 97%, and 80%.

2. All other items derived in similitude to Table 3-11.

\*See notes below Table 3-11 for explanation of groundwater supply / overall demand.

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# SECTION 4: CONSERVATION MEASURES



*As a member of CUWCC, CVWD has committed to good faith efforts to implement water conservation measures. CVWD has continued to work with FMWD and MWD to implement all five Best Management Practices to the extent possible.*



## SECTION 4: CONSERVATION MEASURES

### 4.1 OVERVIEW

As a result of diminished existing supplies and difficulty in developing new supplies, water conservation is important to Southern California's sustainability. Agencies statewide acknowledge that efficient water use is the foundation of its current and future water planning and operations policies.

To conserve California's water resources, several public water agencies and other interested parties of the California Urban Water Conservation Council (CUWCC) drafted the Memorandum of Understanding Regarding Urban Water Conservation (MOU) in 1991. At that time, the MOU established 14 Best Management Practices (BMPs), which are defined roughly as policies, programs, practices, rules, regulations, or ordinances resulting in the more efficient use or conservation of water. Demand Management Measures (DMMs), as defined by the UWMP Act, correspond for the most part to the CUWCC's BMPs.

This section of the UWMP satisfies the requirements of § 10631 (f) & (j) of the CWC and describes how each DMM is being implemented by CVWD and how CVWD evaluates the effectiveness of the DMMs implemented. This section also provides an estimate of existing conservation savings where information is available.

#### 4.1.1 UPDATES TO DMMS FOR 2015 UWMPs

In previous years, the 14 CUWCC BMPs coincided almost entirely with the 14 DMMs defined in the UWMP Act. The DMMs are intended to reduce long-term urban demands from what they would have been without DMM implementation. The DMMs are in addition to programs which may be instituted during occasional water supply shortages.

For the 2015 UWMPs, the DWR has refined the list of DMMs required to be reported in the 2015 UWMPs as follows:

- **DMM 1:** *Water Waste Prohibition Ordinances*
- **DMM 2:** *Metering*
- **DMM 3:** *Conservation Pricing*
- **DMM 4:** *Public Education & Outreach*
- **DMM 5:** *Programs to Assess and Manage Distribution System Real Loss*
- **DMM 6:** *Water Conservation Program Coordination and Staffing Support*
- **DMM 7:** *Other Demand Management Measures (which have a significant impact on water use as measured in GPCD, including innovative measures, if implemented)*

As with previous UWMPs, agencies that are members of the CUWCC can submit the annual reports in lieu of providing details on the agency's DMMs. That is, in lieu of providing a description of each DMM, agencies can provide data on recent implementation and provide plans for future implementation.

#### 4.1.2 UPDATES TO CUWCC BMPS

As with the DMMs, the CUWCC BMPs have changed for CUWCC members. The BMPs are now listed as:

- **BMP 1:** *Utility Operations*
- **BMP 2:** *Public Education & Outreach*

- **BMP 3:** *Residential Programs*
- **BMP 4:** *Commercial, Institutional, and Industrial Programs*
- **BMP 5:** *Landscape Programs*

## 4.2 CVWD CONSERVATION PROGRAMS

CVWD recognizes the importance of water conservation and has made water use efficiency an integral part of water use planning. In 2012, CVWD became a signatory to the CUWCC by signing the MOU. As a member of CUWCC, CVWD is required to submit Bi-Annual Reports to the CUWCC which document the implementation of each BMP. As Signatory to the CUWCC MOU, CVWD has committed to use good-faith efforts to implement all applicable BMPs. CVWD has maintained compliance with the BMPs since becoming a signatory. CVWD actively implements all of the measures with good faith effort by achieving and maintaining the staffing, funding, and in general, the priority levels necessary to achieve the level of activity called for in each BMP's definition as described in the MOU. Water conservation is an integral part of the CVWD's water policies.

CVWD, in conjunction with FMWD and MWD, plays an active role in promoting water use efficiency in its service area. To this end, CVWD established Water Conservation Program (Phase I), which was adopted by the Board of Directors in April 2015 as Resolution No. 682, originally adopted in 2009. To this day, CVWD is continuously working with FMWD and MWD towards implementing the DMMs through means of various conservation measures.

**Table 4-1** on the following page provides a status overview of CVWD's Conservation Measures.

**Table 4-1: CVWD Conservation Measures**

| BMP                                                     | Description                                                                                                                                                                           |
|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BMP 1: Utility Operations                               | <i>Deals with water waste prohibitions, water efficiency ordinances, metering, conservation pricing, and other items related to managing water use.</i>                               |
| BMP 2: Public Education & Outreach                      | <i>Deals with outreach efforts including emails, newsletters, advertisements, presentations, promotions, etc. related to outreach &amp; education.</i>                                |
| BMP 3: Residential Programs                             | <i>Deals with showerheads, faucets, toilets, turf removal, and leak detection surveys related to residential water use.</i>                                                           |
| BMP 4: Commercial, Industrial, & Institutional Programs | <i>Deals with toilets, urinals, steamers, cooling towers, food/restaurant equipment, medical equipment, and items related to commercial, institutional, and industrial water use.</i> |
| BMP 5: Landscape Programs                               | <i>Deals with establishing parameters for large landscapes, including measurements, budgets, audits, prohibitions, incentives, etc., related to large landscapes.</i>                 |
| Other                                                   | Any additional BMPs supported by CVWD are listed on the following pages.                                                                                                              |

#### 4.2.1 BMP 1: UTILITY OPERATIONS (NOW CORRESPONDS WITH DMMs 1, 2, 3, 5, & 6)

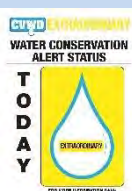
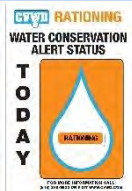
This CUWCC BMP deals with water waste prohibitions, water efficiency ordinances, metering, conservation pricing, and other items related to managing water use.

#### **WATER WASTE PROHIBITION ORDINANCE**

CVWD adopted Water Conservation Alert System (Resolution No. 681) and Water Conservation Program (Phase I) (Resolution No. 682) as water conservation ordinances.

***Water Conservation Alert System*** – The Water Conservation Alert System has been amended as a Phase II of the goal to reduce the risk and severity of water shortages and to notify its customers of the current conservation stage. The stages are color coded and described in **Table 4-2**.

**Table 4-2: Water Conservation Alert System Codes**

| Alert Sign                                                                          | Code   | Description (as mentioned in Res. No. 681)                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | Blue   | Color Code “Blue” is defined as the <u>Normal Water Conservation Alert</u> , FMWD can meet all Member Agency demands. Standard water conservation applies as defined in Appendix G of CVWD’s Rules and Regulations                                                                                                                                                                                               |
|    | Green  | Color Code “Green” is defined as an <u>Increased Voluntary Conservation Alert</u> , some supplies have been impacted and customers should increase efforts to conserve by following strict water conservation practices indoors and limiting outdoor water use to odd or even days, based on ending number of customer address.                                                                                  |
|    | Yellow | Color Code “Yellow” is defined as an <u>Extraordinary Conservation Alert</u> , when MWD is pulling water from most of its storage programs to meet demands. Extraordinary conservation is called for from customers. Customers are requested to minimize indoor water use and water outdoors no more than three (3) days per week. Outdoor irrigation will be permitted only on Tuesday, Thursday, and Saturday. |
|   | Orange | Color Code “Orange” is defined as a <u>Rationing Conservation Alert</u> , when MWD has implemented its allocation plan to its member agencies. Customers are requested to minimize indoor water use and severely limit outdoor water use as further detailed in Appendix G of CVWD’s Rules and Regulations. <b>Currently (2016), CVWD has issued this alert as its current conservation status.</b>              |
|  | Red    | Color Code “Red” is defined as a <u>Critical Water Conservation Alert</u> , when water supplies are only available for health and safety needs. Customers are requested to minimize indoor water use and curtail all outdoor water use as further detailed in Appendix G of CVWD’s Rules and Regulations                                                                                                         |

**Water Conservation Program (Phase I)** – The Water Conservation Program (Phase I) was amended in April 2015 stating waste water prohibitions to its customers. The prohibitions apply to the following:

- Water hose usage
- Leaks
- Windy and rainy days
- Construction water restrictions
- Hotels/Motels
- Prohibiting outdoor watering during or 48 hours following a rain event
- Overspray and Runoff
- Irrigation Times
- Vehicle Washing
- Fire hydrants
- Reporting of waste water
- New Development
- Fountains
- Hand Watering
- Swimming pools
- Drinking water
- Pre-rinse spray valve

Detailed description of each prohibition is shown in **Section 5.5: Prohibitions, Penalties, and Consumption Reduction Methods**.



**Figure 4-1: Water Waste is Prohibited by District Ordinance**

CVWD Rules and Regulations contain a Water Waste Prohibition Policy allowing termination of water service to customers who do not comply with a notice to remedy their wasteful practice. Additionally, the Rules and Regulations contain a leak repair policy whereby a financial incentive (one-time bill adjustment) is provided for customers who promptly fix internal/external plumbing leaks. The aforementioned sections of the Rules & Regulations are included in **Appendix C**.

The Water Conservation Specialist works cooperatively with property owners to reduce water waste. CVWD's billing software automatically flags high usage thresholds from meter reading data for additional staff follow-up. Also, CVWD's field staff reports all visible water waste situations observed to Customer Service for additional follow-up by CVWD's Water Conservation Specialist.

CVWD has not conducted an evaluation of the water savings attributable to this DMM.

## METERING

All CVWD water accounts are metered and billed bi-monthly based on commodity rates. CVWD has a commodity rate structure based upon a billing unit of 1,000 gallons, commonly stated as a unit. The water rate structure is a four-tier increasing block rate. A summary of the water rates is shown in **Table 4-3**.

CVWD is currently on a Meter Replacement Program in efforts to replace over 3,600 meters within the service area installed before 1996. CVWD began the program in mid-2012 with a water loss of 12 percent from the total water consumption. CVWD anticipates that all of the meters will be replaced by June 2020 with a water loss of at least 7 percent to 8 percent per year. Once this current set of meters has been replaced, CVWD will reevaluate the program to determine the next set of meters to be replaced.

## CONSERVATION PRICING

All of CVWD's utility water accounts are metered and billed bi-monthly based on commodity rates. CVWD has a commodity rate structure based upon a billing unit of 1,000 gallons, commonly abbreviated as a unit.

CVWD operates a domestic sewage collection system for its customers. CVWD's sewer service rates are a fixed (non-commodity) bi-monthly fee for residential customers but are based upon water usage for commercial customers (commodity-based). Schools are charged for sewer service based upon average daily attendance (indirect commodity based).

CVWD does offer a water conservation pricing incentive to any sewer customer sector. A 10 percent discount off of the customer's sewer fees are applied in a bi-monthly billing period where the residential or commercial account water used during that period are at 12 billing units or less (less than or equal to 12,000 gallons). There is currently no accurate method to assess the water savings being accomplished by this DMM.

CVWD also offers a senior low-income 20 percent discount on all water/sewer bills up to 26 units per billing cycle where the single family dwelling account holder meets specific age and annual income criteria.

CVWD has not conducted an evaluation of the water savings attributable to this DMM, however, CVWD will continue to make customers aware of the rate structure and use it as a tool to affect water conservation. CVWD also has plans to establish a new sewer rate structure, which would provide further conservation incentives to customers.

Since the 2010 UWMP, CVWD has increased their rates towards efforts of water conservation. **Table 4-3** below provides a summary of CVWD's water and sewer rate structures. **Table 4-4** provides a summary of the rates stated in the 2010 UWMP for comparison.

**Table 4-3: Current Water and Sewer Rates**

| Water Rate Structure                                | Water Rate<br>(as of 7/1/2015) | Sewer Rate Structure                                | Sewer Rate<br>(as of 7/1/2014) |
|-----------------------------------------------------|--------------------------------|-----------------------------------------------------|--------------------------------|
| Single-Family                                       |                                |                                                     |                                |
| Four-Tier Structure:                                |                                | Flat Rate                                           | \$67.50                        |
| Tier 1: 0 – 10 Units                                | \$4.61/unit                    |                                                     |                                |
| Tier 2: 11 – 25 Units                               | \$5.96/unit                    |                                                     |                                |
| Tier 3: 26 – 37 Units                               | \$8.50/unit                    |                                                     |                                |
| Tier 4: 38 + Units                                  | \$11.39/unit                   |                                                     |                                |
| Multi-Family                                        |                                |                                                     |                                |
| > 0 Units                                           | \$5.96/Unit                    | Flat Rate                                           | \$67.50                        |
| Commercial/Institutional                            |                                |                                                     |                                |
| > 0 Units                                           | \$5.96/Unit                    | Customer Charge                                     | \$2.10                         |
|                                                     |                                | Quantity Charger per 1000 Gal of Water Usage        | \$5.50                         |
|                                                     |                                | Minimum Charge for Each Commercial User             | \$67.50                        |
| Schools                                             |                                |                                                     |                                |
| Primary Schools based on Average Daily Attendance   | \$4.53/unit                    | Primary Schools based on Average Daily Attendance   | \$81.00/100 students           |
|                                                     |                                | Customer Charge                                     | \$2.10                         |
| Secondary Schools based on Average Daily Attendance | \$4.53/unit                    | Secondary Schools based on Average Daily Attendance | \$81.00/100 students           |
|                                                     |                                | Customer Charge                                     | \$2.10                         |
| Irrigation                                          |                                |                                                     |                                |
| Tier 1: 1 – 70 Units                                | \$5.96/unit                    | Not Applicable                                      | Not Applicable                 |
| Tier 2: 71 + Units                                  | \$11.39/unit                   |                                                     |                                |

**Table 4-4: Past 2010 UWMP Water and Sewer Rates**

| Water Rate Structure                                | Water Rate (as of 1/2011) | Sewer Rate Structure                                | Sewer Rate (as of 1/1/2010) |
|-----------------------------------------------------|---------------------------|-----------------------------------------------------|-----------------------------|
| Residential                                         |                           |                                                     |                             |
| Four- Tier Structure:                               |                           | Flat Rate                                           | \$55.00/mo.                 |
| Tier 1: 1 – 10 Units                                | \$3.60/unit               |                                                     |                             |
| Tier 2: 11 – 33 Units                               | \$4.53/unit               |                                                     |                             |
| Tier 3: 34 – 50 Units                               | \$5.95/unit               |                                                     |                             |
| Tier 4: 51 + Units                                  | \$7.45/unit               |                                                     |                             |
| Commercial/Institutional                            |                           |                                                     |                             |
| > 0 Units                                           | \$4.53/Unit               | Customer Charge                                     | N/A                         |
|                                                     |                           | Quantity Charger per 1000 Gal of Water Usage        | N/A                         |
|                                                     |                           | Minimum Charge for Each Commercial User             | N/A                         |
| Schools                                             |                           |                                                     |                             |
| Primary Schools based on Average Daily Attendance   | \$4.53/unit               | Primary Schools based on Average Daily Attendance   | \$66.00/100 students        |
|                                                     |                           | Customer Charge                                     | \$2.10                      |
| Secondary Schools based on Average Daily Attendance | \$4.53/unit               | Secondary Schools based on Average Daily Attendance | \$132.10/100 students       |
|                                                     |                           | Customer Charge                                     | \$2.10                      |
| Irrigation                                          |                           |                                                     |                             |
| Tier 1: 1 – 70 Units                                | \$4.53/unit               | Not Applicable                                      | Not Applicable              |
| Tier 2: 71 + Units                                  | \$7.45/unit               |                                                     |                             |

#### PROGRAMS TO ASSESS AND MANAGE DISTRIBUTION SYSTEM REAL LOSS

CVWD monitors water loss in its distribution system on an annual basis. It is CVWD's highest priority to repair all known distribution system and service connection leaks immediately. In the past five years, non-revenue water averaged 10.3 percent.

A significant portion of non-revenue water could be attributed to meter inaccuracy. As mentioned previously on page 4-7, CVWD embarked on a meter replacement program starting mid-June 2012 to replace 3,600 meters installed prior to 1996. The replacement is expected to be completed by June 2020. CVWD plans to reassess the program and will determine the next set of meters to be replaced.

It appears that distribution system leaks are the most-likely culprit for loss of water. CVWD has and will be continuing on its water main replacement program and is planning on a 20-year schedule to replace its deficient pipelines. CVWD prioritized its pipe replacement program by leak history, pipe size, fire-flow rates, and age. CVWD will be completing a new water master plan, which will further address deficiencies in the system.

CVWD has not developed a formal methodology to estimate the water savings attributable to this DMM. There are, however, real water savings as a result of the proactive pre-screening leak detection and repair programs which maintain an acceptable non-revenue water loss of 8 percent.

#### **4.2.2 BMP 2: PUBLIC EDUCATION & OUTREACH (NOW CORRESPONDS WITH DMM 4)**

This CUWCC BMP deals with outreach efforts including emails, newsletters, advertisements, presentations, promotions, etc., related to outreach & education.

##### **SCHOOL PROGRAMS**

All of CVWD's public schools fall under the Glendale Unified School District. GWP has made a strong commitment to support educational excellence in the Glendale Unified schools. With this in mind, GWP provides "LivingWise", a water and energy classroom program to sixth grade students in both public and private Glendale schools.

The program was created by a group of teachers for the National Energy Foundation. It is a comprehensive set of 17 hands-on learning activities that use science and other core subjects so that "LivingWise" means being "water wise", "energy wise", and making "wise decisions" to protect the environment.

Each teacher and student receives a LivingWise 86-page workbook and a kit filled with such items as low-flow showerheads, kitchen faucet aerators and toilet leak detection tablets as well as an energy efficient nightlight, a fluorescent light bulb and a CD-Rom computer disk with a "conservation entertainment experience". Because many of the lessons require the students to complete an activity at home, parents and other family members learn conservation practices right along with their students. At the end of the program, the students practice what they have learned by installing the water and

energy saving kit items in their homes.

In addition to Glendale's program, CVWD sponsors school assemblies from "Shows that Teach" and "Mad Science" for both public and private schools. Both assemblies offer different interactive lessons that always include water conservation and are geared towards the water cycle, water runoff, water quality, and water supplies and distribution systems. Each elementary school in CVWD's service area is invited to participate every year.

Currently, CVWD does not have a method to evaluate the water savings attributable to this DMM, however, CVWD will continue to administer this DMM for its ability to educate and interact with customers.

FMWD also offers volunteering opportunities, called Foothill Water Conservation Corps, to assist in water conservation and education outreach. These volunteers will participate in presentations for water conservation at clubs or events, setting up and manning booths at fairs and other community functions. Not only does this aid in spreading awareness but provides incentives for students to earn community service hours at a professional setting.

#### **GENERAL PUBLIC OUTREACH (CONSERVATION COORDINATOR)**

CVWD created a Program Specialist position in 2003. The Program Specialist's duties include coordination work related to water quality, water conservation, education, public outreach, safety, and environmental reporting. A Water Conservation Specialist position was added in 2008 to provide administrative support to CVWD's water use efficiency programs.

#### **GENERAL PUBLIC INFORMATION (BROCHURES, MAILINGS, WEBSITE, ETC.)**

CVWD provides water conservation literature, brochures, posters, landscape advice and tips, home water conservation devices etc., directly to the public and its customers. These materials are available at CVWD's Administrative Office and during special events. CVWD also maintains a library of water resource education conservation films and videos for loan to local organizations. MWD will also provide speakers to various groups upon request.

**Table 4-5** shows past, current, and planned public information programs within CVWD's service area from 2011-2020.

**Table 4-5: Public Information Programs**

| Actual                                                                                              | 2011 | 2012 | 2013 | 2014 | 2015 |
|-----------------------------------------------------------------------------------------------------|------|------|------|------|------|
| Paid Advertising                                                                                    | Yes  | Yes  | Yes  | Yes  | Yes  |
| Public Service Announcement                                                                         | Yes  | Yes  | Yes  | Yes  | Yes  |
| Bill Inserts/Newsletters/Brochures                                                                  | Yes  | Yes  | Yes  | Yes  | Yes  |
| Bill Showing Water Usage in Comparison to Previous Year's Usage                                     | Yes  | Yes  | Yes  | Yes  | Yes  |
| Demonstration Gardens                                                                               | Yes  | Yes  | Yes  | Yes  | Yes  |
| Special Events/Media Events                                                                         | Yes  | Yes  | Yes  | Yes  | Yes  |
| Speaker's Bureau                                                                                    | No   | No   | No   | Yes  | Yes  |
| Program to Coordinate with Other Government Agencies, Industry and Public Interest Groups and Media | No   | Yes  | Yes  | Yes  | Yes  |
| Planned                                                                                             | 2016 | 2017 | 2018 | 2019 | 2020 |
| Paid Advertising                                                                                    | Yes  | Yes  | Yes  | Yes  | Yes  |
| Public Service Announcement                                                                         | Yes  | Yes  | Yes  | Yes  | Yes  |
| Bill Inserts/Newsletters/Brochures                                                                  | Yes  | Yes  | Yes  | Yes  | Yes  |
| Bill Showing Water Usage in Comparison to Previous Year's Usage                                     | Yes  | Yes  | Yes  | Yes  | Yes  |
| Demonstration Gardens                                                                               | Yes  | Yes  | Yes  | Yes  | Yes  |
| Special Events/Media Events                                                                         | Yes  | Yes  | Yes  | Yes  | Yes  |
| Speaker's Bureau                                                                                    | Yes  | Yes  | Yes  | Yes  | Yes  |
| Program to Coordinate with Other Government Agencies, Industry and Public Interest Groups and Media | Yes  | Yes  | Yes  | Yes  | Yes  |

Currently, CVWD does not have a method to evaluate the water savings attributable to this DMM; however, CVWD will continue to administer this DMM for its ability to educate and interact with customers.

#### 4.2.3 BMP 3: RESIDENTIAL PROGRAMS (NOW CORRESPONDS WITH DMMs 6 & 7 "OTHER")

This CUWCC BMP deals with showerheads, faucets, toilets, and leak detection surveys related to residential water use.

## RESIDENTIAL PROGRAMS

**Water Survey Assistance** - CVWD offers formal water audits for qualified residents (those using over 22 units of water per billing period). There is a budget limit of \$6,000 per year which covers 35 audits. The service is performed by a contractor, WaterWise Consulting. A copy of the survey form is attached as **Appendix D**.



**Figure 4-2: Residential Water Survey**

In addition to water audits, CVWD's customer service staff respond to residential and commercial requests for investigation of high water bills. The investigation consists of meter leak tests, meter accuracy testing, property leak checks, irrigation system analysis, or a complete "on-premises" water audit. A water bill adjustment is given to all customers who demonstrate that they have repaired an on-site leak along with proof of the repair. This appears to be an effective water conservation measure which potential savings are outlined on the audit forms.

In addition, CVWD's utility billing software identifies customers who exceed a higher-than-normal usage threshold in a given billing period, which prompts staff to further investigate as described above. Staff costs for this included measure are part of customer service duties.

CVWD also participates in various FMWD/MWD programs aimed at increasing landscape

water use efficiency for residential customers, including rebate programs that provide financial incentives. SoCal Water\$mart, formerly Save Water Save A Buck, is the conservation rebate program offered through MWD. The program offers rebates for high-efficiency clothes washers (HEWC), premium high-efficiency toilets (PHET), weather-based irrigation controllers (WBIC), soil moisture sensor system (SMSS), rotating sprinkler nozzles, rain barrels/cisterns, and turf removal, as described below.

- ***Weather-Based Irrigation Controllers Program*** – This program, previously called the “Smart Timer Rebate Program,” started in FY 2004/05. Under this regional program, residential and small commercial properties are eligible for a rebate when they purchase and install a weather-based irrigation controller, which has the potential to save 13,500 gallons a year per residence. Rebates start at \$80 per controller for landscapes less than 1 acre in area and \$35 per station for more than 1 acre.
- ***Rotating Nozzle Rebate Program*** – This rebate program started in 2007 and is offered to both residential and commercial customers. Through this program, site owners will purchase and install rotary nozzles, which can use up to 20 percent less water than conventional fan spray nozzles, in existing irrigation systems. These sprinklers reduce runoff onto sidewalks and into local storm drain system and provide uniform water distribution onto the landscape. MWD offers \$2 per nozzle with a minimum of 30 nozzles.
- ***Rain Barrels & Cisterns Program*** – Residential and commercial customers can receive rebates for installing rain barrels and/or cisterns to collect rainwater for re-use for watering their landscapes. Customers may receive rebates starting at \$75 per barrel or \$300 per cistern. The barrels and cisterns must adhere to specified design guidelines. In September 2014, 2015, and planned for 2016, CVWD participated in a Rain Barrel & Drought-Tolerant Landscape Event that took place at Descanso Gardens (La Cañada Flintridge, CA). CVWD co-sponsored the event along with FMWD and the Cities of Burbank, Glendale, Pasadena, and South Pasadena. As a result of the event, over 1,000 rain barrels were purchased by local residents.
- ***Soil Moisture Sensor System Program*** – For large residential sites, a soil moisture sensor, which measures soil moisture content in the active root zone, can be installed to receive rebates starting at \$80 or \$35 per SMSS. The sensor must be connected to a compatible irrigation system controller.

- **Turf Removal Program** – Through this program, residential and small commercial customers of participating retail water agencies are eligible to receive a minimum of \$2 per square foot of turf removed for qualifying projects.

CVWD provided a rebate of \$1.00 per square foot of turf removed up to \$800. Between 2011 and 2015, 651,762 square feet of turf grass was replaced by synthetic turf, native/drought tolerant plants, and/or permeable paving.

Currently, Turf Removal incentives are no longer being offered throughout the region due to high popularity that led to the exhaustion of funds.

### RESIDENTIAL PLUMBING RETROFIT

CVWD participates in the distribution of low-flow showerheads, aerators, hose shut-off nozzles, water buckets, and toilet-tank leak detection kits at its customer service counter and various local outdoor events. Assuming each device saves 3 gallons per day, approximately 3.4 AF are saved annually.

Additionally, CVWD through FMWD/MWD offered rebates through SoCal WaterSmart program for high-efficiency clothes washers and premium high-efficiency toilets.

CVWD also works with the local building/planning departments of the City of La Cañada-Flintridge, City of Glendale, and County of Los Angeles to assure enforcement of the ultra-low-flush toilet (ULFT) installation requirements for new construction, and supports the prohibition of the sale of toilets using more than 1.1 gallons per flush (gpf). Developers' needs for fire-flow certificates, "will-serve" certificates, and ultimately water service connections are used as ways to ensure compliance.

Another program offered by MWD offered rebates for HETs (1.28 gpf) for both residential and CII customers. Starting November 11, 2015, rebates are only eligible for Premium HETs (1.1 gpf or less) and no longer available for HETs at 1.28 gpf.

Between 2011 and 2015, 335 HETs have been installed within CVWD's service area resulting in a water savings of 29,907 gpd or 33.5 AFY

## HIGH-EFFICIENCY WASHING MACHINE REBATES

Starting in 2002, CVWD passed along MWD's high efficiency washing machine rebate. CVWD promotes the program on its website and with flyers posted at the administration office and distributed at local events.



Figure 4-3: HE Washing Machines

Residents in CVWD's service area are eligible to receive a \$135 (\$85 MWD and \$50 CVWD) rebate when they purchase a new High Efficiency Clothes Washer (HECW) as CVWD supplements MWD's rebate. Rebates are available on a first-come, first-served basis, while funds last. To qualify for a rebate, the HECW must have a water factor of 3.7 or less. An HECW with a water factor of 3.7 will use approximately 15 gallons of water per load compared to a conventional top-loading clothes washer which can use 40 gallons or more per load. Depending on use, these machines can save 10,000 gallons of water per year. Participants are encouraged to contact their local gas and/or electric utility as additional rebates may be available.

Between 2011 and 2015, CVWD has given out 229 high-efficiency washing machine rebates to its customers. As a result, CVWD gets a water savings of 18,123 gpd or 20.3 AFY.

#### 4.2.4 BMP 4: COMMERCIAL, INDUSTRIAL, & INSTITUTIONAL PROGRAMS (NOW CORRESPONDS WITH DMMs 6 & 7 "OTHER")

CVWD has a relatively small number of commercial accounts and no industrial accounts. The vast majority of businesses within CVWD do serve as small mom and pop shops or local restaurants. CVWD currently offers financial incentives under MWD's SoCal Water\$mart Program, which offers rebates for various water efficient devices to some CII customers.

***SoCal Water\$mart*** – MWD launched this program on July 1, 2008 and offers rebates to assist CII customers in replacing high-flow plumbing fixtures with low-flow fixtures. Rebates are available only on those devices listed in **Table 4-6** and must replace higher water use devices. Installation of devices is the responsibility of each participant. Participants may purchase and install as many of the water saving devices as are applicable to their site.

**Table 4-6: Retrofit Devices and Rebate Amounts under SoCal Water\$mart Program**

| Retrofit Device                                                        | Rebate Amount                  |
|------------------------------------------------------------------------|--------------------------------|
| High Efficiency Toilet                                                 | \$40                           |
| Ultra-Low-Water or Zero Water Urinal                                   | \$200                          |
| Connectionless Food Steamers                                           | \$485 per compartment          |
| Air-Cooled Ice Machines                                                | \$1,000                        |
| Cooling Tower Conductivity Controller                                  | \$625                          |
| pH / Conductivity Controller                                           | \$1,750                        |
| Dry Vacuum Pumps                                                       | \$125 per 0.5 HP               |
| Weather Based Irrigation Controller and Computer Irrigation Controller | \$35 per station               |
| Rotating Nozzles for Pop-up Spray Head Retrofits                       | \$2 (minimum of 30 per rebate) |
| Large Rotary Nozzles                                                   | \$13 per set                   |

CVWD also provided a list of restaurants to MWD for retrofit of a pre-rinse spray valve.

Due to very limited number of CII customers, CVWD has no formal plans to initiate an active CII replacement program beyond the programs offered by MWD.

#### **4.2.5 BMP 5: LANDSCAPE PROGRAMS (NOW CORRESPONDS WITH DMMs 6 & 7 "OTHER")**

CVWD supports large landscape conservation through FMWD/MWD's regional programs including:

***SoCal Water\$mart Program*** – CVWD, through FMWD/MWD, offered rebates through SoCal Water\$mart program for landscape plumbing retrofitting. Landscape rebates are available for WBIC, SMSS, rotating sprinkler nozzles, and turf removal. The available landscape programs are described in **Section 4.2.3** and listed below:

- Weather-Based Irrigation Controllers Program (WBIC)
- Rotating Nozzle Rebate Program
- Rain Barrels & Cisterns Program
- Soil Moisture Sensor System Program (SMSS)
- Turf Removal Program

***California Friendly Landscape Training*** – On behalf of its member agencies, FMWD supports MWD's California Friendly Landscape and Gardening Training, which provides education to residential homeowners and professional landscape contractors on a variety of landscape water use efficiency practices. These classes are hosted by MWD's member agencies to encourage participation across the county. The Professional Training Program course consists of four consecutive classes in landscape water management, each building upon principles presented in the preceding class. Each participant receives a bound handbook containing educational materials for each class. These classes are offered throughout the year and taught in both English and Spanish languages.

In addition, CVWD takes advantage of regional and local efforts which target and market to large landscape properties using bill inserts and direct marketing efforts. CVWD also sponsors three or more independent water efficient gardening classes per year. Topics include turf removal, design, placement, irrigation, plant selection, composting, gardening with worms, and efficient watering practices.



#### 4.2.6 OTHER FMWD CONSERVATION MEASURES (NOW CORRESPONDS WITH DMM 7 "OTHER")

##### WHOLESALE AGENCY PROGRAMS

CVWD is a retail water agency. Therefore, this DMM does not apply. CVWD is a member agency of FMWD. FMWD provides financial incentives or equivalent resources, as appropriate and beneficial to distributing retail agencies, to advance water conservation efforts and effectiveness.

CVWD is currently budgeting approximately \$102,000 per year for its conservation programs. In FY 2015-16, CVWD's conservation programs included a turf replacement program, rain barrel rebate program, premium high efficiency toilet program, HECW and various outreach and education programs. The funding amounts for FY 2015-16 are shown in **Table 4-7**.

**Table 4-7: CVWD's Water Use Efficiency Programs Budget for FY 2015-16**

| Program Description                                              | Budget              |
|------------------------------------------------------------------|---------------------|
| Water Conservation classes                                       | \$2,500             |
| Community Activity, Booth registration, Supplies and Promo Items | \$25,500            |
| School Assemblies                                                | \$9,000             |
| Water Audits                                                     | \$5,000             |
| Supplemental Washer Rebates                                      | \$2,500             |
| Supplemental Toilet Rebates                                      | \$2,500             |
| Turf Replacement                                                 | \$35,000            |
| Turf Rebate Booklet                                              | \$3,000             |
| Community Projects                                               | \$12,000            |
| Advertising                                                      | \$5,000             |
| <b>Total</b>                                                     | <b>\$102,000.00</b> |

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# SECTION 5: CONTINGENCY PLANNING

*During times of severe drought or catastrophic supply interruptions, CVWD will implement its phased Water Conservation Program. CVWD's efforts are dependent on MWD's regional efforts, which call for reductions in water use and greater utilization of storage reservoirs.*



## SECTION 5: CONTINGENCY PLANNING

### 5.1 OVERVIEW

Water supplies may be interrupted or reduced significantly in a number of ways, including droughts, earthquakes, and power outages, which hinder a water agency's ability to effectively deliver water. The ability to manage water supplies in times of drought or other emergencies is an important part of water resources management for a community.

Recent water supply challenges throughout the American Southwest and the State of California have resulted in the development of a number of policy actions that water agencies would implement in the event of a water shortage. In Southern California, the development of such policies has occurred at both the wholesale and retail level. This section describes new and existing policies that MWD, FMWD, and CVWD have in place to respond to water supply shortages, including a catastrophic interruption and up to a 50 percent reduction in water supply.

## 5.2 STAGES OF ACTION

### 5.2.1 MWD STAGES OF ACTION

#### WATER SURPLUS & DROUGHT MANAGEMENT PLAN (WSDM)

CVWD works in conjunction with FMWD and MWD to implement conservation measures within the framework of MWD's Water Shortage and Drought Management (WSDM) Plan. The WSDM Plan was developed in 1999 by MWD with assistance and input from its member agencies. The plan addresses both surplus and shortage contingencies. MWD's WSDM Plan documents the stages of action that it would undertake in response to a water supply shortage. FMWD's water supply shortage stages reflect MWD's WSDM Plan.



**Figure 5-1: Severe Droughts Highlight the Importance of Conservation Ordinances**

The WSDM Plan guiding principle is to minimize adverse impacts of water shortage. The plan guides the operations of water resources (local resources, Colorado River, SWP, and regional storage) to ensure regional reliability. It identifies the expected sequence of resource management actions MWD will take during surpluses and shortages of water to minimize the probability of severe shortages, which require curtailment of full-service demands. Mandatory allocations are avoided to the extent practical; however, in

the event of an extreme shortage, an allocation plan will be implemented.

In addition to its WSDM Plan, MWD developed a Water Supply Allocation Plan (WSAP), which provides a standardized methodology for allocation of supplies during times of severe shortage (Stage 7 on MWD's WSDM Plan). During a shortage, CVWD's imported water supplies will be allocated based on the methodology documented in FMWD's Allocation Plan, which typically mirrors the MWD allocation plan.

The description of shortage stages below is from MWD's 2015 UWMP, page 2-18:

***"Shortage:** Metropolitan can meet full-service demands and partially meet or fully meet interruptible demands, using stored water or water transfers as necessary.*

***Severe Shortage:** Metropolitan can meet full-service demands only by using stored water, transfers, and possibly calling for extraordinary conservation.*

***Extreme Shortage:** Metropolitan allocates available supply to full-service customers.*

*The WSDM Plan also defines six shortage management stages to guide resource management activities. These stages are not defined merely by shortfalls in imported water supply, but also by the water balances in Metropolitan's storage programs. Thus, a 10 percent shortfall in imported supplies could be a stage one shortage if storage levels are high. If storage levels are already depleted, the same shortfall in imported supplies could potentially be defined as a more severe shortage.*

*When Metropolitan must make net withdrawals from storage to meet demands, it is considered to be in a shortage condition. Under most of these stages, Metropolitan is still able to meet all end-use demands for water. For shortage stages 1 through 3, Metropolitan will meet demands by withdrawing water from storage. At shortage stages 4 and 5, Metropolitan may undertake additional shortage management steps, including issuing public calls for extraordinary conservation and exercising water transfer options, or purchasing water on the open market."*

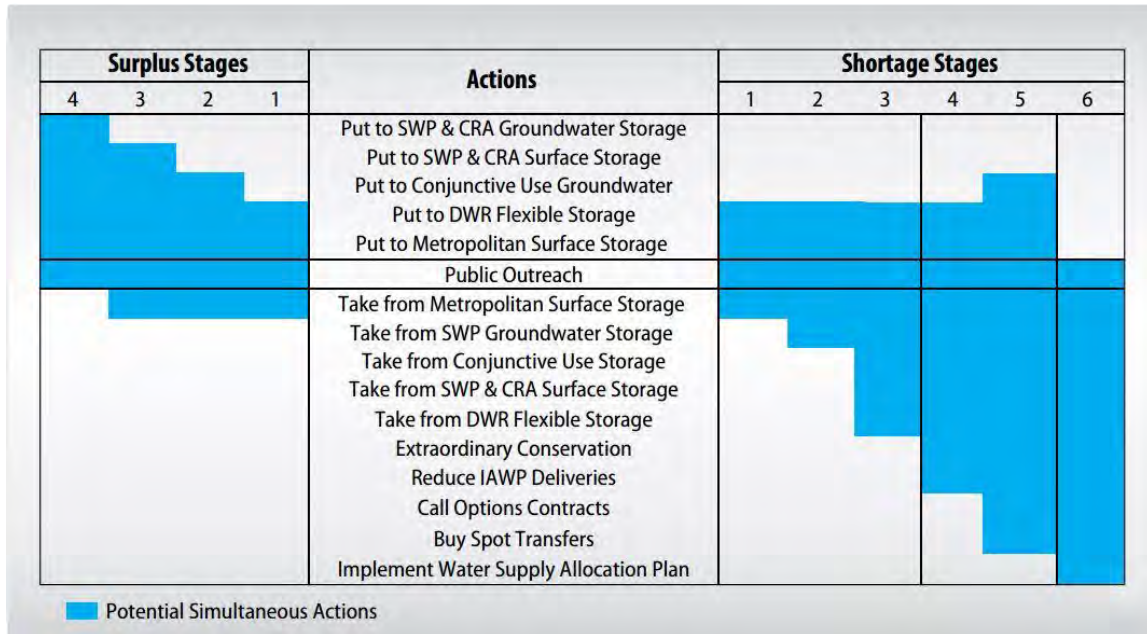


Figure 5-2: MWD WSDM Surplus & Drought Stages

#### MWD WATER SUPPLY ALLOCATION PLAN (FOR WSDM SHORTAGE STAGE 7)

In February 2008, MWD's Board of Directors adopted a WSAP, which includes a methodology for calculating supply allocations in the event that MWD enters a Shortage Stage 7 and is unable to meet the demands of its member agencies. MWD revised its WSAP in 2014 to include the following updates: new FY 12-13 to FY 13-14 baseline, implement a Conservation Demand Hardening Adjustment, create a separate Groundwater Replenishment Allocation for applicable agencies, and replace WSAP Penalty Rates with Allocation Surcharges based on the marginal costs of turf removal. It should be noted that the WSAP is not a rationing plan. Rather, it is a pricing plan where water is allocated at regular prices and agencies who choose to take more than the allocated water pay surcharges. The surcharge pricing mechanism acts to discourage the use of water above the allocation. The WSAP uses a combination of estimated total retail demands and historical local supply production within the member agency service area to estimate the demands on MWD from each member agency in a given year. Based on a number of factors, including storage and supply conditions, MWD then determines whether it has the ability to meet these demands or will need to allocate its limited supplies among its member agencies. Thus, implicit in MWD's decision not to implement an allocation of its supplies is that, at a minimum, MWD will be able to meet the demands identified for each of the member agencies.

According to MWD's 2015 IRP, the approach seeks to balance the impacts of a shortage at the retail level while maintaining equity on the wholesale level and takes into account growth, local investments, changes in supply conditions and the demand hardening aspects of non-potable recycled water use and the implementation of conservation savings programs. The methodology attempts to allocate supplies based on an estimate of an agency's relative need for imported water using the following process:

1. Establish a baseline for total retail demands (and adjust for growth) to determine the allocation year total retail demands. (*"What are your total water demands?"*)
2. Estimate the amount of local supplies to be utilized in the allocation year and subtract from total retail demands. This is the allocation year baseline demand on MWD. (*"How much imported water do you need from MWD?"*)
3. Apply the minimum allocation percentage (per the regional shortage level) to the allocation year baseline demand and provide minor adjustments based on various criteria. (*"Restrict normal supply deliveries and provide allocation."*)

#### **BASE PERIOD CALCULATIONS (USED TO DETERMINE WSAP REDUCTIONS)**

The Base Period is calculated using data from FY 2012-13 and FY 2013-14. Base Period wholesale demands are based on the two-year average of demands on MWD during the Base Period, including full-service, seawater barrier, seasonal shift, and surface storage operating agreement demands.

Local supplies for the base period are calculated using a two-year average of groundwater production, groundwater recovery, Los Angeles Aqueduct supply, surface water production, and other imported supplies. Non-potable recycling production is not included in this calculation, which, according to MWD, is intended to address the impact of demand hardening due to recycled water use.

Total potable retail demands for the Base Period are then calculated by adding the Base Period wholesale demands on MWD and the Base Period local supplies.

## WSAP ALLOCATION YEAR CALCULATIONS

The next step is to estimate water needs in an allocation year by (1) adjusting the Base Period total retail demands for population or economic growth, and (2) accounting for changes in local supplies.

The Base Period retail demands are adjusted for growth using the average annual rate of population growth occurring since the two-year base period based on county-level data generated by the California Department of Finance.



**Figure 5-3: MWD's Diamond Valley Lake (Potential Reserves for WSAP Allocations)**

Next, these growth-adjusted demands are adjusted again to account for (1) gains and losses of local supply, and (2) extraordinary increases in production over the base year. According to MWD, these adjustments are made to give a more accurate estimate of actual supplies in the allocation year, and, in turn, more accurately reflect an agency's demand for MWD supplies.

The adjustment for gains in local supplies is intended to account for planned or scheduled gains in local supply production above the Base Period, which are not due to extraordinary actions to increase water supply in the allocation year. These previously scheduled increases in supply programs (e.g., San Diego County Water Authority/Imperial Irrigation District) or local production are added to the base period local supplies. Again, new supplies from non-potable recycling projects are not counted as local supplies.

While the local agency does become more reliable with the addition of the new supplies, assuming that the new supplies are available during an allocation, the benefits of these programs are partially offset because the impact of adding the new supplies to the Base Period local supplies is to reduce an agency's dependence on MWD and thus their allocation under the WSAP.

Alternatively, only a portion of the additional supplies from what are termed "extraordinary increases in production" are added back to Allocation Year local supplies depending on the retail shortage level. Extraordinary increases in production include such efforts as purchasing transfers or mining of groundwater basins. By adding only a percentage of the yield from these supplies to Allocation Year local supplies, it has the effect of "setting aside" the majority of yield for the agency who procured the supply.

**Table 5-1** reflects the set of percentages used in the WSAP to establish water allocations for each agency.

**Table 5-1: Water Allocation Percentages**

| Regional Shortage Level | Regional Shortage Percentage | Wholesale Minimum Percentage | Maximum Retail Impact Adjustment Maximum |
|-------------------------|------------------------------|------------------------------|------------------------------------------|
| 1                       | 5%                           | 92.5%                        | 2.5%                                     |
| 2                       | 10%                          | 85.0%                        | 5.0%                                     |
| 3                       | 15%                          | 77.5%                        | 7.5%                                     |
| 4                       | 20%                          | 70.0%                        | 10.0%                                    |
| 5                       | 25%                          | 62.5%                        | 12.5%                                    |
| 6                       | 30%                          | 55.0%                        | 15.0%                                    |
| 7                       | 35%                          | 47.5%                        | 17.5%                                    |
| 8                       | 40%                          | 40.0%                        | 20.0%                                    |
| 9                       | 45%                          | 32.5%                        | 22.5%                                    |
| 10                      | 50%                          | 25.0%                        | 25.0%                                    |

## 5.2.2 FMWD STAGES OF ACTION

FMWD's plan mirrors MWD's plan with two exceptions. The first exception is that since FMWD does not take delivery of any Seawater Barrier water and FMWD is

considered ineligible for the Replenishment Allocation, reference to those deliveries has been deleted.

The second exception is because of the way the water is allocated, without a further adjustment, total water allocated to FMWD's member agencies will never match the total water allocated to FMWD. Thus, an adjustment has been added to prorate the difference between the amount allocated to FMWD by MWD and the initial allocation by FMWD.

Additionally, FMWD will reconcile over use and under use of member agency allocations at the same time that MWD does, typically at the end of every 12 months. Any allocation under used by agencies will be pooled together in one pot to be distributed to those agencies who over use their allocation. Any agency using that pooled water will be charged the regular FMWD Tier 1 or Tier 2 rate for having taken the water plus 50 percent of MWD's penalty rate. Any penalties assessed would go into the Water Resource and Conservation Fund.

FMWD only assesses 50 percent of the surcharge against its retail agencies in situations where FMWD is not subject to the Allocation Surcharge from MWD. In cases where FMWD as a whole is subject to the Allocation Surcharge from MWD, member retail agencies that have over used their allocation will take on the obligation proportionally and be subject to 100 percent of the surcharge.

### **Supply Allocation Formula Elements**

The following are the elements of the allocation formula:

**Base Period Demands** – A two-year average of historical water use utilizing data from FY 2012-13 and FY 2013-14. Water use is divided into three components: total retail demand, locally produced water, and imported water.

**Growth Adjustment** – Retail demands are adjusted for growth between the base period and the time of allocation based on county level estimates of average annual growth in population. Growth for Los Angeles County is 0.8 percent according to California Department of Finance. Agencies have an option to use weighted average population and job growth instead based on an appeal process to MWD.

**Local Supplies** – The amount of local supplies that are planned to be utilized in an allocation year.

**Extraordinary Allocation Year Local Supplies** – These are previously unscheduled local water supplies to be utilized in an allocation year, including transfers, recycled water, desalination, and recovery of groundwater. This amount is credited without reduction in the Wholesale Minimum Allocation. In addition, it decreases both the Retail Impact Adjustment and the reliance on MWD.

**Conservation Demand Hardening Adjustment** – An adjustment is made for demand hardening due to active conservation based on GPCD. Calculation considers conservation savings, dependence on MWD and the associated Regional Shortage Level percentage.

**Regional Shortage Percentage** – This is the percentage of shortage between supplies and demands and will be declared by MWD's Board. **Table 5-1** contains the percentages used to establish water allocations for agencies.

**Wholesale Minimum Allocation** – This is the first step in the formula and provides the minimum imported water allocation from MWD. It is calculated as an allocation baseline demand on MWD (Base Period Demands minus Local Supplies) multiplied by the Wholesale Minimum Percentage of the associated Regional Shortage Level.

**Retail Impact Adjustment** – This is the maximum additional allocation an agency may receive based on impacts to retail customers. Those agencies with less local supplies would receive a higher adjustment than those agencies with more local supplies. This adjustment is calculated as a percent dependence on MWD times the allocation baseline demand on MWD multiplied by the Retail Impact Adjustment factor of the associated Regional Shortage Level.

**Minimum Per-Capita Adjustment** – An adjustment made should gallons per capita per day for an agency drop to 100 GPCD or lower.

**Total FMWD Allocation** – A preliminary allocation is provided to agencies based on calculations, which mirror MWD's WSAP. Without a further adjustment, total water allocated to FMWD's member agencies will never match the total water allocated to

FMWD. Thus, an adjustment has been added to prorate the difference between the amount allocated to FMWD by MWD and the initial allocation by FMWD.

**Allocation Surcharge** – Previously known as WSAP Penalty Rates, an Allocation Surcharge will be in effect based on the costs to implement outdoor water use reductions through turf removal programs. The Allocation Surcharge would provide a price signal based on the marginal conservation costs incurred to reduce water use in dry and shortage years.

### **Conservation Plan Ordinance**

FMWD Board of Directors adopted Water Conservation Plan Ordinance No. 772-0409 in April 2009 (Revised plan adopted on April 20, 2015). Ordinance No. 772-0409 establishes a comprehensive staged water conservation program, which will encourage reduced water consumption within FMWD through conservation, enable effective water supply planning, assure reasonable and beneficial use of water, prevent waste of water, and maximize the efficient use of water within FMWD. Along with permanent water conservation requirements, FMWD's Water Conservation Plan consists of five stages, which are described in **Table 5-2**, to respond to a reduction in potable water available to FMWD for distribution to its customers. Stage 1 conservation requirements are in effect at all times unless a mandatory conservation stage has been implemented by the Board of Directors.

### **5.2.3 CVWD STAGES OF ACTION**

CVWD has adopted a Water Conservation Program. The purpose of this program is to provide water conservation regulations, in a phased approach, to minimize the effect of a shortage of water supplies on the customers of CVWD during various critical stages of a water shortage. Along with permanent water conservation requirements, CVWD's Water Conservation Program consists of the following five stages, as shown in **Table 5-2**, to respond to a reduction in potable water available to CVWD for distribution to its customers with Phase 1 conservation requirements in effect at all times unless a mandatory conservation stage has been implemented by CVWD Board of Directors.

**Table 5-2: Water Supply Shortage Stages and Conditions – Rationing Stages**

| Stage No.                                                                   | Water Supply Conditions                                                                                                          | % Shortage |
|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------|
| Phase 1 - Color Code “Blue” – Normal Water Conservation Alert               | FMWD can meet all Member Agency Demands.                                                                                         | 0%         |
| Phase 2 - Color Code “Green” – Increased Voluntary Water Conservation Alert | Some supplies have been impacted and customers should increase efforts to conserve.                                              | 15%        |
| Phase 3 - Color Code “Yellow” – Extraordinary Water Conservation Alert      | MWD is pulling water from most of its storage programs to meet demands. Extraordinary conservation is called for from customers. | 30%        |
| Phase 4 - Color Code “Orange” – Rationing Water Conservation Alert          | MWD has implemented its allocation plan to its member agencies.                                                                  | 40%        |
| Phase 5 - Color Code “Red” – Critical Water Conservation Alert              | Water supplies are only available for health and safety needs.                                                                   | 50%        |

### 5.3 THREE-YEAR MINIMUM WATER SUPPLY

During a three-year drought, CVWD may import water to meet demands in excess of its adjudicated pumping right of 3,294 AFY as necessary. Imported water supplies, like groundwater, are subject to demand increases and reduced supplies during dry years; however, MWD modeling in its 2015 UWMP, as referenced in **Tables 3-6** and **3-7** in **Section 3**, results in 100 percent reliability for full-service demands through the year 2040 for all climatic conditions. Based on the conditions described above, CVWD anticipates the ability to meet water demand for all climatic conditions for the near future.

**Table 5-3** displays the minimum water supply available to CVWD based on a three-year dry period for the next three years.

**Table 5-3: Three-Year Estimated Minimum Water Supply (AFY)**

| Source          | Normal (2016) | 2017         | 2018         | 2019         |
|-----------------|---------------|--------------|--------------|--------------|
| Imported Supply | 2,154         | 2,154        | 2,154        | 2,154        |
| Local Supplies  | 2,350         | 2,420        | 2,420        | 2,420        |
| <b>Total</b>    | <b>4,504</b>  | <b>4,574</b> | <b>4,574</b> | <b>4,574</b> |

Based on the above analysis, CVWD should expect 100 percent supply reliability during a three-year drought period over the next three years.

## 5.4 CATASTROPHIC SUPPLY INTERRUPTION

Given the great distances imported water supplies travel to reach the FMWD service area, the region is vulnerable to interruptions along hundreds of miles of aqueducts, pipelines and other facilities associated with delivering the supplies to the region. Additionally, this water is distributed to customers through an intricate network of pipes and water mains that are susceptible to damage from earthquakes and other disasters, natural or otherwise.

### 5.4.1 MWD

MWD has comprehensive plans for stages of actions it would undertake to address a catastrophic interruption in water supplies through its WSDM and WSAP Plans. MWD also developed an Emergency Storage Requirement to mitigate against potential interruption in water supplies resulting from catastrophic occurrences within the Southern California region, including seismic events along the San Andreas Fault. In addition, MWD is working with the State to implement a comprehensive improvement plan to address catastrophic occurrences that could occur outside of the Southern California region, such as a probable maximum seismic event in the Delta, which could cause levee failure and disruption of SWP deliveries.

### 5.4.2 CVWD

For a sudden or catastrophic water supply interruption, CVWD has developed an Emergency Preparedness and Disaster Response Plan as required by State Water Resource Control Board to ensure the most effective use of its resources for the benefit and protection of facilities and employees, in addition to the preservation of a reliable water supply for its customers.

**Power Outage** – In the event of a power outage, CVWD maintains five emergency standby power generators. One of the emergency generators is stationary and dedicated to power water supply wells and the auxiliary equipment at the Glenwood Nitrate Operations Center. Four emergency generators are portable and are mounted

on trailers. They can be mobilized to any pump station for movement of water out of a reservoir into a higher pressure zone. Each pump station site is equipped with emergency power receptacles and transfer switches, which allow personnel to hook up the portable generators. The fourth generator is located at CVWD's Administrative Office. CVWD also has Universal Power Supply systems on the computer systems at the Administrative Office, the SCADA (Supervisory Control and Data Acquisition) systems at the Glenwood Nitrate Operations Facility and at booster station at well sites. In addition, FMWD operates standby emergency generators, which could be used by CVWD.

**Water Outage** – In the event of a water outage, CVWD has the ability to receive water from the City of Glendale, La Cañada Irrigation District, and Los Angeles Department of Water and Power (LADWP) through emergency water supply interconnections.

City of Glendale Emergency Interconnection:

- Glendale/CVWD emergency interconnection was installed in 2004 and allows for CVWD to receive up to 5.0 cubic feet per second (cfs) from Glendale.
- Glendale and CVWD also have an agreement for emergency hydrant-to-hydrant interconnections that allows CVWD to take water from Glendale or for Glendale to take water from CVWD.

La Cañada Irrigation District (LCID) Interconnection:

- CVWD has an interconnection with LCID that allows CVWD to take water from LCID into CVWD's Zone 3.
- LCID has two interconnections with CVWD that allows LCID to take water from CVWD into LCID westerly zones.

In addition, CVWD is nearing the completion of a new emergency interconnection with LADWP by the end of 2016. The new interconnection will allow:

- CVWD to receive up to 2.2 cfs or 1.9 MGD from LADWP, which will provide an emergency water supply to FMWD through a metered connection.
- LADWP to receive up to 2.2 cfs from CVWD through a booster pump system that will provide LADWP water in emergency situations.

CVWD is an active member of the southern region of the statewide Water Agency Response Network (WARN), a mutual aid coalition of water departments and agencies

which allows for coordination of resources during disasters or catastrophic events.

**Supplemental Water Supplies** – Supplemental water supplies to help offset future shortages due to drought would be available through FMWD via MWD and their WSDM. The WSDM is referenced in FMWD’s 2015 Draft UWMP and described in detail in MWD’s 2015 UWMP.

Preparation actions for possible catastrophes are summarized in **Table 5-4**.

**Table 5-4: Preparation Actions for Catastrophe**

| Possible Catastrophe                   | Preparation Actions                                                                                                                                                                                                                                                                             |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Regional Power Outage                  | <ul style="list-style-type: none"> <li>• Emergency Preparedness and Disaster Response Plan</li> <li>• Standby Emergency Power Generators</li> <li>• Interconnections with nearby agencies</li> <li>• Water Agency Response Network Membership</li> <li>• Supplemental Water Supplies</li> </ul> |
| Earthquake                             |                                                                                                                                                                                                                                                                                                 |
| Supply Contamination                   |                                                                                                                                                                                                                                                                                                 |
| Terrorist Act which Interrupts Service |                                                                                                                                                                                                                                                                                                 |
| Other(s)                               |                                                                                                                                                                                                                                                                                                 |

## 5.5 PROHIBITIONS, PENALTIES, AND CONSUMPTION REDUCTION METHODS

### 5.5.1 PROHIBITIONS

CVWD’s Water Conservation Plan promote the efficient use of water, reduce or eliminate water waste, complement CVWD’s Water Quality regulations and urban runoff reduction efforts, and enable implementation of CVWD’s Water Shortage Contingency Measures. Prohibitions include, but are not limited to: restrictions on outdoor watering, washing of vehicles, food preparation establishments, repairing of leaks and other malfunctions, swimming pools, decorative water features, construction activities, and water service provisions, which can be found in **Table 5-5**.

**Table 5-5: Mandatory Prohibitions**

| Examples of Prohibitions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Stage When Prohibition Becomes Mandatory |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| Hose washing of sidewalks, walkways, driveways, or parking areas, tennis courts, patios, porches or other paved areas shall not be permitted. Exception: Flammable or other dangerous substances may be disposed of by direct hose flushing by public safety officers for the benefit of public health and safety. Businesses or schools required to hose down public eating areas will be provided with access to a water broom.                                                                                                                                            | Phase 1-Color Code<br>"Blue"             |
| Use of water for any purpose which results in overspray, excessive runoff onto hardscapes, driveways, streets, adjacent lands or into gutters shall not be permitted.                                                                                                                                                                                                                                                                                                                                                                                                        | Phase 1-Color Code<br>"Blue"             |
| Water used to clean, fill or maintain levels in decorative fountains or similar structures must be part of a recirculation system.                                                                                                                                                                                                                                                                                                                                                                                                                                           | Phase 1-Color Code<br>"Blue"             |
| Leaks from any facility both inside and outside of a customer's premises must be repaired within seventy-two hours after the customer is notified of, or discovers the leak. Failure to affect the repair of any leak shall subject said customer to all penalties provided herein for waste of water.                                                                                                                                                                                                                                                                       | Phase 1-Color Code<br>"Blue"             |
| No watering, sprinkling or irrigating shall take place between the hours of nine a.m. (9:00AM) and five p.m. (5:00PM) in any landscaped or vegetated areas, including, but not limited to, golf courses, parks, cemeteries and school areas landscaped with, but not limited to, grass, lawn, groundcover, shrubbery, annual and perennial plants, crops, trees, and California-friendly plantings. With the exception of drip irrigation systems or weather based irrigation controllers, residential timers shall not run for more than a total of 10 minutes per station. | Phase 1-Color Code<br>"Blue"             |
| Hand watering of non-turf areas is allowed using a hose with a positive shut-off nozzle or watering can within the allowable times as specified above.                                                                                                                                                                                                                                                                                                                                                                                                                       | Phase 1-Color Code<br>"Blue"             |
| No watering, sprinkling or irrigating shall take place in any landscaped or vegetated areas on days when the wind is blowing causing overspray. No irrigation or watering of turf or ornamental-landscapes during and 48 hours following measurable precipitation.                                                                                                                                                                                                                                                                                                           | Phase 1-Color Code<br>"Blue"             |

| Examples of Prohibitions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Stage When Prohibition Becomes Mandatory |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| The washing of commercial and non-commercial privately owned automobiles, trucks, trailers, motor-homes, boats, buses, airplanes and other types of vehicles is restricted to use of a hand-held bucket and quick rinses using a hose with a positive shut-off nozzle. Exceptions: the use of wash water which is on the immediate premises of a commercial car wash or commercial service station; where health, safety and welfare of the public is contingent upon frequent vehicle cleaning, such as garbage trucks and vehicles which transport food and perishables. | Phase 1-Color Code<br>"Blue"             |
| Owners of outdoor swimming pools, wading pools or spas, when these are not in use, are requested to use covers to minimize the evaporation of water.                                                                                                                                                                                                                                                                                                                                                                                                                       | Phase 1-Color Code<br>"Blue"             |
| Water for construction purposes including but not limited to de-brushing of vacant land, compaction of fills and pads, trench backfill and other construction uses, shall be used in an efficient manner which will not result in runoff.                                                                                                                                                                                                                                                                                                                                  | Phase 1-Color Code<br>"Blue"             |
| The use of potable water from fire hydrants shall be limited to firefighting related activities or other activities immediately necessary to maintain the health, safety, and welfare of the residents of the city.                                                                                                                                                                                                                                                                                                                                                        | Phase 1-Color Code<br>"Blue"             |
| No restaurant, hotel, café, cafeteria or other public place where food is sold, served or offered for sale, shall serve drinking water to any customer unless expressly requested by a customer.                                                                                                                                                                                                                                                                                                                                                                           | Phase 1-Color Code<br>"Blue"             |
| Hotels, motels, and other commercial lodging establishments are requested to post notices informing their guests about CVWD's water conservation policy and urging guests to conserve water. Water conservation notices will be provided by CVWD.                                                                                                                                                                                                                                                                                                                          | Phase 1-Color Code<br>"Blue"             |
| Hotels, motels and other commercial lodgings are requested to post notices giving their guests the option of not laundering towels and linens daily.                                                                                                                                                                                                                                                                                                                                                                                                                       | Phase 1-Color Code<br>"Blue"             |
| Where applicable, restaurants must utilize water conserving nozzles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Phase 1-Color Code<br>"Blue"             |
| Watering Days: Odd/Even assigned days                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Phase 2 – Color Code<br>"Green"          |

| Examples of Prohibitions                                                                                                                                                                                                                                                                                                                                                                                | Stage When Prohibition Becomes Mandatory |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| Watering Days: Tuesday, Thursday, Saturday                                                                                                                                                                                                                                                                                                                                                              | Phase 3 – Color Code “Yellow”            |
| Residential and commercial landscape irrigation is limited to no more than two (2) days per week on Tuesday and Saturday. Exempt are public areas owned or operated by School Districts or public use areas greater than 4,000 square feet.                                                                                                                                                             | Phase 4 -Color Code “Orange”             |
| The filling, refilling or adding of water to indoor and outdoor pools, wading pools, or spas is prohibited. Exemptions: Commercial Repairs mandated by the Federal Virginia Graeme Baker Act, or adding water for the prevention of equipment failure is permissible, however, the District strongly urges that a cover be used to prevent evaporation and thereby reducing the frequency of refilling. | Phase 4 - Color Code “Orange”            |
| The use of water to clean, maintain, fill, or refill decorative fountains or similar structures is prohibited. Exemptions: Adding water for the prevention of equipment failure is permissible.                                                                                                                                                                                                         | Phase 4 - Color Code “Orange”            |
| Vehicle washing is restricted to the use of a hand-held bucket and quick rinses using a hose with a positive shut-off nozzle.                                                                                                                                                                                                                                                                           | Phase 4 - Color Code “Orange”            |
| Fix leaks within 48 hours.                                                                                                                                                                                                                                                                                                                                                                              | Phase 4 - Color Code “Orange”            |
| All outdoor water use is prohibited.                                                                                                                                                                                                                                                                                                                                                                    | Phase 5 - Color Code “Red”               |
| Fix any leaks within 24 hours.                                                                                                                                                                                                                                                                                                                                                                          | Phase 5 - Color Code “Red”               |

## 5.5.2 CONSUMPTION REDUCTION METHODS

Methods to reduce the use of potable water exist in all Water Shortage Levels are listed in **Table 5-6**.

**Table 5-6: Consumption Reduction Methods**

| Consumption Reduction Methods | Stage When Method Takes Effect | Projected Reduction (%) |
|-------------------------------|--------------------------------|-------------------------|
| Phase 1 Conservation Measures | "Blue"                         | 0                       |
| Phase 2 Conservation Measures | "Green"                        | 15%                     |
| Phase 3 Conservation Measures | "Yellow"                       | 30%                     |
| Phase 4 Conservation Measures | "Orange"                       | 40%                     |
| Phase 5 Conservation Measures | "Red"                          | 50%                     |

### 5.5.3 PENALTIES

Any customer who violates provisions of CVWD's Water Conservation Plan Ordinance by either excess use of water or by specific violation of one or more of the applicable water use restrictions for a particular mandatory conservation stage may be cited by CVWD and may be subject to written notices, surcharges, fines, flow restrictions, service disconnection, and/or service termination which are detailed in **Table 5-7**.

**Table 5-7: Penalties and Charges**

| Penalties or Charges                                                                                                              | Stage When Penalty Takes Effect                                    |
|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Written Notice (Warning)                                                                                                          | First Violation (Any Phase)                                        |
| Written Notice with Description of Penalties                                                                                      | Second Violation (Any Phase)                                       |
| Flow restrictors (installation: \$150, removal: \$100) for a period of not less than 48 hours                                     | Third Violation (Any Phase)                                        |
| Flow restrictors (installation: \$200, removal: \$150) for a period of not less than one week OR Discontinuation of water service | Flagrant Disregard of ordinance or Multiple Violations (Any Phase) |

## 5.6 IMPACTS TO REVENUE

CVWD has established a target reserve of funds within its annual budget to address the issue of lost revenue during a water shortage or drought situation. CVWD has an established reserve level that includes a 25 percent rate stabilization fund, which can offset short-term loss of revenue. The total target reserve level consists of \$750,000,

two months of operations and maintenance costs (less the cost of imported water) and 25 percent of expected revenue. In the case of a long-term water shortage or drought situation, CVWD has instituted a tiered rate structure on its customers to offset the loss of revenue that will occur. Such measures are listed in **Tables 5-8** and **5-9**.

**Table 5-8: Proposed Measures to Overcome Revenue Impacts**

| Name of Measures          |
|---------------------------|
| Reserve Funds             |
| Rate Stabilization Fund   |
| Rate Structure Adjustment |

**Table 5-9: Proposed Measures to Overcome Expenditure Impacts**

| Name of Measures                      |
|---------------------------------------|
| Obtain Alternative Sources of Funding |
| Defer Certain Expenditures            |

## 5.7 REDUCTION MEASURING MECHANISM

Under normal water supply conditions, potable water production figures are recorded daily. Water Production totals are reported to the General Manager and the Management staff on a daily basis and monthly totals are incorporated into CVWD's Water Production Report.

During any declared water shortage emergency, the General Manager and the Management staff will compare the daily water production to a maximum water supply capacity and a targeted daily production to see if the reduction goals are being met. Those daily updates will be forwarded to CVWD's Board of Directors semi-monthly. Corrective action may be taken by the CVWD Board of Directors if reduction goals are not met.

During local water shortage emergencies due to a natural disaster, production figures will be monitored daily by the General Manager and the Management staff. Reports

will be provided to the CVWD Board of Directors as necessary. Water use Monitoring Mechanisms are listed in **Table 5-10**.

**Table 5-10: Water Use Monitoring Mechanisms**

| Mechanisms for Determining Actual Reductions | Type of Data Expected            |
|----------------------------------------------|----------------------------------|
| Daily Records                                | Potable water production figures |

# SECTION 6: RECYCLED WATER



*CVWD operates a sewage collection system with approximately 6,300 connections—generating close to 550-600 million gallons of raw wastewater annually.*



## SECTION 6: RECYCLED WATER

### 6.1 OVERVIEW

Recycled water is defined as domestic wastewater purified through primary, secondary and tertiary treatment. The Southern California region, from Ventura to San Diego, discharges over 1 billion gallons of treated wastewater to the ocean each day. Since recycled water is acceptable for a variety of non-potable water purposes such as irrigation, groundwater recharge, and commercial/industrial processes, it is considered a reliable and drought-proof water source and could greatly reduce the region's reliance on imported water. As technological improvements continue to reduce treatment costs, and as public perception and acceptance continue to improve, more reuse opportunities should develop, which will increase demands for recycled water. Recycled water is a critical part of the California water picture because of the area's high likelihood of drought. As part of its overall water resources planning, CVWD continues to investigate the feasibility and cost-effectiveness of using recycled water.

Cost-effective opportunities for using recycled water are limited due to the lack of large users or large irrigated areas within CVWD's service area. In addition, there is presently

a possible source from Glendale Water and Power, but no infrastructure is available. This potential use of recycled water is continually assessed by CVWD, FMWD, and MWD.

## **6.2 WASTEWATER DESCRIPTION & DISPOSAL**

### **6.2.1 WASTEWATER COLLECTION**

Municipal wastewater is generated in CVWD's service area from a combination of residential, commercial, and industrial sources. The quantities of wastewater generated are generally proportional to the population and the water used in the service area. It is estimated that customers within CVWD's service area generate wastewater based on 80 percent of potable water demand, although that is not a strict figure.

CVWD operates a sewage collection system with approximately 6,300 connections. The system transports this wastewater outside CVWD boundaries to a regional wastewater treatment plant owned by the City of Los Angeles. CVWD pays a flow-based share of treatment and disposal costs to the City of Los Angeles and the treated effluent from the Los Angeles-Glendale (LAG) Water Reclamation Plant (WRP) or LAGWRP. CVWD generates approximately 550 to 600 MG of raw wastewater annually.

### **6.2.2 WASTEWATER TREATMENT**

#### **LOS ANGELES-GLENDALE WRP**

The LAGWRP serves a small portion of the west side of La Cañada Flintridge and La Crescenta. The wastewater is treated through a three-step process imitating nature's cleaning processes also referred as tertiary treatment. The LAGWRP processes approximately 20 MG of non-potable water each day.



Figure 6-1: Los Angeles-Glendale Plant

### 6.3 CURRENT RECYCLED WATER USES

There are currently no recycled water uses within CVWD's service area.

### 6.4 POTENTIAL RECYCLED WATER USES

There are currently no potential recycled water uses within CVWD's service area. It is cost prohibitive due to the low demand for recycled water; however, CVWD will continue to evaluate potential projects.

#### 6.4.1 DIRECT NON-POTABLE REUSE

CVWD does not have the potential for direct non-potable reuse within their service area due to no existing recycled water system.

#### 6.4.2 INDIRECT POTABLE REUSE

CVWD does not have the potential for indirect potable reuse within their service area.

## 6.5 OPTIMIZATION PLAN

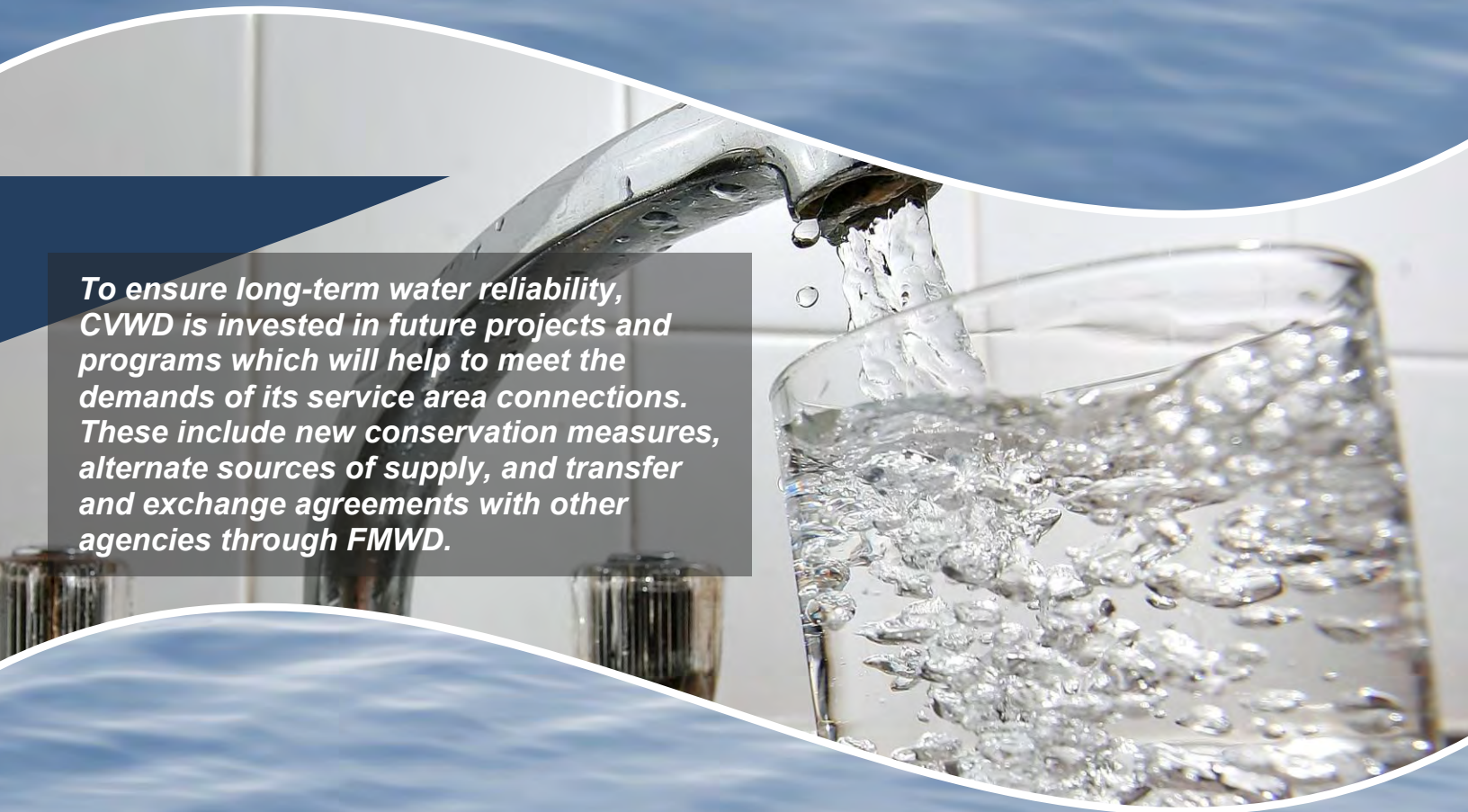
Because CVWD is not using recycled water at this time, it is not practicable to provide a recycled water optimization plan.

To determine if a recycled water project is cost-effective, cost/benefit analyses must be conducted for each potential project. This raises the issue of technical and economic feasibility of a recycled water project requiring a relative comparison to alternative water supply options. Analyses indicate that capital costs of water recycling in CVWD's service area exceed the cost of purchasing additional imported water from MWD.

CVWD will continue to conduct cost/benefit analyses for various recycled water projects and seek creative solutions in coordination with MWD and other cooperative agencies. These include solutions for funding, regulatory requirements, institutional arrangements, and public acceptance.

# SECTION 7: FUTURE SUPPLY PROJECTS & PROGRAMS

*To ensure long-term water reliability, CVWD is invested in future projects and programs which will help to meet the demands of its service area connections. These include new conservation measures, alternate sources of supply, and transfer and exchange agreements with other agencies through FMWD.*





## SECTION 7: FUTURE WATER SUPPLY PROJECTS & PROGRAMS

### 7.1 OVERVIEW

In general, CVWD continually reviews practices that will provide its customers with adequate and reliable supplies. As discussed in previous sections, CVWD is dedicated to maximizing its supply sources while reducing its dependency on imported supplies. CVWD considers plans for alternate sources such as recycled, greywater, and rainwater harvesting. This section discusses planned and potential future water supply projects and programs, while updating existing plans from 2010 as well as presenting new plans.

### 7.2 MWD REGIONAL SUPPLY PROJECTS & PROGRAMS

MWD is implementing water supply alternative strategies for the region and on behalf of member agencies to ensure available water in the future, including:



- Conservation
- Water recycling & groundwater recovery
- Storage and groundwater management programs within the region
- Storage related to SWP & CRA
- Other water supply management programs outside of the region

MWD has made investments in conservation and supply augmentation as part of its long-term water management strategy. MWD's approach to a long-term water management strategy was to develop an IRP to include many supply sources. MWD's IRP was updated in 2015.

MWD's IRP projects demands and identifies a mix of supplies to meet those demands. These supplies include desalination, recycling, conservation, brackish groundwater recovery and conjunctive use. MWD has financial incentive programs in place for local agencies to develop these supplies. FMWD, as a member agency of MWD, supports these incentive programs and contributes to these financial incentives through its payments for water from MWD.

### **7.3 WATER MANAGEMENT TOOLS**

Resource optimization, such as local groundwater, storm water recharge, and recycled feasibility studies to minimize the needs for imported water, is key for CVWD to meet future water demands. CVWD can meet projected demands with existing facilities and distribution systems. With the eventual replacement of older wells with new and more efficient wells in addition to the continued efforts in reducing water waste, CVWD can meet projected demands with existing facilities and distribution systems.

### **7.4 TRANSFER OR EXCHANGE OPPORTUNITIES**

At this time, CVWD is not currently involved in any transfer or exchange opportunities.

## **7.5 PLANNED WATER SUPPLY PROJECTS & PROGRAMS**

### **GROUNDWATER RECHARGE**

CVWD is working towards the development of the Crescenta Valley County Park Multiuse Project. This Project will allow CVWD to increase groundwater storage in the Basin by installation and maintenance of underground infiltration galleries underneath portions of the existing park. This will be accomplished by utilizing the existing Los Angeles County flood control channels (Verdugo Wash) and surface flow within the Crescenta Valley to divert storm water during the rainy season and capturing dry weather flow to proposed underground infiltration basins within the recreational areas. The project will potentially increase the local water supply by an annual average of 340 AFY, thus enhancing CVWD's groundwater resource and reducing dependence on imported supplies. Also, through the process of capture, treatment, and reuse of storm water and dry weather flow, the project could potentially reduce pollutant load from contaminating the Los Angeles River.

### **GROUNDWATER RECOVERY (CVWD WELL NO. 2 WELLHEAD TREATMENT)**

The installation of an AROnite biological nitrate removal treatment facility to reactivate CVWD's Well No. 2 at their Ordunio Reservoir is currently in the design phase. When completed, this treatment facility will increase CVWD's ability to pump its adjudicated rights within the Verdugo Basin, utilize a local water source, reduce CVWD's dependence on imported water from MWD purchased through FMWD, and reduce nitrates levels in the groundwater pumped from the Basin.

### **LADWP INTERCONNECTION**

CVWD will be installing a new emergency interconnection with LADWP that should be complete by the end of 2016. LADWP/CVWD interconnection allows for CVWD to receive up to 2.2 cubic feet per second and have the ability to back-feed FMWD. This emergency connection would be able to supply an additional 1.9 MGD.



## NEW WELLS

CVWD is planning to replace its older groundwater wells with new modern constructed wells over a 10-year period, which started in 2015. The existing wells are between 55 to 80 years old and are reaching the end of their useful life. CVWD's current program is to perform at least two well rehabilitations a year, which includes cleaning the well casing with chemical treatment and installation of steel liner to extend the life of a well. **Table 7-1** shows CVWD's planned schedule for their well replacements.

**Table 7-1: Well Replacement Schedule**

| CVWD - Well Replacement Project |                 |                    |      |      |      |      |      |      |      |      |      |      |
|---------------------------------|-----------------|--------------------|------|------|------|------|------|------|------|------|------|------|
| Well No.                        | Last Rehab Date | Fiscal Year Ending |      |      |      |      |      |      |      |      |      |      |
|                                 |                 | 2017               | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 |
| 1                               | 2013            |                    |      |      | x    |      |      |      |      |      |      | x    |
| 2                               | 2017            |                    | x    |      |      |      |      | x    |      |      |      |      |
| 5                               | 2014            |                    |      |      |      | x    |      |      |      |      |      | x    |
| 6                               | 2004            |                    |      |      |      |      |      |      |      |      | x    |      |
| 7                               | 2005            | x                  |      |      |      |      |      |      | x    |      |      |      |
| 8                               | 2014            |                    |      |      |      |      |      |      |      | x    |      |      |
| 9                               | 2014            |                    |      | x    |      |      |      |      | x    |      |      |      |
| 10                              | 2012            |                    | x    |      |      |      | x    |      |      |      | x    |      |
| 11                              | 2015            |                    |      |      | x    |      |      |      |      |      |      |      |
| 12                              | 2014            |                    |      | x    |      |      | x    |      |      | x    |      |      |
| 14                              | 2012            |                    |      |      |      | x    |      |      |      |      |      | x    |
| 15                              | 2006            |                    |      |      |      |      |      |      |      |      |      |      |
| 16                              | 2016            |                    |      |      |      |      |      | x    |      |      |      |      |

## 7.6 DESALINATION OPPORTUNITIES

There are technologies in place to remove the salts in both brackish groundwater and ocean water for potable use. CVWD does not have any projects to remove salts from local supplies to replace imported water; however, it supports these projects through MWD's programs where MWD provides incentives to other agencies for treatment.



### **7.6.1 DESALINATION OF GROUNDWATER**

There are currently no brackish groundwater opportunities within CVWD's service area.

### **7.6.2 DESALINATION OF OCEAN WATER**

CVWD does not have opportunities to directly develop desalinated supplies. It does not border the ocean and cannot participate directly in ocean desalination; however, CVWD supports MWD's Seawater Desalination Program, which provides incentives to MWD's member agencies of up to \$340 per AF for the production of desalinated ocean water.



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# SECTION 8: UWMP ADOPTION PROCESS

*CVWD recognizes that the success of its operations comes from the participation of other agencies and the general public. For this 2015 UWMP, CVWD encouraged participation prior to the public hearing and Board Adoption.*



## SECTION 8: UWMP ADOPTION PROCESS

### 8.1 OVERVIEW

Recognizing that close coordination among other relevant public agencies is the key to the success of its 2015 UWMP, CVWD worked closely with other agencies to develop and update this planning document. CVWD provided 60-day notification letters to encourage agencies to participate in the UWMP preparation process. Copies of the draft UWMP were made available for public review at the CVWD office prior to the public hearing. Shortly before the public hearing, a two-week and a one-week notice was published in the local press alerting the public of the public hearing. At a subsequent Board meeting following the public hearing, CVWD adopted the 2015 Plan on May 17, 2016. Finally, as required by the UWMP Act, this 2015 UWMP is being provided by CVWD to DWR, the California State Library, and the public within 30 days of Board adoption. Details of coordination efforts are provided in **Sections 8.1.1 and 8.2.**

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*CVWD's 2015 UWMP is a collaborative effort involving its own staff, outside agencies, and the general public.*

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### 8.1.1 WATER CODE REQUIREMENTS

Article 3 of the CWC requires that CVWD provide a minimum level of agency and public participation during the UWMP preparation process, as well as the adoption and implementation process of the UWMP. **Table 8-1** summarizes external coordination and outreach activities carried out by CVWD during the preparation of its 2015 UWMP, along with corresponding dates.

**Table 8-1: Coordination & Outreach during UWMP Preparation**

| Effort                | Description                                                                        | Date           |
|-----------------------|------------------------------------------------------------------------------------|----------------|
| "60-Day Notification" | Letters sent to Cities, County, & other Agencies                                   | March 15, 2016 |
| Public Hearing        | Public Hearing Held at CVWD Headquarters (two-week and one-week notices published) | May 17, 2016   |
| Board Adoption        | Board Adoption of UWMP by Resolution                                               | May 17, 2016   |

Also in accordance with Article 3 of the CWC, CVWD is required to distribute its official (adopted) UWMP and make it publicly available. After the adoption of the 2015 UWMP by Board Resolution No. 729 (attached as **Appendix E**) on May 17, 2016, CVWD provided copies of its adopted UWMP in accordance with **Table 8-2** below:

**Table 8-2: UWMP Distribution Following UWMP Adoption**

| Effort           | Description                                                                                          | Date          |
|------------------|------------------------------------------------------------------------------------------------------|---------------|
| DWR Submittal    | Submitted UWMP to DWR (within 30 days of adoption)                                                   | June 14, 2016 |
| Agency Submittal | Submitted UWMP to: The California State Library & County of Los Angeles (within 30 days of adoption) | June 14, 2016 |
| Public Access    | Made UWMP available to public (within 30 days of submittal to DWR)                                   | June 14, 2016 |

## 8.2 DETAILS OF COORDINATION EFFORTS

### 8.2.1 GENERAL PUBLIC COORDINATION

To meet the CWC and to provide for its own benefit, CVWD has actively solicited community participation during the UWMP preparation and adoption process by encouraging the following:

- Encouraging attendance and participation in Board Meetings prior to the actual UWMP Public Hearing as part of CVWD's ongoing community outreach efforts
- Soliciting comments on the UWMP while providing copies of its Draft 2015 UWMP at the CVWD office and on its website
- Holding a public hearing for the express purpose of inviting UWMP comments and opening the floor for public comments to be received

On May 17, 2016, CVWD held a Public Hearing to receive comments on the 2015 UWMP Draft. Notification of the public meeting for consideration of adoption of CVWD's draft UWMP was printed in a local newspaper, a copy of which is provided in **Appendix F**. All comments received prior to and during the Public Hearing were taken into consideration in the preparation of the final report. No comments were received during the public hearing.

### 8.2.2 OUTSIDE AGENCY COORDINATION

CVWD coordinated the development of this UWMP with several outside agencies and the cities which reside in CVWD's service area.

All of CVWD's water supply planning relates to the policies, rules, and regulations of its regional and local providers. CVWD is dependent on imported water from MWD via FMWD and local groundwater from the Basin which is an adjudicated basin within the ULARA. CVWD is also a member of the Administrative Committee, which oversees the ULARA Watermaster. The Watermaster is responsible for coordinating all groundwater pumping activities within the Basin. As such, CVWD involved these entities in the development of its 2015 Draft UWMP at various levels of contribution as summarized in **Table 8-3**.

**Table 8-3: UWMP Coordination Efforts**

| Agency                       | Helped<br>Plan<br>Prep. | Contacted<br>for<br>Assistance | Comments<br>on Draft | Notified<br>of Public<br>Hearing | Attended<br>Public<br>Hearing |
|------------------------------|-------------------------|--------------------------------|----------------------|----------------------------------|-------------------------------|
| FMWD                         | X                       | X                              | X                    | X                                | X                             |
| City of Glendale             |                         | X                              |                      | X                                |                               |
| City of La Cañada Flintridge |                         | X                              |                      | X                                |                               |
| LA County                    |                         | X                              |                      | X                                |                               |

### 8.3 UWMP SUBMITTAL

CVWD's final 2015 UWMP was approved by its Board of Directors on May 17, 2016. This final plan was submitted to DWR within 30 days of Board approval and includes all information necessary to meet the requirements of CWC Division 6, Part 2.6 (Urban Water Management Planning).

By June 14, 2016, CVWD's approved 2015 UWMP was filed with DWR, California State Library, County of Los Angeles, and cities within its service area. CVWD will make the plan available on their website for public review no later than 30 days after filing with DWR.

# APPENDICES A - I





## **Appendix A: ULARA Judgment**

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**Crescenta Valley Water District 2015 Urban Water Management Plan**

1  
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6  
7  
8 SUPERIOR COURT OF THE STATE OF CALIFORNIA  
9 FOR THE COUNTY OF LOS ANGELES  
10

11 THE CITY OF LOS ANGELES, )  
12 )  
13 Plaintiff, ) No. 650079  
14 )  
15 vs. ) JUDGMENT  
16 )  
17 )  
18 CITY OF SAN FERNANDO, ET AL. )  
19 )  
20 Defendants. )  
21 )  
22 )  
23 )  
24 )  
25 )  
26 )  
27 )  
28 )

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17  
18 There follows by consecutive paging a Table of Contents (pages  
19 i. to vi.), Recitals (page 1), Definitions and List of  
20 Attachments (pages 1 to 6), Designation of Parties (page 6),  
21 Declaration re Geology and Hydrology (pages 6 to 12),  
22 Declaration of Rights (pages 12 to 21), Injunctions (pages 21  
23 to 22), Continuing Jurisdiction (page 23), Watermaster (pages  
24 23 to 29), Physical Solution (pages 29 to 34), and  
25 Miscellaneous Provisions (pages 34 to 35), and Attachments  
26 (pages 36 to 46). Each and all of said several parts  
27 constitute a single integrated Judgment herein.  
28

1 1. RECITALS

2 This matter was originally tried before the Honorable Edmund M.  
3 Moor, without jury, commencing on March 1, 1966, and concluding with  
4 entry of Findings, Conclusions and Judgment on March 14, 1968, after  
5 more than 181 trial days. Los Angeles appealed from said judgment and  
6 the California Supreme Court, by unanimous opinion, (14 Cal. 3d 199)  
7 reversed and remanded the case; after trial of some remaining issues  
8 on remand, and consistent with the opinion of the Supreme Court, and  
9 pursuant to stipulations, the Court signed and filed Findings of Fact  
10 and Conclusions of Law. Good cause thereby appearing,

11 IT IS ORDERED, ADJUDGED AND DECREED:

12 2. DEFINITIONS AND ATTACHMENTS

13 2.1 Definitions of Terms. As used in this Judgment, the  
14 following terms shall have the meanings herein set forth:  
15

16 [1] Basin or Ground Water Basin -- A subsurface geologic  
17 formation with defined boundary conditions, containing a ground  
18 water reservoir, which is capable of yielding a significant  
19 quantity of ground water.

20 [2] Burbank -- Defendant City of Burbank.

21 [3] Crescenta Valley -- Defendant Crescenta Valley County  
22 Water district.

23 [4] Colorado Aqueduct -- The aqueduct facilities and system  
24 owned and operated by MWD for the importation of water from the  
25 Colorado River to its service area.

26 [5] Deep Rock -- Defendant Evelyn M. Pendleton, dba Deep  
27 Rock Artesian Water Company.  
28

1           [6] Delivered Water -- Water utilized in a water supply  
2 distribution system, including reclaimed water.

3           [7] Eagle Rock Basin -- The separate ground water basin  
4 underlying the area shown as such on Attachment "A".

5           [8] Extract or Extraction -- To produce ground water, or  
6 its production, by pumping or any other means.

7           [9] Fiscal Year -- July 1 through June 30 of the following  
8 calendar year.

9           [10] Foremost -- Defendant Foremost Foods Company, successor  
10 to defendant Sparkletts Drinking Water Corp.

11           [11] Forest Lawn -- Collectively, defendants Forest Lawn  
12 Cemetery Association, Forest Lawn Company, Forest Lawn Memorial-  
13 Park Association, and American Security and Fidelity Corporation.

14           [12] Gage F-57 -- The surface stream gaging station operated  
15 by Los Angeles County Flood Control District and situated in Los  
16 Angeles Narrows immediately upstream from the intersection of the  
17 Los Angeles River and Arroyo Seco, at which point the surface  
18 outflow from ULARA is measured.

19           [13] Glendale -- Defendant City of Glendale.

20           [14] Ground Water -- Water beneath the surface of the ground  
21 and within the zone of saturation.

22           [15] Hersch & Plumb -- Defendants David and Eleanor A.  
23 Hersch and Gerald B. and Lucille Plumb, successors to Wellesley  
24 and Duckworth defendants.

25           [16] Import Return Water -- Ground water derived from  
26 percolation attributable to delivered imported water.

1 [17] Imported Water -- Water used within ULARA, which is  
2 derived from sources outside said watershed. Said term does not  
3 include inter-basin transfers wholly within ULARA.

4 [18] In Lieu Storage -- The act of accumulating ground water  
5 in a basin by intentional reduction of extractions of ground  
6 water which a party has a right to extract.

7 [19] Lockheed -- Defendant Lockheed Aircraft Corporation.

8 [20] Los Angeles -- Plaintiff City of Los Angeles, acting by  
9 and through its Department of Water and Power.

10 [21] Los Angeles Narrows -- The physiographic area northerly  
11 of Gage F-57 bounded on the east by the San Rafael and Repetto  
12 Hills and on the west by the Elysian Hills, through which all  
13 natural outflow of the San Fernando Basin and the Los Angeles  
14 River flow en route to the Pacific Ocean.

15 [22] MWD -- The Metropolitan Water District of Southern  
16 California, a public agency of the State of California.

17 [23] Native Safe Yield -- That portion of the safe yield of  
18 a basin derived from native waters.

19 [24] Native Waters -- Surface and ground waters derived from  
20 precipitation within ULARA.

21 [25] Overdraft -- A condition which exists when the total  
22 annual extractions of ground water from a basin exceed its safe  
23 yield, and when any temporary surplus has been removed.

24 [26] Owens-Mono Aqueduct -- The aqueduct facilities owned  
25 and operated by Los Angeles for importation to ULARA water from  
26 the Owens River and Mono Basin watersheds easterly of the Sierra-  
27 Nevada in Central California.

1 [27] Private Defendants -- Collectively, all of those  
2 defendants who are parties, other than Glendale, Burbank, San  
3 Fernando and Crescenta Valley.

4 [28] Reclaimed Water -- Water which, as a result of  
5 processing of waste water, is made suitable for and used for a  
6 controlled beneficial use.

7 [29] Regulatory Storage Capacity -- The volume of storage  
8 capacity of San Fernando Basin which is required to regulate the  
9 safe yield of the basin, without significant loss, during any  
10 long-term base period of water supply.

11 [30] Rising Water -- The effluent from a ground water basin  
12 which appears as surface flow.

13 [31] Rising Water Outflow -- The quantity of rising water  
14 which occurs within a ground water basin and does not rejoin the  
15 ground water body or is not captured prior to flowing past a  
16 point of discharge from the basin.

17 [32] Safe Yield - The maximum quantity of water which can be  
18 extracted annually from a ground water basin under a given set of  
19 cultural conditions and extraction patterns, based on the long-  
20 term supply, without causing a continuing reduction of water in  
21 storage.

22 [33] San Fernando -- Defendant City of San Fernando.

23 [34] San Fernando Basin -- The separate ground water basin  
24 underlying the area shown as such on Attachment "A".

25 [35] Sportsman's Lodge -- Defendant Sportsman's Lodge  
26 Banquet Association.

27 [36] Stored Water -- Ground water in a basin consisting of  
28 either (1) imported or reclaimed water which is intentionally

1 spread, or (2) safe yield water which is allowed to accumulate by  
2 In Lieu Storage. Said ground waters are distinguished and  
3 separately accounted for in a ground water basin, notwithstanding  
4 that the same may be physically commingled with other waters in  
5 the basin.

6 [37] Sylmar Basin -- The separate ground water basin  
7 underlying the area indicated as such on Attachment "A".

8 [38] Temporary Surplus - The amount of ground water which  
9 would be required to be removed from a basin in order to avoid  
10 waste under safe yield operation.

11 [39] Toluca Lake -- Defendant Toluca Lake Property Owners  
12 Association.

13 [40] ULARA or Upper Los Angeles River Area - The Upper Los  
14 Angeles River watershed, being the surface drainage area of the  
15 Los Angeles River tributary to Gage F-57.

16 [41] Underlying Pueblo Waters -- Native ground waters in the  
17 San Fernando Basin which underlie safe yield and stored waters.

18 [42] Valhalla -- Collectively, Valhalla Properties, Valhalla  
19 Memorial Park, Valhalla Mausoleum Park.

20 [43] Van de Kamp -- Defendant Van de Kamp's Holland Dutch  
21 Bakers, Inc.

22 [44] Verdugo Basin -- The separate ground water basin  
23 underlying the area shown as such on Attachment "A".

24 [45] Water Year -- October 1 through September 30 of the  
25 following calendar year.

26 Geographic Names, not herein specifically defined, are used to  
27 refer to the places and locations thereof as shown on Attachment "A".  
28

2.2 List of Attachments. There are attached hereto the following documents, which are by this reference incorporated in this Judgment and specifically referred to in the text hereof:

"A" -- Map entitled "Upper Los Angeles River Area", showing Separate Basins therein.

"B" -- List of "Dismissed Parties".

"C" -- List of "Defaulted Parties".

"D" -- List of "Disclaiming Parties".

"E" -- List of "Prior Stipulated Judgments."

"F" -- List of "Stipulated Non-Consumptive or Minimal-Consumptive Use Practices."

"G" -- Map entitled "Place of Use and Service Area of Private Defendants."

"H" -- Map entitled "Public Agency Water Service Areas."

### 3. PARTIES

3.1 Defaulting and Disclaiming Defendants. Each of the defendants listed on Attachment "C" and Attachment "D" is without any right, title or interest in, or to any claim to extract ground water from ULARA or any of the separate ground water basins therein.

3.2 No Rights Other Than as Herein Declared. No party to this action has any rights in or to the waters of ULARA except to the extent declared herein.

#### 4. DECLARATION RE GEOLOGY AND HYDROLOGY

#### 4.1 Geology.

4.1.1 ULARA. ULARA (or Upper Los Angeles River Area), is the watershed or surface drainage area tributary to the Los

1 Angeles River at Gage F-57. Said watershed contains a total of  
2 329,000 acres, consisting of approximately 123,000 acres of  
3 valley fill area and 206,000 acres of hill and mountain area,  
4 located primarily in the County of Los Angeles, with a small  
5 portion in the County of Ventura. Its boundaries are shown on  
6 Attachment "A". The San Gabriel Mountains form the northerly  
7 portion of the watershed, and from them two major washes--the  
8 Pacoima and the Tujunga--discharge southerly. Tujunga Wash  
9 traverses the valley fill in a southerly direction and joins the  
10 Los Angeles River, which follows an easterly course along the  
11 base of the Santa Monica Mountains before it turns south through  
12 the Los Narrows. The waters of Pacoima Wash as and when they  
13 flow out of Sylmar Basin are tributary to San Fernando Basin.  
14 Lesser tributary washes run from the Simi Hills and the Santa  
15 Susana Mountains in the westerly portion of the watershed. Other  
16 minor washes, including Verdugo Wash, drain the easterly portion  
17 of the watershed which consists of the Verdugo Mountains, the  
18 Elysian, San Rafael and Repetto Hills. Each of said washes is a  
19 non-perennial stream whose flood flows and rising waters are  
20 naturally tributary to the Los Angeles River. The Los Angeles  
21 River within ULARA and most of said tributary natural washes have  
22 been replaced, and in some instances relocated, by concrete-lined  
23 flood control channels. There are 85.3 miles of such channels  
24 within ULARA, 62% of which have lined concrete bottoms.

25 4.1.2 San Fernando Basin. San Fernando Basin is the major  
26 ground water basin in ULARA. It underlies 112,047 acres and is  
27 located in the area shown as such on Attachment "A". Boundary  
28 conditions of the San Fernando Basin consist on the east and

1 northeast of alluvial contacts with non-waterbearing series along  
2 the San Rafael Hills and Verdugo Mountains and the Santa Susana  
3 Mountains and Simi Hills on the northwest and west and the Santa  
4 Monica Mountains on the south. Water-bearing material in said  
5 basin extends to at least 1000 feet below the surface. Rising  
6 water outflow from the San Fernando Basin passes its downstream  
7 and southerly boundary in the vicinity of Gage F-57, which is  
8 located in Los Angeles Narrows about 300 feet upstream from the  
9 Figueroa Street (Dayton Street) Bridge. The San Fernando Basin  
10 is separated from the Sylmar Basin on the north by the eroded  
11 south limb of the Little Tujunga Syncline which causes a break in  
12 the ground water surface of about 40 to 50 feet.

13 4.1.3 Sylmar Basin. Sylmar Basin underlies 5,565 acres and  
14 is located in the area shown as such on Attachment "A". Water-  
15 bearing material in said basin extends to depths in excess of  
16 12,000 feet below the surface. Boundary conditions of Sylmar  
17 Basin consist of the San Gabriel Mountains on the north, a  
18 topographic divide in the valley fill between the Mission Hills  
19 and San Gabriel Mountains on the west, the Mission Hills on the  
20 southwest, Upper Lopez Canyon Saugus Formation on the east, along  
21 the east bank of Pacoima Wash, and the eroded south limb of the  
22 Little Tujunga Syncline on the south.

23 4.1.4 Verdugo Basin. Verdugo Basin underlies 4,400 acres  
24 and is located in the area shown as such on Attachment "A".  
25 Boundary conditions of Verdugo Basin consist of the San Gabriel  
26 Mountains on the north, the Verdugo Mountains on the south and  
27 southwest, the San Rafael Hills on the southeast and the  
28 topographic divide on the east between the drainage area that is

1 tributary to the Tujunga Wash to the west and Verdugo Wash to the  
2 east, the ground water divide on the west between Monk Hill-  
3 Raymond Basin and the Verdugo Basin on the east and a submerged  
4 dam constructed at the mouth of Verdugo Canyon on the south.

5 4.1.5 Eagle Rock Basin. Eagle Rock Basin underlies 807  
6 acres and is located in the area shown as such on Attachment "A".  
7 Boundary conditions of Eagle Rock Basin consist of the San Rafael  
8 Hills on the north and west and the Repetto Hills on the east and  
9 south with a small alluvial area to the southwest consisting of a  
10 topographic divide.

#### 11 4.2 Hydrology.

12 4.2.1 Water Supply. The water supply of ULARA consists of  
13 native waters, derived from precipitation on the valley floor and  
14 runoff from the hill and mountain areas, and of imported water  
15 from outside the watershed. The major source of imported water  
16 has been from the Owens-Mono Aqueduct, but additional supplies  
17 have been and are now being imported through MWD from its  
18 Colorado Aqueduct and the State Aqueduct.

19 4.2.2 Ground Water Movement. The major water-bearing  
20 formation in ULARA is the valley fill material bounded by hills  
21 and mountains which surround it. Topographically, the valley-  
22 fill area has a generally uniform grade in a southerly and  
23 easterly direction with the slope gradually decreasing from the  
24 base of the hills and mountains to the surface drainage outlet at  
25 Gage F-57. The valley fill material is a heterogeneous mixture  
26 of clays, silts, sand and gravel laid down as alluvium. The  
27 valley fill is of greatest permeability along and easterly of  
28 Pacoima and Tujunga Washes and generally throughout the eastern

1 portion of the valley fill area, except in the vicinity of  
2 Glendale where it is of lesser permeability. Ground water occurs  
3 mainly within the valley fill, with only negligible amounts  
4 occurring in hill and mountain areas. There is no significant  
5 ground water movement from the hill and mountain formations into  
6 the valley fill. Available geologic data do not indicate that  
7 there are any sources of native ground water other than those  
8 derived from precipitation. Ground water movement in the valley  
9 fill generally follows the surface topography and drainage except  
10 where geologic or man-made impediments occur or where the natural  
11 flow has been modified by extensive pumping.

12 4.2.3 Separate Ground Water Basins. The physical and  
13 geologic characteristics of each of the ground water basins,  
14 Eagle rock, Sylmar, Verdugo and San Fernando, cause impediments  
15 to inter-basin ground water flow whereby there is created  
16 separate underground reservoirs. Each of said basins contains a  
17 common source of water supply to parties extracting ground water  
18 from each of said basins. The amount of underflow from Sylmar  
19 Basin, Verdugo Basin and Eagle Rock Basin to San Fernando Basin  
20 is relatively small, and on the average has been approximately  
21 540 acre feet per year from the Sylmar Basin; 80 acre feet per  
22 year from Verdugo Basin; and 50 acre feet per year from Eagle  
23 Rock Basin. Each has physiographic, geologic and hydrologic  
24 differences, one from the other, and each meets the hydrologic  
25 definition of "basin". The extractions of water in the  
26 respective basins affect the other water users within that basin  
27 but do not significantly or materially affect the ground water  
28 levels in any of the other basins. The underground reservoirs of

1 Eagle Rock, Verdugo and Sylmar Basins are independent of one  
2 another and of the San Fernando Basin.

3 4.2.4 Safe Yield and Native Safe Yield. The safe yield and  
4 native safe yield, stated in acre feet, of the three largest  
5 basins for the year 1964-65 was as follows:

| 6 <u>Basin</u> | <u>Safe Yield</u> | <u>Native Safe Yield</u> |
|----------------|-------------------|--------------------------|
| 7 San Fernando | 90,680            | 43,660                   |
| 8 Sylmar       | 6,210             | 3,850                    |
| 9 Verdugo      | 7,150             | 3,590                    |

10 The safe yield of Eagle Rock Basin is derived from imported water  
11 delivered by Los Angeles. There is no measurable native safe  
12 yield.

13 4.2.5 Separate Basins -- Separate Rights. The rights of  
14 the parties to extract ground water within ULARA are separate and  
15 distinct as within each of the several ground water basins within  
16 said watershed.

17 4.2.6 Hydrologic Condition of Basins. The several basins  
18 within ULARA are in varying hydrologic conditions, which result  
19 in different legal consequences.

20 4.2.6.1 San Fernando Basin. The first full year of  
21 overdraft in San Fernando Basin was 1954-55. It remained in  
22 overdraft continuously until 1968, when an injunction herein  
23 became effective. Thereafter, the basin was placed on safe  
24 yield operation. There is no surplus ground water available  
25 for appropriation or overlying use from San Fernando Basin.

26 4.2.6.2 Sylmar Basin. Sylmar Basin is not in  
27 overdraft. There remains safe yield over and above the  
28 present reasonable beneficial overlying uses, from which

1 safe yield the appropriative rights of Los Angeles and San  
2 Fernando may be and have been exercised.

3 4.2.6.3 Verdugo Basin. Verdugo Basin was in  
4 overdraft for more than five consecutive years prior to  
5 1968. Said basin is not currently in overdraft, due to  
6 decreased extractions by Glendale and Crescenta Valley on  
7 account of poor water quality. However, the combined  
8 appropriative and prescriptive rights of Glendale and  
9 Crescenta Valley are equivalent to the safe yield of the  
10 Basin. No private overlying or appropriative rights exist  
11 in Verdugo Basin.

12 4.2.6.4 Eagle Rock Basin. The only measure water  
13 supply to Eagle Rock Basin is import return water by reason  
14 of importations by Los Angeles. Extractions by Foremost and  
15 Deep Rock under the prior stipulated judgments have utilized  
16 the safe yield of Eagle Rock Basin, and have maintained  
17 hydrologic equilibrium therein.

## 18 5. DECLARATION OF RIGHTS

### 19 5.1 Right to Native Waters.

#### 20 5.1.1 Los Angeles River and San Fernando Basin.

21 5.1.1.1 Los Angeles' Pueblo Right. Los Angeles, as  
22 the successor to all rights, claims and powers of the  
23 Spanish Pueblo de Los Angeles in regard to water rights, is  
24 the owner of a prior and paramount pueblo right to the  
25 surface waters of the Los Angeles River and the native  
26 ground waters of San Fernando Basin to meet its reasonable  
27 beneficial needs and for its inhabitants.  
28

1                   5.1.1.2 Extent of Pueblo Right. Pursuant to said  
2 pueblo right, Los Angeles is entitled to satisfy its needs  
3 and those of its inhabitants within its boundaries as from  
4 time to time modified. Water which is in fact used for  
5 pueblo right purposes is and shall be deemed needed for such  
6 purposes.

7                   5.1.1.3 Pueblo Right -- Nature and Priority of  
8 Exercise. The pueblo right of Los Angeles is a prior and  
9 paramount right to all of the surface waters of the Los  
10 Angeles River, and native ground water in San Fernando  
11 Basin, to the extent of the reasonable needs and uses of Los  
12 Angeles and its inhabitants throughout the corporate area of  
13 Los Angeles, as its boundaries may exist from time to time.  
14 To the extent that the Basin contains native waters and  
15 imported waters, it is presumed that the first water  
16 extracted by Los Angeles in any water year is pursuant to  
17 its pueblo right, up to the amount of the native safe yield.  
18 The next extractions by Los Angeles in any year are deemed  
19 to be from import return water, followed by stored water, to  
20 the full extent of Los Angeles' right to such import return  
21 water and stored water. In the event of need to meet water  
22 requirements of its inhabitants, Los Angeles has the  
23 additional right, pursuant to its pueblo right, withdraw  
24 temporarily from storage Underlying Pueblo Waters, subject  
25 to an obligation to replace such water as soon as practical.

26                   5.1.1.4 Rights of Other Parties. No other party to  
27 this action has any right in or to the surface waters of the  
28

1 Los Angeles River or the native safe yield of the San  
2 Fernando Basin.

3 5.1.2 Sylmar Basin Rights.

4 5.1.2.1 No Pueblo Rights. The pueblo right of Los  
5 Angeles does not extend to or include ground waters in  
6 Sylmar Basin.

7 5.1.2.2 Overlying Rights. Defendants Moordigian  
8 and Hersch & Plumb own lands overlying Sylmar Basin and have  
9 a prior correlative right to extract native waters from said  
10 Basin for reasonable beneficial uses on their said overlying  
11 lands. Said right is appurtenant to said overlying lands  
12 and water extracted pursuant thereto may not be exported  
13 from said lands nor can said right be transferred or  
14 assigned separate and apart from said overlying lands.

15 5.1.2.3 Appropriative Rights of San Fernando and  
16 Los Angeles. San Fernando and Los Angeles own appropriative  
17 rights, of equal priority, to extract and put to reasonable  
18 beneficial use for the needs of said cities and their  
19 inhabitants, native waters of the Sylmar Basin in excess of  
20 the exercised reasonable beneficial needs of overlying  
21 users. Said appropriative rights are:

22 San Fernando 3,580 acre feet

23 Los Angeles 1,560 acre feet.

24 5.1.2.4 No Prescription. The Sylmar Basin is not  
25 presently in a state of overdraft and no rights by  
26 prescription exist in said Basin against any overlying or  
27 appropriative water user.

1                   5.1.2.5 Other Parties. No other party to this  
2 action owns or possesses any right to extract native ground  
3 waters from the Sylmar Basin.

4                   5.1.3 Verdugo Basin Rights.

5                   5.1.3.1 No Pueblo Rights. The pueblo right of Los  
6 Angeles does not extend to or include ground water in  
7 Verdugo Basin.

8                   5.1.3.2 Prescriptive Rights of Glendale and  
9 Crescenta Valley. Glendale and Crescenta Valley own  
10 prescriptive rights as against each other and against all  
11 private overlying or appropriative parties in the Verdugo  
12 Basin to extract, with equal priority, the following  
13 quantities of water from the combined safe yield of native  
14 and imported waters in Verdugo Basin:

15                               Glendale                               3,856 acre feet

16                               Crescenta Valley                               3,294 acre feet.

17                   5.1.3.3 Other Parties. No other party to this  
18 action owns or possesses any right to extract native ground  
19 waters from the Verdugo Basin.

20                   5.1.4 Eagle Rock Basin Rights.

21                   5.1.4.1 No Pueblo Rights. The pueblo right of Los  
22 Angeles does not extend to or include ground water in Eagle  
23 Rock Basin.

24                   5.1.4.2 No Rights in Native Waters. The Eagle Rock  
25 Basin has no significant or measurable native safe yield and  
26 no parties have or assert any right or claim to native  
27 waters in said Basin.

28                   5.2 Rights to Imported Waters.

1           5.2.1 San Fernando Basin Rights.

2               5.2.1.1 Rights to Recapture Import Return Water.

3           Los Angeles, Glendale, Burbank and San Fernando have each  
4           caused imported waters to be brought into ULARA and to be  
5           delivered to lands overlying the San Fernando Basin, with  
6           the result that percolation and return flow of such  
7           delivered water has caused imported waters to become a part  
8           of the safe yield of San Fernando Basin. Each of said  
9           parties has a right to extract from San Fernando Basin that  
10          portion of the safe yield of the Basin attributable to such  
11          import return waters.

12           5.2.1.2 Rights to Store and Recapture Stored Water.

13          Los Angeles has heretofore spread imported water directly in  
14          San Fernando Basin. Los Angeles, Glendale, Burbank and San  
15          Fernando each have rights to store water in San Fernando  
16          Basin by direct spreading or in lieu practices. To the  
17          extent of any future spreading or in lieu storage of import  
18          water or reclaimed water by Los Angeles, Glendale, Burbank  
19          or San Fernando, the party causing said water to be so  
20          stored shall have a right to extract an equivalent amount of  
21          ground water from San Fernando Basin. The right to extract  
22          waters attributable to such storage practices is an  
23          undivided right to a quantity of water in San Fernando Basin  
24          equal to the amount of such Stored Water to the credit of  
25          any party, as reflected in Watermaster records.

26           5.2.1.3 Calculation of Import Return Water and  
27          Stored Water Credits. The extraction rights of Los Angeles,  
28          Glendale, Burbank and San Fernando in San Fernando Basin in

1 any year, insofar as such rights are based upon import  
2 return water, shall only extend to the amount of any  
3 accumulated import return water credit of such party by  
4 reason of imported water delivered after September 30, 1977.  
5 The annual credit for such import return water shall be  
6 calculated by Watermaster based upon the amount of delivered  
7 water during the preceding water year, as follows:

8 Los Angeles: 20.8% of all delivered water  
9 (including reclaimed water) to  
10 valley fill lands of San  
11 Fernando Basin.

12 San Fernando: 26.3% of all imported and  
13 reclaimed water delivered to  
14 valley-fill lands of San  
15 Fernando Basin.

16 Burbank: 20.0% of all delivered water  
17 (including reclaimed water) to  
18 San Fernando Basin and its  
19 tributary hill and mountain  
20 areas.

21 Glendale: 20.0% of all delivered water  
22 (including reclaimed water) to  
23 San Fernando Basin and its  
24 tributary hill and mountain  
25 areas (i.e., total delivered  
26 water, [including reclaimed  
27 water], less 105% of total  
28 sales by Glendale in Verdugo  
Basin and its tributary  
hills).

In calculating Stored Water credit, by reason of direct  
spreading of imported or reclaimed water, Watermaster shall  
assume that 100% of such spread water reached the ground  
water in the year spread.

#### 5.2.1.4 Cumulative Import Return Water Credits.

Any import return water which is not extracted in a given  
water year shall be carried over, separately accounted for,

1 and maintained as a cumulative credit for purposes of future  
2 extractions.

3 5.2.1.5 Overextractions. In addition to  
4 extractions of stored water, Glendale, Burbank or San  
5 Fernando may, in any water year, extract from San Fernando  
6 Basin an amount not exceeding 10% of such party's last  
7 annual credit for import return water, subject, however, to  
8 an obligation to replace such overextraction by reduced  
9 extractions during the next succeeding water year. Any such  
10 overextraction which is not so replaced shall constitute  
11 physical solution water, which shall be deemed to have been  
12 extracted in said subsequent water year.

13 5.2.1.6 Private Defendant. No private defendant is  
14 entitled to extract water from the San Fernando Basin on  
15 account of the importation of water thereto by overlying  
16 public entities.

17 5.2.2 Sylmar Basin Rights.

18 5.2.2.1 Rights to Recapture Import Return Waters.  
19 Los Angeles and San Fernando have caused imported waters to  
20 be brought into ULARA and delivered to lands overlying the  
21 Sylmar Basin with the result that percolation and return  
22 flow of such delivered water has caused imported waters to  
23 become a part of the safe yield of Sylmar Basin. Los  
24 Angeles and San Fernando are entitled to recover from Sylmar  
25 Basin such imported return waters. In calculating the  
26 annual entitlement to recapture such import return water,  
27 Los Angeles and San Fernando shall be entitled to 35.7% of  
28 the preceding water year's imported water delivered by such

1 party to lands overlying Sylmar Basin. Thus, by way of  
2 example, in 1976-77, Los Angeles was entitled to extract  
3 2370 acre feet of ground water from Sylmar Basin, based on  
4 delivery to lands overlying said Basin of 6640 acre feet  
5 during 1975-76. The quantity of San Fernando's imported  
6 water to, and the return flow therefrom, in the Sylmar Basin  
7 in the past has been of such minimal quantities that it has  
8 not been calculated.

9 5.2.2.2 Rights to Store and Recapture Stored Water.

10 Los Angeles and San Fernando each have the right to store  
11 water in Sylmar Basin equivalent to their rights in San  
12 Fernando Basin under paragraph 5.2.1.2 hereof.

13 5.2.2.3 Carry Over. Said right to recapture stored  
14 water, import return water and other safe yield waters to  
15 which a party is entitled, if not exercised in a given year,  
16 can be carried over for not to exceed five years, if the  
17 underflow through Sylmar Notch does not exceed 400 acre feet  
18 per year.

19 5.2.2.4 Private Defendants. No private defendant  
20 is entitled to extract water from within the Sylmar Basin on  
21 account of the importation of water thereto by overlying  
22 public entities.

23 5.2.3 Verdugo Basin Rights.

24 5.2.3.1 Glendale and Crescenta Valley. Glendale  
25 and Crescenta Valley own appropriative and prescriptive  
26 rights in and to the total safe yield of Verdugo Basin,  
27 without regard as to the portions thereof derived from  
28 native water and from delivered imported waters,

1 notwithstanding that both of said parties have caused waters  
2 to be imported and delivered on lands overlying Verdugo  
3 Basin. Said aggregate rights are as declared in Paragraph  
4 5.1.3.2 of these Conclusions.

5 5.2.3.2 Los Angeles. Los Angeles may have a right  
6 to recapture its import return waters by reason of delivered  
7 import water in the Basin, based upon imports during and  
8 after water year 1977-78, upon application to Watermaster  
9 not later than the year following such import and on  
10 subsequent order after hearing by the Court.

11 5.2.3.3 Private Defendants. No private defendant,  
12 as such, is entitled to extract water from within the  
13 Verdugo Basin on account of the importation of water thereto  
14 by overlying public entities.

15 5.2.4 Eagle Rock Basin Rights.

16 5.2.4.1 Los Angeles. Los Angeles has caused  
17 imported water to be delivered for use on lands overlying  
18 Eagle Rock Basin and return flow from said delivered  
19 imported water constitutes the entire safe yield of Eagle  
20 Rock Basin. Los Angeles has the right to extract or cause  
21 to be extracted the entire safe yield of Eagle Rock Basin.

22 5.2.4.2 Private Defendants. No private defendants  
23 have a right to extract water from within Eagle Rock Basin,  
24 except pursuant to the physical solution herein.

## 25 6. INJUNCTIONS

26 Each of the parties named or referred to in this Part 6, its  
27 officers, agents, employees and officials is, and they are, hereby  
28

1 ENJOINED and RESTRAINED from doing or causing to be done any of the  
2 acts herein specified:

3 6.1 Each and Every Defendant -- from diverting the surface  
4 waters of the Los Angeles River or extracting the native waters of SAN  
5 FERNANDO BASIN, or in any manner interfering with the prior and  
6 paramount pueblo right of Los Angeles in and to such waters, except  
7 pursuant to the physical solution herein decreed.

8 6.2 Each and Every Private Defendant -- from extracting ground  
9 water from the SAN FERNANDO, VERDUGO, or EAGLE ROCK BASINS, except  
10 pursuant to physical solution provisions hereof.

11 6.3 Defaulting and Disclaiming Parties (listed in Attachments  
12 "C" and "D") -- from diverting or extracting water within ULARA,  
13 except pursuant to the physical solution herein decreed.

14 6.4 Glendale -- from extracting ground water from SAN FERNANDO  
15 BASIN in any water year in quantities exceeding its import return  
16 water credit and any stored water credit, except pursuant to the  
17 physical solution; and from extracting water from VERDUGO BASIN n  
18 excess of its appropriative and prescriptive right declared herein.

19 6.5 Burbank -- from extracting ground water from SAN FERNANDO  
20 BASIN in any water year in quantities exceeding its import return  
21 water credit and any stored water credit, except pursuant to the  
22 physical solution decreed herein.

23 6.6 San Fernando -- from extracting ground water from SAN  
24 FERNANDO BASIN in any water year in quantities exceeding its import  
25 return water credit and any stored water credit, except pursuant to  
26 the physical solution herein decreed.

1       6.7 Crescenta Valley -- from extracting ground water from  
2 VERDUGO BASIN in any year in excess of its appropriative and  
3 prescriptive right declared herein.

4       6.8 Los Angeles -- from extracting ground water from SAN  
5 FERNANDO BASIN in any year in excess of the native safe yield, plus  
6 any import return water credit and stored water credit of said city;  
7 provided, that where the needs of Los Angeles require the extraction  
8 of Underlying Pueblo Waters, Los Angeles may extract such water  
9 subject to an obligation to replace such excess as soon as practical;  
10 and from extracting ground water from VERDUGO BASIN in excess of any  
11 credit for import return water which Los Angeles may acquire by reason  
12 of delivery of imported water for use overlying said basin, as  
13 hereinafter confirmed on application to Watermaster and by subsequent  
14 order of the Court.

15       6.9 Non-consumptive and Minimal Consumptive Use Parties. The  
16 parties listed in Attachment "F" are enjoined from extracting water  
17 from San Fernando Basin, except in accordance with practices specified  
18 in Attachment "F", or pursuant to the physical solution herein  
19 decreed.  
20  
21  
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24  
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26  
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28

1 7. CONTINUING JURISDICTION

2 7.1 Jurisdiction Reserved. Full jurisdiction, power and  
3 authority are retained by and reserved to the Court for purposes of  
4 enabling the Court upon application of any party or of the Watermaster  
5 by motion and upon at least 30 days' notice thereof, and after hearing  
6 thereon, to make such further or supplemental orders or directions as  
7 may be necessary or appropriate, for interpretation, enforcement or  
8 carrying out of this Judgment, and to modify, amend or amplify any of  
9 the provisions of this Judgment or to add to the provisions thereof  
10 consistent with the rights herein decreed; provided, however, that no  
11 such modification, amendment or amplification shall result in a change  
12 in the provisions of Section 5.2.1.3 or 9.2.1 hereof.

13  
14 8. WATERMASTER

15 8.1 Designation and Appointment.

16 8.1.1 Watermaster Qualification and Appointment. A  
17 qualified hydrologist, acceptable to all active public agency  
18 parties hereto, will be appointed by subsequent order of the  
19 Court to assist the Court in its administration and enforcement  
20 of the provisions of this Judgment and any subsequent orders of  
21 the Court entered pursuant to the Court's continuing  
22 jurisdiction. Such Watermaster shall serve at the pleasure of  
23 the Court, but may be removed or replaced on motion of any party  
24 after hearing and showing of good cause.

25 8.2 Powers and Duties.

26 8.2.1 Scope. Subject to the continuing supervision and  
27 control of the Court, Watermaster shall exercise the express  
28 powers, and shall perform the duties, as provided in this

1 Judgment or hereafter ordered or authorized by the Court in the  
2 exercise of the Court's continuing jurisdiction.

3 8.2.2 Requirement for Reports, Information and Records.

4 Watermaster may require any party to furnish such reports,  
5 information and records as may be reasonably necessary to  
6 determine compliance or lack of compliance by any party with the  
7 provisions of this Judgment.

8 8.2.3 Requirement of Measuring Devices. Watermaster shall

9 require all parties owning or operating any facilities for  
10 extraction of ground water from ULARA to install and maintain at  
11 all times in good working order, at such party's own expense,  
12 appropriate meters or other measuring devices satisfactory to the  
13 Watermaster.

14 8.2.4 Inspection by Watermaster. Watermaster shall make

15 inspections of (a) ground water extraction facilities and  
16 measuring devices of any party, and (b) water use practices by  
17 any party under physical solution conditions, at such times and  
18 as often as may be reasonable under the circumstances to verify  
19 reported data and practices of such party. Watermaster shall  
20 also identify and report on any new or proposed new ground water  
21 extractions by any party or non-party.

22 8.2.5 Policies and Procedures. Watermaster shall, with the

23 advice and consent of the Administrative Committee, adopt and  
24 amend from time to time Policies and Procedures as may be  
25 reasonably necessary to guide Watermaster in performance of its  
26 duties, powers and responsibilities under the provisions of this  
27 judgment.  
28

1           8.2.6 Data Collection. Watermaster shall collect and  
2 verify data relative to conditions of ULARA and its ground water  
3 basins from the parties and one or more other governmental  
4 agencies. Where necessary, and upon approval of the  
5 Administrative Committee, Watermaster may develop supplemental  
6 data.

7           8.2.7 Cooperation With Other Agencies. Watermaster may act  
8 jointly or cooperate with agencies of the United States and the  
9 State of California or any political subdivisions, municipalities  
10 or districts (including any party) to secure or exchange data to  
11 the end that the purpose of this Judgment, including its physical  
12 solution, may be fully and economically carried out.

13           8.2.8 Accounting for Non-consumptive Use. Watermaster  
14 shall calculate and report annually the non-consumptive and  
15 consumptive uses of extracted ground water by each party listed  
16 in Attachment "F".

17           8.2.9 Accounting for Accumulated Import Return Water and  
18 Stored Water. Watermaster shall record and verify additions,  
19 extractions and losses and maintain an annual and cumulative  
20 account of all (a) stored water and (b) import return water in  
21 San Fernando Basin. Calculation of losses attributable to Stored  
22 Water shall be approved by the Administrative Committee or by  
23 subsequent order of the Court. For purposes of such accounting,  
24 extractions in any water year by Glendale, Burbank or San  
25 Fernando shall be assumed to be first from accumulated import  
26 return water, second from stored water, and finally pursuant to  
27 physical solution; provided, that any such city may, by written  
28

1 notice of intent to Watermaster, alter said priority of  
2 extractions as between import return water and stored water.

3 8.2.10 Recalculation of Safe Yield. Upon request of the  
4 Administrative Committee, or on motion of any party and  
5 subsequent Court order, Watermaster shall recalculate safe yield  
6 of any basin within ULARA. If there has been a material long-  
7 term change in storage over a base period (excluding any effects  
8 of stored water) in San Fernando Basin the safe yield shall be  
9 adjusted by making a corresponding change in native safe yield of  
10 the Basin.

11 8.2.11 Watermaster Report. Watermaster shall prepare  
12 annually and (after review and approval by Administrative  
13 Committee) cause to be served on all active parties, on or before  
14 May 1, a report of hydrologic conditions and Watermaster  
15 activities within ULARA during the preceding water year.  
16 Watermaster's annual report shall contain such information as may  
17 be requested by the Administrative Committee, required by  
18 Watermaster Policies and Procedures or specified by subsequent  
19 order of this Court.

20 8.2.12 Active Party List. Watermaster shall maintain at  
21 all times a current list of active parties and their addresses.

22 8.3 Administrative Committee.

23 8.3.1 Committee to be Formed. An Administrative Committee  
24 shall be formed to advise with, request or consent to, and review  
25 actions of Watermaster. Said Administrative Committee shall be  
26 composed of one representative of each party having a right to  
27 extract ground water from ULARA, apart from the physical  
28

1 solution. Any such party not desiring to participate in such  
2 committee shall so advise Watermaster in writing.

3 8.3.2 Organization and Voting. The Administrative  
4 Committee shall organize and adopt appropriate rules and  
5 regulations to be included in Watermaster Policies and  
6 Procedures. Action of the Administrative Committee shall be by  
7 unanimous vote of its members, or of the members affected in the  
8 case of an action which affects one or more basins but less than  
9 all of ULARA. In the event of inability of the Committee to  
10 reach a unanimous position, the matter may, at the request of  
11 Watermaster or any party, be referred to the Court for resolution  
12 by subsequent order after notice and hearing.

13 8.3.3 Function and Powers. The Administrative Committee  
14 shall be consulted by Watermaster and shall request or approve  
15 all discretionary Watermaster determinations. In the event of  
16 disagreement between Watermaster and the Administrative  
17 Committee, the matter shall be submitted to the Court for review  
18 and resolution.

19 8.4 Watermaster Budget and Assessments.

20 8.4.1 Watermaster's Proposed Budget. Watermaster shall, on  
21 or before May 1, prepare and submit to the Administrative  
22 Committee a budget for the ensuing water year. The budget shall  
23 be determined for each basin separately and allocated between the  
24 separate ground water basins. The total for each basin shall be  
25 allocated between the public agencies in proportion to their use  
26 of ground water from such basin during the preceding water year.

27 8.4.2 Objections and Review. Any party who objects to the  
28 proposed budget, or to such party's allocable share thereof, may

1 apply to the Court within thirty (30) days of receipt of the  
2 proposed budget from Watermaster for review and modification.  
3 Any such objection shall be duly noticed to all interested  
4 parties and heard within thirty (30) days of notice.

5 8.4.3 Notice of Assessment. After thirty (30) days from  
6 delivery of Watermaster's proposed budget, or after the order of  
7 Court settling any objections thereto, Watermaster shall serve  
8 notice on all parties to be assessed of the amount of assessment  
9 and the required payment schedule.

10 8.4.4 Payment. All assessments for Watermaster expenses  
11 shall be payable on the dates designated in the notice of  
12 assessment.

13 8.5 Review of Watermaster Activities.

14 8.5.1 Review Procedures. All actions of Watermaster (other  
15 than budget and assessment matters, which are provided for in  
16 Paragraph 8.4.2) shall be subject to review by the Court on its  
17 own motion or on motion by any party, as follows:

18 8.5.1.1 Noticed Motion. Any party may, by a  
19 regularly noticed motion, apply to the court for review of  
20 any Watermaster's action. Notice of such motion shall be  
21 served personally or mailed to Watermaster and to all active  
22 parties.

23 8.5.1.2 De Novo Nature of Proceedings. Upon the  
24 filing of any such motion, the Court shall require the  
25 moving party to notify the active parties of a date for  
26 taking evidence and argument, and on the date so designated  
27 shall review de novo the question at issue. Watermaster's  
28 findings or decision, if any, may be received in evidence at

1 said hearing, but shall not constitute presumptive or prima  
2 facie proof of any fact in issue.

3 8.5.1.3 Decision. The decision of the Court in  
4 such proceeding shall be an appealable supplemental order in  
5 this case. When the same is final, it shall be binding upon  
6 the Watermaster and all parties.

## 8 9. PHYSICAL SOLUTION

9 9.1 Circumstances Indicating Need for Physical Solution. During  
10 the period between 1913 and 1955, when there existed temporary surplus  
11 waters in the San Fernando Basin, overlying cities and private  
12 overlying landowners undertook to install and operate water  
13 extraction, storage and transmission facilities to utilize such  
14 temporary surplus waters. If the injunction against interference with  
15 the prior and paramount rights of Los Angeles to the waters of the San  
16 Fernando and Eagle Rock Basins were strictly enforced, the value and  
17 utility of those water systems and facilities would be lost or  
18 impaired. It is appropriate to allow continued limited extraction  
19 from the San Fernando and Eagle Rock Basins by parties other than Los  
20 Angeles, subject to assurance that Los Angeles will be compensated for  
21 any cost, expense or loss incurred as a result thereof.

22 9.2 Prior Stipulated Judgments. Several defendants heretofore  
23 entered into separate stipulated judgments herein, during the period  
24 June, 1958 to November, 1965, each of which judgments was subject to  
25 the court's continuing jurisdiction. Without modification of the  
26 substantive terms of said prior judgments, the same are categorized  
27 and merged into this judgment and superseded hereby in the exercise of  
28 the Court's continuing jurisdiction, as follows:

1           9.2.1 Eagle Rock Basin Parties. Stipulating defendants  
2 Foremost and Deep Rock have extracted water from Eagle Rock  
3 Basin, whose entire safe yield consist of import return waters of  
4 Los Angeles. Said parties may continue to extract water from  
5 Eagle Rock Basin to supply their bottled drinking water  
6 requirements upon filing all required reports on said extraction  
7 with Watermaster and Los Angeles and paying Los Angeles annually  
8 an amount equal to \$21.78 per acre foot for the first 200 acre  
9 feet, and \$39.20 per acre foot for any additional water extracted  
10 in any water year.

11           9.2.2 Non-consumptive or Minimal-consumptive Operations.  
12 Certain stipulating defendants extract water from San Fernando  
13 Basin for uses which are either non-consumptive or have a minimal  
14 consumptive impact. Each of said defendants who have a minimal  
15 consumptive impact has a connection to the City of Los Angeles  
16 water system and purchases annually an amount of water at least  
17 equivalent to the consumptive loss of extracted ground water.  
18 Said defendants are:

19                   Non-Consumptive

20           Walt Disney Productions

21           Sears, Roebuck & Co.  
22  
23  
24  
25  
26  
27  
28

1                                   Minimal-Consumptive

2           Conrock Co., for itself and as successor to California  
3                   Materials Co.; Constance Ray White and Lee L. White;  
4                   Mary L. Akmadzich and Peter J. Akmadzich  
5           Livingston Rock & Gravel, for itself and as successor  
6                   to Los Angeles Land & Water Co.

7           The nature of each said defendant's water use practices is  
8           described in Attachment "F". Subject to required reports to and  
9           inspections by Watermaster, each said defendant may continue  
10          extractions for said purposes so long as in any year such party  
11          continues such non-consumptive or minimal-consumptive use  
12          practices.

13               9.2.3 Abandoned Operations. The following stipulating  
14          defendants have ceased extracting water from San Fernando Basin  
15          and no further need exists for physical solution in their behalf:

16                   Knickerbocker Plastic Company, Inc.  
17                   Carnation Company  
18                   Hidden Hills Mutual Water Company  
19                   Southern Pacific Railroad Co.  
20                   Pacific Fruit Express Co.

21               9.3 Private Defendants. There are private defendants who  
22          installed during the years of temporary surplus relatively substantial  
23          facilities to extract and utilize ground waters of San Fernando Basin.  
24          Said defendants may continue their extractions for consumptive use up  
25          to the indicated annual quantities upon payment of compensation to the  
26          appropriate city wherein their use of water is principally located, on  
27          the basis of the following physical solution:  
28

9.3.1 Private Defendants and Appropriate Cities. Said private defendants and the cities to which their said extractions shall be charged and to which physical solution payment shall be made are:

|             |   |                      | Annual Quantities<br>(acre feet) |
|-------------|---|----------------------|----------------------------------|
| Los Angeles | - | Toluca Lake          | 100                              |
|             |   | Sportsman's Lodge    | 25                               |
|             |   | Van de Kamp          | 120                              |
| Glendale    | - | Forest Lawn          | 400                              |
|             |   | Southern Service Co. | 75                               |
| Burbank     | - | Valhalla             | 300                              |
|             |   | Lockheed             | 25                               |

Provided that said private defendants shall not develop, install or operate new wells or other facilities which will increase existing extraction capacities.

9.3.2 Reports and Accounting. All extractions pursuant to this physical solution shall be subject to such reasonable reports and inspection as may be required by Watermaster.

9.3.3 Payment. Water extracted pursuant hereto shall be compensated for by annual payment to Los Angeles, and as agreed upon pursuant to paragraph 9.3.3.2 to Glendale and Burbank, thirty days from day of notice by Watermaster, on the following basis:

9.3.3.1 Los Angeles. An amount equal to what such party would have paid had water been delivered from the distribution system of Los Angeles, less the average energy cost of extraction of ground water by Los Angeles from San Fernando.

1                   9.3.3.2 Glendale or Burbank. An amount equal to  
2                   the sum of the amount payable to Los Angeles under paragraph  
3                   9.4 hereof and any additional charges or conditions agreed  
4                   upon by either such city and any private defendant.

5           9.4 Glendale and Burbank. Glendale and Burbank have each  
6           installed, during said years of temporary surplus, substantial  
7           facilities to extract and utilize waters of the San Fernando Basin.  
8           In addition to the use of such facilities to recover import return  
9           water, the distribution facilities of such cities can be most  
10          efficiently utilized by relying upon the San Fernando Basin for  
11          peaking supplies in order to reduce the need for extensive new surface  
12          storage. Glendale and Burbank may extract annual quantities of ground  
13          water from the San Fernando Basin, in addition to their rights to  
14          import return water or stored water, as heretofore declared, in  
15          quantities up to:

16                               Glendale                               5,500 acre feet

17                               Burbank                               4,200 acre feet;

18          provided, that said cities shall compensate Los Angeles annually for  
19          any such excess extractions over and above their declared rights at a  
20          rate per acre foot equal to the average MWD price for municipal and  
21          industrial water delivered to Los Angeles during the fiscal year, less  
22          the average energy cost of extraction of ground water by Los Angeles  
23          from San Fernando Basin during the preceding fiscal year. Provided,  
24          further, that ground water extracted by Forest Lawn and Southern  
25          Service Co. shall be included in the amount taken by Glendale, and the  
26          amount extracted by Valhalla and Lockheed shall be included in the  
27          amount taken by Burbank. All water taken by Glendale or Burbank  
28          pursuant hereto shall be charged against Los Angeles' rights in the

1 year of such extractions.

2 In the event of emergency, and upon stipulation or motion  
3 and subsequent order of the Court, said quantities may be enlarged in  
4 any year.

5 9.5 San Fernando. San Fernando delivers imported water on lands  
6 overlying the San Fernando Basin, by reason of which said city has a  
7 right to recover import return water. San Fernando does not have  
8 water extraction facilities in the San Fernando Basin, nor would it be  
9 economically or hydrologically useful for such facilities to be  
10 installed. Both San Fernando and Los Angeles have decreed  
11 appropriative rights and extraction facilities in the Sylmar Basin.  
12 San Fernando may extract ground water from the Sylmar Basin in a  
13 quantity sufficient to utilize its San Fernando Basin import return  
14 water credit, and Los Angeles shall reduce its Sylmar Basin  
15 extractions by an equivalent amount and receive an offsetting  
16 entitlement for additional San Fernando Basin extractions.

17 9.6 Effective Date. This physical solution shall be effective  
18 on October 1, 1978, based upon extractions during water year 1978-79.

## 20 10. MISCELLANEOUS PROVISIONS

21 10.1 Designation of Address for Notice and Service. Each party  
22 shall designate the name and address to be used for purposes of all  
23 subsequent notices and service herein by a separate designation to be  
24 filed with Watermaster within thirty (30) days after Notice of Entry  
25 of Judgment has been served. Said designation may be changed from  
26 time to time by filing a written notice of such change with the  
27 Watermaster. Any party desiring to be relieved of receiving notices  
28 of Watermaster activity may file a waiver of notice on a form to be

1 provided by Watermaster. Thereafter such party shall be removed from  
2 the Active Party list. For purposes of service on any party or active  
3 party by the Watermaster, by any other party, or by the Court, of any  
4 item required to be served upon or delivered to such party or active  
5 party under or pursuant to the Judgment, such service shall be made  
6 personally or by deposit in the United States mail, first class,  
7 postage prepaid, addressed to the designee and at the address in the  
8 latest designation filed by such party or active party.

9 10.2 Notice of Change in Hydrologic Condition -- Sylmar Basin.

10 If Sylmar Basin shall hereafter be in a condition of overdraft due to  
11 increased or concurrent appropriations by Los Angeles and San  
12 Fernando, Watermaster shall so notify the Court and parties concerned,  
13 and notice of such overdraft and the adverse effect thereof on private  
14 overlying rights shall be given by said cities as prescribed by  
15 subsequent order of the Court, after notice and hearing.

16 10.3 Judgment Binding on Successors. This Judgment and all  
17 provisions thereof are applicable to and binding upon not only the  
18 parties to this action, but also upon their respective heirs,  
19 executors, administrators, successors, assigns, lessees and licensees  
20 and upon the agents, employees and attorneys in fact of all such  
21 persons.

22 10.4 Costs. Ordinary court costs shall be borne by each party,  
23 and reference costs shall be borne as heretofore allocated and paid.

24 DATED: \_\_\_\_\_, 1979.

25  
26 \_\_\_\_\_  
27 Judge of the Superior Court  
28

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## **Appendix B: Rockhaven Well Operation & Water Sale Agreement**

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**Crescenta Valley Water District 2015 Urban Water Management Plan**

**CITY OF GLENDALE**  
**AND**  
**CRESCENTA VALLEY WATER DISTRICT**  
**ROCKHAVEN WELL OPERATION**  
**AND WATER PURCHASE/SALE AGREEMENT**

This Agreement for the operation of the Rockhaven Well and Water Purchase/Sale Agreement ("Agreement"), is made and entered between the City of Glendale acting by and through Glendale Water and Power (interchangeably referred to as "Glendale" or "GWP") and Crescenta Valley Water District (referred to as "District") (also referred to as each a "PARTY" and collectively, the "PARTIES"), on this \_\_\_\_ day of \_\_\_\_\_, 2015 ("Effective Date"), with reference to the following facts and intentions, which the PARTIES agree are true and correct to the best of their knowledge and belief:

**RECITALS**

- A. The groundwater rights of District and Glendale within the Verdugo Basin located within the Upper Los Angeles River Watershed in Los Angeles County ("Verdugo Basin") are defined by the January 26, 1979 Judgment in Los Angeles County Superior Court Case No. 650079, entitled *City of Los Angeles, a Municipal Corporation v. City of San Fernando, et. al.* ("Judgment"). The Judgment is incorporated in the Agreement by this reference as though fully set forth herein.
- B. District and Glendale are the only parties with rights in and to the Verdugo Basin. The Judgment provides that the total Safe-Yield for the Verdugo Basin is 7,150 acre-feet per year ("AF/Y"). The Judgment further adjudicates the rights of the PARTIES to the Verdugo Basin and allocates the entire Safe Yield between them.
- C. Each PARTY holds adjudicated water rights in and to the Verdugo Basin as follows: 3,856 AF/Y for GWP and 3,294 AF/Y for District.
- D. In 2011, GWP constructed a groundwater well, commonly known as the Rockhaven Well ("Well"), at 2740 Hermosa Avenue in order to pump groundwater from the Verdugo Basin for its use.
- E. The Well is capable of producing groundwater, however, the water is contaminated with nitrates, rendering the groundwater from the Well unsuitable for reasonable use without proper treatment.
- F. The District desires to operate the Well and its existing infrastructure for GWP and construct additional facilities and features through which groundwater pumped at the Well can be purchased by the District and delivered to District's nitrate treatment facility pursuant to the terms and conditions as set forth in this Agreement and District may thereafter make use of such treated water for its use.

NOW, THEREFORE, in consideration of the foregoing recitals, which are incorporated into the operative provisions of this Agreement by this reference, and for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the PARTIES hereto agree as follows:

### AGREEMENT

#### **1. ADJUDICATED RIGHTS.**

- 1.1 District recognizes and acknowledges Glendale's right to pump 3,856 AF/Y from the Verdugo Basin under the Judgment.
- 1.2 Glendale recognizes and acknowledges District's right to pump 3,294 AF/Y from the Verdugo Basin.
- 1.3 The PARTIES acknowledge that they are each entitled to pump no more than their rights as set forth herein, per the Judgment.
- 1.4 District acknowledges and agrees that nothing in this Agreement, or otherwise, shall be construed as a past, present, or future, abandonment, forfeiture or waiver by Glendale of its rights, nor any portion thereof, to the 3,856 AF/Y from the Verdugo Basin. District further acknowledges and agrees that District's past, present or future pumping from the Verdugo Basin in excess of District's right at 3,294 AF/Y shall not give rise to any right, claim or interest by District to any quantity of water in excess of District's right as set forth herein per the Judgment.

2. **TERM.** The term of this Agreement shall be for a period of 25 years commencing on the Effective Date; provided, however, that PARTIES may terminate this Agreement pursuant to Article 10, below.

3. **FINANCAL.** GWP shall invoice the District on a monthly basis, an amount based on the following three (3) components and the Five Year Cost Agreement as shown in Exhibit "A". GWP shall invoice the District using the sample form in Exhibit "B".

- a. **Existing Well and Infrastructure Cost.** District agrees to reimburse GWP for the original cost of construction of the Well and existing facilities and features thereto ("Existing Infrastructure"). The amount to be reimbursed shall be based on the 50-year life cycle of the Existing Infrastructure over the 25-year term of the lease and an agreed upon interest rate on investment. In other words, this component of the monthly payment will be 1/600 of the original cost of construction, and at the conclusion of the original term of this Agreement, half the cost will be repaid.

District acknowledges and agrees that payments made pursuant to this section shall not cause or vest any ownership interest in District in the Well. District shall own the improvements constructed by District pursuant to Section 4 of this Agreement.

- b. **Water Usage Cost.** District agrees to pay GWP for the groundwater produced from the Well at a reasonably consistent rate equal to or better than 225 gallons per minute, at a rate per acre-foot as shown in Exhibit "A".

District agrees to pay GWP for the groundwater produced, if the Well is unable to produce water at a reasonably consistent rate of 225 gallons per minute, at a rate per acre-foot as shown in Exhibit "A".

District acknowledges and agrees that the water pumped from the well shall be from the Glendale adjudicated right of 3,856 AF/Y.

District acknowledges that water currently available from the Well may not be suitable for consumption, potable or agricultural use and agrees to purchase water under this Agreement and during its term on an "as is" basis.

- c. **Land Lease Cost.** District agrees to enter into a ground lease agreement ("Lease Agreement") with the City of Glendale whereby District shall lease the land necessary to carry out the intent of this Agreement. The form of the Lease Agreement is attached hereto as Exhibit "D". The cost to lease the land for the term in Section 2 is shown in Exhibit "A".

- 3.1 District agrees to pay Glendale within 30 calendar days after receiving the invoice following the first of each month.

- 3.2 These components are based on a Cost Analysis Study dated October 2014, prepared by Raftelis Financial Consultants and attached hereto as Exhibit "C". The Cost Analysis Study, the study assumptions and the components shall be reviewed and adjusted every five (5) years from the date of this agreement.

#### 4 **IMPROVEMENTS.**

District shall, at its sole cost and expense, design and install any necessary infrastructure, equipment, facilities, or features ("Improvement(s)") including but not limited to, pumps, motors, piping, meters, small structures, electrical and telemetry systems, waste drain lines, and water mains in connection with the transportation and delivery of water from the Well to District's water treatment facility. District agrees to install a water meter at the Well to accurately record water flows in a manner acceptable to GWP. District shall obtain any necessary permits or licenses related to the construction of any Improvement at its sole cost and expense. District shall comply with all laws and regulatory standards in effect at the time of construction of any Improvement, including any requirements imposed under the California Environmental Quality Act (CEQA) and California Department of Public Health. District shall own any and all Improvements constructed.

- 5 **MAINTENANCE AND REPAIRS.** District shall, at its sole cost and expense, keep and maintain the Existing Infrastructure and any additional Improvements and shall make all necessary repairs and alterations thereto. District agrees to annually calibrate any water meter(s) installed to maintain their accuracy, and any such calibration shall be conducted in the presence of GWP staff.

- 6 **LEASE OF GLENDALE LAND BY DISTRICT.** District agrees to lease the land necessary for District to access and operate the Existing Infrastructure as well as build, maintain and operate the Improvements. The subject land is depicted in the map attached hereto as Exhibit "D". The Lease Agreement to be executed by the PARTIES shall be

concurrent to this Agreement and shall be incorporated herein by reference, for the amount and under the terms and conditions stated therein.

- 7 **WATER OPERATION.** Upon the execution of Ground Lease Agreement described in Section 6 of this Agreement, District shall be solely responsible for the cost and operations of the Existing Infrastructure and any Improvements thereon.

- 8 **GRANTS.** District shall be the lead agency for obtaining any grants from the State of California to finance the construction of the Improvements.

District shall obtain prior approval from Glendale of any future improvements not described in Section 4 of this agreement

District and GWP shall share equally the costs associated with providing matching funds as part of any grants obtained from the State of California for the project proposed herein.

The parties agree that District will apply and deduct the payments to be made by District to Glendale pursuant to Section 3 of this Agreement towards Glendale's portion of the matching funds for grants obtained pursuant to this Section 8, until such time that Glendale's matching fund portion obligation is paid in full.

- 9 **INDEMNITY.** Each PARTY agrees to indemnify, defend, and hold the other PARTY and its respective officers, employees, and agents and representatives harmless from and against any and all liability, suits, actions, proceedings, judgments, claims, losses, liens, damages, injuries (whether in contract, in tort, including personal injury, accidental death or property damage, or as part of an environmental claim, and regardless of whether the allegations are false, fraudulent or groundless), costs and expenses (including attorney fees, litigation, arbitration, mediation, appeal expenses) which in whole or in part arise out of or are connected with, or which are alleged to have arisen out of or to have been connected with, each PARTY's performance under this Agreement.

The indemnified PARTY: (i) shall promptly provide the indemnifying PARTY with written notice of any claim, demand, lawsuit, or the like for which it seeks indemnification pursuant to this Article \_\_ and provide the indemnifying PARTY with copies of any demands, notices, summons, or legal papers received in connection with such claim, demand, lawsuit, or the like; (ii) shall not settle any such claim, demand, lawsuit, or the like without the prior written consent of the indemnifying PARTY; and (iii) shall fully cooperate with the indemnifying PARTY in the defense of the claim, demand, lawsuit, or the like. A delay in notice shall not relieve the indemnifying PARTY of its indemnity obligation, except (1) to the extent the indemnifying PARTY can show it was prejudiced by the delay; and (2) the indemnifying PARTY shall not be liable for any settlement or litigation expenses incurred before the time when notice is given. This provision shall survive expiration or termination of the Agreement.

10 **TERMINATION.**

- 10.1 **Termination Right of GWP.** GWP shall have the right to terminate this Agreement upon giving written notice of such termination to District at least ninety (90) days in advance and pursuant to the notice requirements as set forth in

Section 11.9. In the event that such termination by GWP occurs then Glendale will reimburse the depreciated cost incurred by District in connection with the construction based on the 50-year life cycle of the Improvements. Under no circumstances shall GWP have a right or interest in the District's Glenwood nitrate treatment facility.

**10.2 Termination Right of District.** District shall have the right to terminate this Agreement upon giving written notice of such termination to GWP at least ninety (90) days in advance, pursuant to the notice requirements as set forth in Section 11.9. In the event of such termination by District, GWP shall not be obligated to reimburse District for any costs incurred by District in the construction, or removal, as elected by District in its sole discretion, of any Improvement. Under no circumstances shall GWP have a right or interest in the District's Glenwood nitrate treatment facility.

**10.3 Termination of Lease Agreement.** This Agreement shall automatically be terminated upon the termination of the Lease Agreement.

## **11 GENERAL PROVISIONS.**

**11.1 Assignment.** No PARTY shall assign any right or interest in this Agreement, nor delegate any duty owed, without the other PARTY'S prior written consent. Any attempted assignment or delegation shall be void and ineffective for all purposes, and shall constitute a material breach and grounds for immediate termination or suspension of this Agreement. In the event PARTIES consent to an assignment or delegation, the assignee, delegatee, or its legal representative shall agree in writing to personally assume, perform, and be bound by all of the terms of this Agreement.

**11.2 Successors.** Subject to the provision regarding assignment, above, this Agreement shall be binding on the heirs, executors, administrators, successors, and assigns of the respective PARTIES.

**11.3 Insurance.** During the term of this Agreement, District shall carry, at its own cost and expense, the following policies of insurance: (i) Insurance against loss or damage to Existing Infrastructure and any Improvements thereon, as is customarily maintained with respect to works and properties of a like character, which may be carried in conjunction with any other policies of fire and extended coverage insurance; (ii) commercial general liability (CGL) insurance with respect to District's activities in connection with this Agreement, such insurance to afford protection of up to One Million Dollars (\$1,000,000) per occurrence and Two Million Dollars (\$2,000,000) general aggregate; and (iii) Workers' Compensation insurance as necessary and required by the laws of the State of California. Upon written request, District shall deliver to GWP copies of each certificate insurance policy obtained.

**11.4 No Third-Party Beneficiaries.** This Agreement is for the benefit of PARTIES only, and is not intended to benefit any third parties. This Agreement does not

create, and shall not be construed to create, any rights enforceable by any person, partnership, corporation, joint venture, limited liability company or other form of organization, association or entity of any kind that is not a PARTY to this Agreement.

- 11.5 Attorneys' Fees.** If any action at law or in equity is brought to enforce or interpret the provisions of this Agreement, the prevailing PARTY shall be entitled to reasonable attorney's fees in addition to any other relief to which it may be entitled.
- 11.6 Construction.** The provisions of this Agreement shall be liberally construed to effectuate its purposes. The language of this Agreement shall be construed simply according to its plain meaning and shall not be construed for or against any PARTY, as each PARTY has participated in the drafting of this Agreement.
- 11.7 Entire Agreement.** In conjunction with the matters considered herein, this Agreement, and the concurrently executed Ground Lease Agreement between the Parties, shall contain the entire understanding and agreement of the PARTIES, and there have been no promises, representations, agreements, warranties or undertakings by any of the PARTIES, either oral or written, of any character or nature binding except as stated herein and the Ground Lease Agreement. This Agreement, and/or the Ground Lease Agreement, may be modified, altered or amended only by an instrument in writing, executed by the PARTIES, and by no other means. Each PARTY waives its right to claim, contest or assert that this Agreement was modified, canceled, superseded or changed by any oral agreement, course of conduct, waiver or estoppel.
- 11.8 Severability.** Should any part, term or provision of this Agreement or any document required herein to be executed be declared invalid, void or unenforceable, all remaining parts, terms and provisions hereof shall remain in full force and effect and shall in no way be invalidated, impaired or affected thereby.
- 11.9 Notices.** All notices, approvals, acceptances, and other communication required or permitted under this Agreement shall be in writing and shall be deemed validly given on the date either: 1) personally delivered to the address indicated below, or 2) on the third business day following deposit, postage prepaid, using certified mail, return receipt requested, in any U.S. Postal mailbox or at any U.S. Post Office, or 3) one business day after the dispatch date by overnight delivery service, or 4) on the date of transmission by facsimile or electronic mail to the number or e-mail address provided below. All notices shall be addressed to the following:

GLENDAL WATER AND POWER  
Attn: Ramon Abueg  
Assistant General Manager  
Glendale Water and Power  
City of Glendale

141 North Glendale Ave., 4th Level  
Glendale, CA 91206-4496  
Facsimile: (818) 552-2852  
E-mail: RAbueg@GlendaleCA.GOV

CRESCENTA VALLEY WATER DISTRICT  
Attn: Dennis Erdman  
General Manager  
2700 Foothill Boulevard  
La Crescenta, CA 91214-3516  
Facsimile: (818) 248-1659  
E-mail: derdman@cvwd.com

Any PARTY may change its address by giving the other PARTIES written notice of its new address as provided above.

**11.10 Governing Law.** This Agreement will be governed by the laws of California, without regard to conflicts of law.

**11.11 Waiver.** No waiver of any provision or consent to any action shall constitute a waiver of any other provision or consent to any other action, whether or not similar. No waiver or consent shall constitute a continuing waiver or consent or commit a PARTY to provide a waiver or consent in the future except to the extent specifically stated in writing. No waiver shall be binding unless executed in writing by the PARTY making the waiver, based on a full and complete disclosure of all material facts relevant to the waiver requested.

**11.12 Authorizations.** All individuals executing this Agreement on behalf of the respective PARTIES certify and warrant that they have the capacity, and have been duly authorized to so execute this Agreement on behalf of the entity so indicated.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their officers hereunto duly authorized on the day and year first above written.

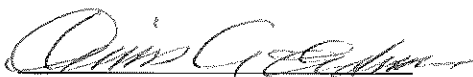
CITY OF GLENDALE



Scott Ochoa  
City Manager

Date: 2/23/15

CRESCENTA VALLEY WATER DISTRICT



Dennis Erdman  
General Manager

Dated Nov. 24, 2014

APPROVED AS TO FORM

  
Senior Assistant City Attorney  
Date 2/23/15

**EXHIBIT "A"**

**Rockhaven Well Water Purchase and Sale  
Agreement**

**Five Year Cost Agreement**

**2015 – 2019**

# Exhibit "A"

## City of Glendale and Crescenta Valley Water District Rockhaven Well Water Purchase and Sale Agreement Five Year Cost Agreement

| Year                                  | 2015                          |                               | 2016                          |                               | 2017                          |                               | 2018                          |                               | 2019                          |                               |
|---------------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
|                                       | Annual                        | Monthly                       | Annual                        | Monthly                       | Annual                        | Monthly                       | Annual                        | Monthly                       | Annual                        | Monthly                       |
| Existing Well and Infrastructure Cost | \$51,012                      | \$4,251                       | \$51,012                      | \$4,251                       | \$51,012                      | \$4,251                       | \$51,012                      | \$4,251                       | \$51,012                      | \$4,251                       |
|                                       | Cost/Ac-ft<br>(above 225 gpm) | Cost/Ac-ft<br>(below 225 gpm) | Cost/Ac-ft<br>(above 225 gpm) | Cost/Ac-ft<br>(below 225 gpm) | Cost/Ac-ft<br>(above 225 gpm) | Cost/Ac-ft<br>(below 225 gpm) | Cost/Ac-ft<br>(above 225 gpm) | Cost/Ac-ft<br>(below 225 gpm) | Cost/Ac-ft<br>(above 225 gpm) | Cost/Ac-ft<br>(below 225 gpm) |
| Water Usage Cost                      | \$276                         | \$236                         | \$290                         | \$248                         | \$305                         | \$261                         | \$321                         | \$275                         | \$337                         | \$289                         |
|                                       | Annual                        | Monthly                       | Annual                        | Monthly                       | Annual                        | Monthly                       | Annual                        | Monthly                       | Annual                        | Monthly                       |
| Land Lease Cost                       | \$15,040                      | \$1,253                       | \$15,040                      | \$1,253                       | \$15,491                      | \$1,291                       | \$15,956                      | \$1,330                       | \$16,435                      | \$1,370                       |
|                                       | Annual                        | Monthly                       | Annual                        | Monthly                       | Annual                        | Monthly                       | Annual                        | Monthly                       | Annual                        | Monthly                       |

### Notes:

- Cost shown above are based on the Cost Analysis Study and Worksheets prepared by Rafielis Financial Consultants dated September, 2014
- Cost shown above are based CVWD/GWP receiving Prop. 84, Drought Relief Grant
- Cost and Assumptions of the Cost Analysis Study and Worksheets to be reviewed and revised every 5 years, next revision in 2020.

**EXHIBIT "B"**  
**Glendale/CVWD Sample**  
**Monthly Invoice**

# EXHIBIT "B"

## MONTHLY PAYMENT FORM ROCKHAVEN WELL

Month: \_\_\_\_\_ Year: 2014

### WATER USAGE:

End-of-Month Rockhaven Well Meter Read = 17441424 cubic feet (cf)

Prior End-of-Month Rockhaven Well Meter Read = 00000000 cf

Total Usage for Month: 17,441,424 cf ÷ 43,560 = 400.40 Acre-Feet, (AF)

a) Usage for Month at 225 gpm or more: 17,441,424 cf ÷ 43,560 = 400.40 AF

b) Usage for Month at 225 gpm or less: 0.00 cf ÷ 43,560 = 0.00 AF

### WATER USAGE COST <sup>(1)</sup>:

a) \$276 per AF x 400.4 AF = \$ 110,510.40

b) \$236 per AF x 0.00 AF = \$ 0.00

**Total Water Usage Cost** \$ 110,510.40

### EXISTING WELL AND INFRASTRUCTURE COST <sup>(1)</sup>:

\$51,012 per year or \$4,251 per month \$ 4,251.00

### LAND LEASE COST <sup>(1)</sup>:

\$15,040 per year or \$1,253 per month \$ 1,253.00

**Total Payment, CVWD to Glendale** \$ 116,014.70

Approved by: \_\_\_\_\_  
Glendale

Approved by: \_\_\_\_\_  
CVWD

### NOTES:

1. Unit Costs shown are in accordance with Exhibit "A" of the Agreement.
2. Glendale and CVWD will meet prior to the of the 5<sup>th</sup> year to revised and adjust the unit costs in accordance with Section 3.2 of the Agreement

**EXHIBIT "C"**

**Cost Analysis Study**

**Dated October 2014**

**Prepared by**

**Raftelis Financial Consultants**

**Table 1**  
**Existing CVWD Water Supply Costs**

| Description                                                                   | CY 2014      | CY 2015 | CY 2016 | CY 2017 | CY 2018 | CY 2019 | CY 2020 | CY 2021 | CY 2022 | CY 2023 | CY 2024 | CY 2025 | CY 2026 | CY 2027 | CY 2028 | CY 2029 | CY 2030 |
|-------------------------------------------------------------------------------|--------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Rockhaven Well Production                                                     |              |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Average Annual Water Production (GPM)                                         |              |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Projected Rockhaven Water Production (APY)                                    | 300          | 242     | 484     | 484     | 484     | 484     | 484     | 484     | 484     | 484     | 484     | 484     | 484     | 484     | 484     | 484     | 484     |
| Production Capacity (GPM)                                                     | 400          |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Annual Average Downtime                                                       | 25%          |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| FMWD Imported Water Costs (Base Case)                                         |              |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Existing FMWD Tier 1 Imported Water Supply Costs                              |              |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| CVWD Power Costs for FMWD deliveries                                          |              |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Total Unit Cost for FMWD deliveries (BAP)                                     |              |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Projected Rockhaven Water Production (APY)                                    |              |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Annual CVWD Existing Payments to FMWD for the Rockhaven Well Production Level |              |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Grand Total                                                                   | \$25,640,763 |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |

**Table 2**  
**Rockhaven Well Future Construction Costs**

| Description                                        |     | Cost             |
|----------------------------------------------------|-----|------------------|
| <b>Rockhaven Well Project Capitalized Cost</b>     |     |                  |
| Transmission Pipe to Blending Plant (a)            |     | \$240,000        |
| Well Equipment                                     |     |                  |
| Pump & Motor                                       |     | \$90,000         |
| Electrical                                         |     | \$90,000         |
| Piping                                             |     | \$40,000         |
| SCADA/Telemetry                                    |     | \$44,000         |
| Building/Misc                                      |     | \$35,000         |
| Site work                                          |     | \$25,000         |
| Subtotal                                           |     | \$564,000        |
| <b>Construction Cost Multipliers</b>               |     |                  |
| Contingency                                        | 20% | \$112,800        |
| Engineering & Permitting                           | 15% | \$84,600         |
| Soils Engineering                                  | 1%  | \$5,640          |
| Construction Mgmt                                  | 10% | \$56,400         |
| CVWD Labor, Eqpt, Mtls                             |     | \$21,560         |
| <b>Grand Total Capital Cost (2014)</b>             |     | <b>\$845,000</b> |
| <b>Rockhaven Well Site Costs (2013)</b>            |     |                  |
| Local Wellsite Labor                               |     |                  |
| Weekly                                             | Hrs | 10               |
| Annual                                             | Hrs | 520              |
| Burdened Labor Rate (\$/hour)                      |     | \$60             |
| Annual Labor Cost                                  |     | \$31,200         |
| Materials Cost at Wellsite (\$/year)               |     | \$5,000          |
| <b>Total Annual Labor &amp; Materials</b>          |     | <b>\$36,200</b>  |
| a. The transmission line is 1,200 ft. at \$200/lf. |     |                  |

**Table 3**  
**Rockhaven Well Water Supply Alternative Analysis**

| Table 3<br>Rockhaven Well Water Supply Alternative Analysis                       |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
|-----------------------------------------------------------------------------------|--------------------------------|-----------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------------------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------|--|
| Conditional Output                                                                |                                |                                   |              |              |              |              |              |              |              | Cashflow Input (Paid to GWP) |              |               |               |               |               |               |               |             |  |
| Inputs                                                                            |                                | Cashflow Input (Production Costs) |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Description                                                                       | Amortization & Inflation Rates | CY 2014<br>Day 1                  | CY 2015<br>1 | CY 2016<br>2 | CY 2017<br>3 | CY 2018<br>4 | CY 2019<br>5 | CY 2020<br>6 | CY 2021<br>7 | CY 2022<br>8                 | CY 2023<br>9 | CY 2024<br>10 | CY 2025<br>11 | CY 2026<br>12 | CY 2027<br>13 | CY 2028<br>14 | CY 2029<br>15 |             |  |
| Amortized Compensation Schedule for 2011 GWP Construction Costs at Rockhaven Well | Period (Years)                 | CY 2011 Total                     |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
|                                                                                   | 25                             | \$1,035,841                       |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
|                                                                                   | 25                             | \$660,000                         |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
|                                                                                   |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
|                                                                                   |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Groundwater Rights Lease from GWP                                                 |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Projected Rate for Vordigo Basin GWP Leasing (SMAF)                               |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Projected Rockhaven Well Production (AFY)                                         |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| CWVD Payment to GWP for Producing Adjusted GW                                     |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Rockhaven Well Variable Incremental Production Costs                              |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Power (\$/kWh per AF)                                                             | 0%                             |                                   | \$2,664.02   | \$5,487.88   | \$5,552.52   |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Treatment & Borehole of Groundwater                                               | 3%                             |                                   | \$107        | \$113        | \$120        | \$127        | \$135        | \$143        | \$151        | \$161                        | \$170        | \$180         | \$191         | \$203         | \$215         | \$228         | \$241         |             |  |
| Other Miscellaneous O&M Costs                                                     | 3%                             |                                   | \$235        | \$240        | \$248        | \$255        | \$263        | \$271        | \$279        | \$287                        | \$296        | \$305         | \$314         | \$323         | \$333         | \$343         | \$353         |             |  |
| Total Cost (SMAF)                                                                 | 3%                             |                                   | \$1,035,841  | \$1,035,841  | \$1,035,841  | \$1,035,841  | \$1,035,841  | \$1,035,841  | \$1,035,841  | \$1,035,841                  | \$1,035,841  | \$1,035,841   | \$1,035,841   | \$1,035,841   | \$1,035,841   | \$1,035,841   | \$1,035,841   | \$1,035,841 |  |
| Projected Rockhaven Well Production (AFY)                                         |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Annual O&M Costs for Production of Rockhaven Well Water                           |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Rockhaven Well Fixed O&M Costs                                                    |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Cashflow for Rockhaven Well Water Supply (Alternative Case)                       |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| CWVD Repayment of GWP Construction Costs                                          |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| CWVD Annual Lease of Rockhaven Wellbore from GWP (25 Year Contract)               |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| CWVD GWP Production Right Lease Payment to GWP                                    |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Annual O&M Costs for Production of Rockhaven Well Water                           |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| CWVD Production Costs for Rockhaven Well Water                                    |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Total Annual CWVD Costs of Operating Rockhaven Well                               |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Grand Total 25 Yr. Expenditures for Rockhaven Well Water Supply                   |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Comparison of 25 Year Water Supply Alternatives                                   |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Annual CWVD Ceding Payments to FHWI for the Rockhaven Well Production Level       |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Loss Annual CWVD Costs of Rockhaven Well Supply Alternative                       |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Net Annual O&M Savings of Rockhaven Well vs. Imported Supply                      |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Discount Rate of Return for 25 Year Cashflow                                      |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Annual Payments to GWP from CWVD                                                  |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Reimbursements for GWP Construction Costs at Well                                 |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Lease of Rockhaven Wellbore                                                       |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Lease of Groundwater Rights from GWP (Water)                                      |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |
| Rockhaven Production Payments to GWP (SMAF)                                       |                                |                                   |              |              |              |              |              |              |              |                              |              |               |               |               |               |               |               |             |  |

## Rockhaven Well

|                                              | Total Investment | Period |  |
|----------------------------------------------|------------------|--------|--|
| GWP Construction Costs at Rockhaven Well     | \$1,095,841      | 50     |  |
| Lease of Rockhaven Wellsite from GWP         | \$376,000        | 25     |  |
| Lease of Water Rights from GWP               |                  |        |  |
|                                              |                  |        |  |
| Rockhaven Well Fixed O&M                     | 2013 Price       |        |  |
| Treatment O&M (Variable)                     | \$220            |        |  |
| Other O&M (Variable)                         | \$10             |        |  |
| Power O&M (Variable)                         | \$95             |        |  |
| Total Annual O&M Rockhaven                   |                  |        |  |
|                                              |                  |        |  |
| Total Annual Expenditures Rockhaven Wellsite |                  |        |  |

## FMWD Import

|                                     |  |  |  |
|-------------------------------------|--|--|--|
| Imported Water Supply Equivalent    |  |  |  |
| Power Costs of Delivery             |  |  |  |
| Total Import Expenditure Equivalent |  |  |  |
|                                     |  |  |  |
| Net Annual Rockhaven Savings        |  |  |  |

Well and Pipeline Construction Cost  
Subtotal

## Annual Payments to GWP

|                                          |  |  |  |
|------------------------------------------|--|--|--|
| GWP Construction Costs at Rockhaven Well |  |  |  |
| Lease of Rockhaven Wellsite from GWP     |  |  |  |
| Lease of Water Rights from GWP           |  |  |  |
|                                          |  |  |  |
| Annual Payments to GWP                   |  |  |  |

## Rockhaven Well

| Rockhaven Well                               |                  |  |  |        |  |  |  |  |  |  |
|----------------------------------------------|------------------|--|--|--------|--|--|--|--|--|--|
|                                              | Total Investment |  |  | Period |  |  |  |  |  |  |
| GWP Construction Costs at Rockhaven Well     |                  |  |  |        |  |  |  |  |  |  |
| Lease of Rockhaven Wellsite from GWP         |                  |  |  |        |  |  |  |  |  |  |
| Lease of Water Rights from GWP               |                  |  |  |        |  |  |  |  |  |  |
|                                              |                  |  |  |        |  |  |  |  |  |  |
| Rockhaven Well Fixed O&M                     |                  |  |  |        |  |  |  |  |  |  |
| Treatment O&M (Variable)                     |                  |  |  |        |  |  |  |  |  |  |
| Other O&M (Variable)                         |                  |  |  |        |  |  |  |  |  |  |
| Power O&M (Variable)                         |                  |  |  |        |  |  |  |  |  |  |
| Total Annual O&M Rockhaven                   |                  |  |  |        |  |  |  |  |  |  |
|                                              |                  |  |  |        |  |  |  |  |  |  |
| Total Annual Expenditures Rockhaven Wellsite |                  |  |  |        |  |  |  |  |  |  |

## FMWD Import

|                                     |            |         |        |         |         |         |         |         |         |
|-------------------------------------|------------|---------|--------|---------|---------|---------|---------|---------|---------|
| Imported Water Supply Equivalent    | \$         | 226,089 | \$     | 474,786 | \$      | 498,526 | \$      | 523,452 |         |
| Power Costs of Delivery             | \$         | 39,494  | \$     | 83,726  | \$      | 88,750  | \$      | 94,075  |         |
| Total Import Expenditure Equivalent | \$         | 265,582 | \$     | 558,513 | \$      | 587,276 | \$      | 617,527 |         |
| Net Annual Rockhaven Savings        | -\$845,000 | \$      | 20,398 | \$      | 159,052 | \$      | 173,191 | \$      | 188,149 |

Well and Pipeline Construction Cost

Subtotal

-\$845,000

## Annual Payments to GWP

|                                          |    |         |    |         |    |         |    |         |
|------------------------------------------|----|---------|----|---------|----|---------|----|---------|
| GWP Construction Costs at Rockhaven Well | \$ | 51,012  | \$ | 51,012  | \$ | 51,012  | \$ | 51,012  |
| Lease of Rockhaven Wellsite from GWP     | \$ | 15,040  | \$ | 15,040  | \$ | 15,491  | \$ | 15,956  |
| Lease of Water Rights from GWP           | \$ | 55,920  | \$ | 117,599 | \$ | 123,656 | \$ | 130,025 |
| Annual Payments to GWP                   | \$ | 121,972 | \$ | 183,651 | \$ | 190,158 | \$ | 196,993 |

**EXHIBIT "D"**  
**LEASE AGREEMENT**  
**Between City of Glendale**  
**and**  
**Crescenta Valley Water District**

## LEASE AGREEMENT

THIS GROUND LEASE AGREEMENT ("Lease Agreement") is made and entered into as of \_\_\_\_\_, 2014, by and between the **CITY OF GLENDALE, CALIFORNIA**, ("Landlord"), a municipal corporation, and **CRESCENTA VALLEY WATER DISTRICT** ("Tenant"), also referred to as each a "Party" and collectively "Parties".

### RECITALS

WHEREAS, Landlord is the owner of certain real property a portion of which is the subject of the terms of this Lease Agreement, which portion is legally described in Exhibit "A" and shown in Exhibit "B" as the "Leased Premises" (hereinafter referred to as the "Leased Premises"); Said Exhibits "A" and "B" are attached hereto and incorporated herein by reference.

WHEREAS, Landlord and Tenant have entered into an executed a memorandum of understanding and agreement entitled City of Glendale and Crescenta Valley Water District Rockhaven Well Operation And Water Purchase/Sale Agreement ("MOU"), which MOU sets forth the Parties' understanding and agreement pertaining to Tenant's proposed use of the Leased Premises;

WHEREAS, Tenant desires to enter into a lease with Landlord for the Leased Premises; and

WHEREAS, Landlord is willing to grant such a lease, subject to the terms and conditions of this Lease Agreement.

NOW, THEREFORE, in consideration of the promises and of the mutual obligations and agreements in this Lease, the Parties agree as follows:

#### 1. TERM

1.1 The term of this Lease Agreement shall be for a period of twenty five (25) years, commencing thirty days following the City Council's approval by way of an ordinance authorizing the subject Lease Agreement. The term of the Lease may be terminated sooner in any one or more of the following: abandonment or voluntary surrender of the Lease by Tenant; forfeiture of the Lease after an uncured breach of the terms of the Lease Agreement; and/or for any other reason stated in this Lease Agreement.

1.2 This Lease Agreement shall terminate prior to the expiration of its Term in the event the MOU between the Parties is terminated, at which time this Lease Agreement shall terminate on the date of the termination of the MOU.

1.3 Landlord may terminate this Lease Agreement, in the event the operations on the Lease Premises are posing or constituting an emergency affecting public welfare, safety and security, and/or in the event Landlord requires the use of the Leased Premises to address an emergency affecting public welfare, safety and security. Such termination shall be effective immediately and shall be without the requirement of any prior notice to Tenant. Landlord will make every effort to provide Tenant with one (1) week notice of termination in instances of public emergency affecting public security and/or safety only if providing such notice is possible in light of the events and circumstances surrounding the emergency.

1.4 This Lease Agreement shall terminate prior to the expiration of its Term in the event the MOU between the Parties is terminated, at which time this Lease Agreement shall terminate on the date of the termination of the MOU.

2. USE OF PREMISES

2.1 The Leased Premises shall be used solely for the purpose of installation/construction of vertical turbine pump and motor, a small building enclosure on a concrete pad over the groundwater well, above ground discharge piping with a flow meter, electrical/telemetry system to provide power for the pump and ability to remotely monitor and control the pump, asphaltic concrete paving and on-site improvements, underground discharge piping to waste, and 8-inch water main which will connect to an existing 8-inch water main to CVWD's Nitrate Removal Treatment and ingress, egress and parking of motor vehicles by Tenant and Tenant's employees, representatives and agents, and for no other purposes, without the written consent of Landlord first being obtained.

2.2 Tenant acknowledges that Landlord shall not be held responsible for the design of the facilities on the Leased Premises. Tenant acknowledges that Landlord shall not be held liable and agrees to defend and hold Landlord harmless to the maximum extent permitted by law from all claims arising out of the design, maintenance and operation of Tenant's Facilities at the Leased Premises.

3. RENT

3.1 Landlord shall invoice Tenant on a monthly basis, pursuant to Section 3 of the MOU. The single monthly invoice shall include, among other components, the rent for the Leased Premises. The rent shall be in the amount as set forth in the Cost Analysis Study dated October 2014, prepared by Raftelis Financial Consultants attached hereto as Exhibit "C". The Cost Analysis Study, the study assumptions and the components shall be reviewed and adjusted every five (5) years from the date of this agreement.

3.2 Tenant shall pay Landlord within 30 calendar days after receiving the invoice following the first of each month.

4. MAINTENANCE AND REPAIRS

4.1 Tenant shall be responsible for maintaining the lighting and landscaping, including planting, trimming and irrigating said landscaping. Tenant acknowledges and agrees that Tenant shall conform to Landlord's reasonable standards, as well as ensure that all work done and any and all site improvements by Tenant is in accordance with the rules, regulations and laws of the City of Glendale, as well as with any applicable State and Federal rules, regulations and mandates.

4.2 Tenant shall be directly responsible for all utilities required by Tenant's use of the Leased Premises, including but not limited to electricity. The cost of any utilities provided by Landlord shall be paid by Tenant to Landlord as payment separate from rent. Tenant shall pay a monthly charge for electricity computed at the then-current public utility rate.

4.3 Tenant shall keep the Leased Premises free from trash and debris. Tenant shall maintain the paved surface of the Leased Premises.

5. ACCESS

5.1 By Landlord: Landlord reserves the right to enter and use the Leased Premises for the purpose of gaining access to Landlord's adjacent properties without interfering with Tenant's use of the Leased Premises.

5.2 By Tenant: At all times throughout the Term of this Lease Agreement, and at no additional charge to Tenant, Tenant and its employees, agents, contractors, and subcontractors, will have twenty-four (24) hour per day, seven (7) day per week right of access to and over Landlord's property, along Landlord's specified access routes, for the installation, repair, maintenance and operation of the Tenant Facilities and any utilities serving the Lease Property. Tenant must provide Landlord with at least 72 hours advance prior notice for any vehicular access if the vehicle or equipment: (1) has a gross vehicle weight in excess of 10,000 pounds; (2) has skid steering including track driven vehicles or equipment; (3) possesses outriggers or stabilizers; (4) needs to be transported by trailer; or (5) is not recognized by the Department of Motor Vehicles to be legally driven or operated across/over public roads or highways. Tenant is responsible for and shall reimburse Landlord for any and all damages to the access to Landlord's property caused by Tenant's activity on Landlord's Property.

6. COMPLIANCE WITH ALL LAWS

6.1 Tenant shall comply with all applicable requirements of federal, state and local laws, rules and to monitor and certify such compliance in accordance with requirements as may be established by Landlord.

6.2 Tenant's ability to use the Lease Property shall be dependent upon Tenant obtaining all the certificates, permits, and other approvals, which may be required from any federal, state, or local authorities. Landlord shall reasonably cooperate with Tenant, but at no expense to Landlord, in obtaining such approvals. If any application by Tenant for any such approval is finally denied or rejected, or if any such certificate, permit, license or approval expires, lapses or is otherwise withdrawn or terminated, or if due to technological changes or for any other reason, Tenant, in its sole discretion, determines that it will be unable to use the Lease Property for Tenant's intended purposes, then Tenant shall have the right to terminate this Lease in accordance with the applicable Sections herein.

7. SIGNS

Tenant shall consult with the Planning Division of the City of Glendale to determine what signs will be permitted. Only those signs permitted by ordinance may be erected on the Leased Premises.

8. TAXES

8.1 Tenant recognizes and understands that this lease may create a possessory interest subject to property taxation and that Tenant may be subject to the payment of property taxes levied on such interest, and Tenant agrees to pay all such taxes levied. Tenant bears the responsibility to determine the subject taxes. Landlord shall not be liable for Tenant's failure to pay such possessory property taxes.

8.2 Tenant shall also pay, before delinquency, all taxes assessed against any personal property of Tenant, which may be located in or upon the Leased Premises, including all facilities, furnishings, fixtures, equipment. Tenant shall not be liable to pay any taxes and assessments arising from fee simple ownership of the Leased Premises.

#### 9. RIGHT OF INSPECTION

Landlord reserves the right, to its officers, agents or employees, to enter upon the Leased Premises, and every part thereof, at all reasonable times during regular business hours for the purpose of inspecting same.

#### 10. INDEMNIFICATION

10.1 Tenant agrees to indemnify, defend and hold harmless, to the maximum extent permitted by law, Landlord and its officers, agents, employees and representatives, from and against any and all liability, suits, actions, proceedings, judgments, claims losses, liens, damages, injuries (whether in contract or in tort, including personal injury, accidental death or property damage, and regardless of whether the allegations are false, fraudulent or groundless), costs and expenses (including attorney's fees), litigation, arbitration, mediation, appeal expenses) which in whole or in part arise out of or are connected with, or which are alleged to have arisen out of or to have been connected with Tenant's use, occupancy, activities, events, or operations on, in or about the Leased Premises.

10.2 Tenant's obligation to indemnify, defend and hold harmless shall remain in effect and shall be binding upon Tenant whether such injury or damage shall accrue, or may be discovered, before or after the termination of this Lease.

#### 11. INSURANCE

11.1 At its own expense, Tenant shall obtain, pay for and maintain during the term of the Lease Agreement an "occurrence" policy for Commercial General Liability (including Contractual Liability) which shall protect Tenant and Landlord from claims for injuries and damages. The policy shall add Landlord, its officers, agents and employees as additional named insureds under the policy in the following amounts:

COMMERCIAL GENERAL LIABILITY INSURANCE in an amount not less than One Million Dollars (\$1,000,000) per occurrence for personal injuries, including accidental death, to any one person.

PROPERTY DAMAGE INSURANCE in an amount not less than One Million Dollars (\$1,000,000); and subject to the above limits and combined single limit of insurance in an amount not less than One Million Dollars (\$1,000,000).

BUSINESS AUTOMOBILE LIABILITY INSURANCE in an amount not less than One Million Dollars (\$1,000,000) per occurrence for bodily injury (including accidental death) to any one person and One Million Dollars (\$1,000,000) per occurrence for property damage, or Two Million Dollars (\$2,000,000) combined single limit.

POLLUTION LIABILITY INSURANCE in an amount not less than One Million Dollars (\$1,000,000) per claim and Two Million Dollars (\$2,000,000) in aggregate.

Complete WORKERS' COMPENSATION INSURANCE meeting or exceeding the coverages and amounts that California law requires.

11.2 At all times, the insurance company issuing the policy shall be an "admitted" insured in the State of California; shall be domiciled within, and organized under the laws of, a state of the United States; and shall carry an A.M. Best & Company minimum rating of "A-"

11.3 All policies shall contain a "Separation of Insured" clause and a "Primary Coverage" clause for any loss arising out of or caused by Tenant's occupation or use of the Leased Premises. In addition, the policies shall contain a statement of obligation on the insurance carrier's part to notify Landlord, by registered mail, at least thirty (30) days in advance of any policy cancellation, termination or reduction of the state limits.

11.4 Before signing this Lease Agreement, Tenant shall deliver to Landlord a "certificate of insurance" and an "additional insured endorsement", both documents countersigned by the insurance carrier or its authorized representative, on forms satisfactory to the City Attorney, which set forth the above provisions.

11.5 Thirty (30) days prior to each anniversary date of this Lease Agreement, each Tenant shall deliver to Landlord a renewal certificate of insurance and renewal additional insured endorsement, in conformance with the requirements set forth herein.

11.6 The countersigned certificate, along with the additional insured endorsement, shall state: "The City of Glendale, its officers, agents and employees are added as additional names insureds under this policy. This insurance is primary to the coverage of the City of Glendale. Neither the Landlord nor any of its insurers shall be required to contribute to any loss. The insurance shall apply separately to each insured. The issuing company shall mail thirty (30) days advance notice to the Landlord of any policy cancellation, termination or reduction of the stated limits."

11.7 Additionally, any deductibles or self-insured retentions shall be set forth on the certificate and shall be subject to Landlord's review and approval. Landlord reserves the right to modify its insurance requirements on an annual basis.

11.8 Tenant's failure to comply with the provisions of this Section shall constitute a material breach upon which Landlord may immediately terminate this Lease Agreement.

## 12. DEFAULT BY TENANT

12.1 The occurrence of any one or more of the following events shall constitute an "Event of Default" hereunder by Tenant.

1. The failure by Tenant to make the payment of rent or any other payment required to be made by Tenant hereunder when due, where such failure shall continue for a period of ten (10) days after written notice thereof is received by Tenant from Landlord.
2. The failure by Tenant to observe or perform any of the covenants or provisions of this Lease Agreement to be observed or performed by Tenant, other than as specified in Section 13(A) where such failure shall continue for a period of thirty (30) days after written notice thereof is received by Tenant from Landlord; provided, however, that it shall not be deemed an Event of Default by Tenant if Tenant shall commence to cure such failure within said thirty (30) day period and thereafter diligently prosecute such cure to completion.

12.2 If there occurs an Event of Default by Tenant, in addition to any and all other remedies available to Landlord at law or in equity; Landlord shall have the option to terminate this Lease Agreement and all rights of Tenant hereunder.

12.3 In addition, Landlord shall be entitled to immediate restraint by injunction of any violation of any of the covenants, conditions, or provisions of this Lease Agreement.

12.4 Should Tenant engage in activities which may cause or allow the Leased Premises to become a threat or danger to public welfare and safety, Landlord shall have the right, prior to a determination and authorization by a court of competent jurisdiction, to re-enter the Leased Premises and remove persons and personal property therefrom.

### 13. ASSIGNMENT AND SUBLETTING

13.1 Tenant shall not have the right to assign this Lease, or to sublet the whole or any portion of the Property without the prior written consent of the Landlord, which consent shall not be unreasonably withheld. No assignment or sublet shall release Tenant or change Tenant's primary liability to perform Tenant's obligations hereunder.

13.2 Tenant's rights hereunder shall not be subject to assignment by attachment, execution or proceedings under any Bankruptcy Act provision. Any such assignment or subletting shall be wholly void and of no force and effect without Landlord's prior written consent.

13.3 Any consent by Landlord to Tenant to assign this lease or sublet the whole or any portion of the Property, shall not be construed as consent to any other assignment or subletting, or as a waiver of Landlord's objection or right to object to any such assignment or subletting to which it has not consented.

### 14. EFFECT OF BANKRUPTCY

If at any time during the Lease term, in any judicial action or Court proceeding against either of the Tenant, a receiver or other officer or agent of the court is appointed to take charge of Tenant's interest under this Lease, and remain in possession of the Leased Premises for a period of more than twenty (20) days, or if Tenant shall be adjudicated bankrupt, or should any attempt to be made to sell Tenant's interest under this Lease by judicial sale, then Landlord shall have the right, to immediately terminate this Lease Agreement.

### 15. LANDLORD'S RIGHTS UPON TERMINATION

In the event of a termination or cancellation of this Lease Agreement for any cause or reason whatsoever, before the expiration of the term hereof, Landlord shall be entitled to remove Tenant from the Leased Premises and, except as otherwise hereinabove expressly provided, shall be entitled to retain any sum then held by Landlord as security pursuant to Paragraph 6 hereof, to cover damages and rents owed, pursuant to Section 1950.7 of the California Civil Code.

### 16. HOLDING OVER

Upon termination of this Lease Agreement, Tenant shall surrender the Leased Premises in good, clean, undamaged condition, wear and tear excepted. Any holding over by Tenant after the term of this Lease Agreement expires, with the consent of Landlord, shall create a month to month tenancy, which either party may terminate by giving the

other party written notice at least thirty (30) days before the intended termination date. Rent shall be at a rate equal to the rent for the immediately preceding month, and shall be payable in advance. In the event of a holding over, all other terms and conditions of this Lease shall remain in full force and effect.

**17. NOTICE**

Any notice to be provided to the Landlord and Tenant hereunder shall be provided in writing and unless otherwise provided herein, shall be deemed validly given on the date either personally delivered to the address indicated below or on the third (3<sup>rd</sup>) business day following deposit, postage prepaid, using certified mail, return receipt requested, in any U.S. Postal mailbox or at any U.S. Post Office. Notices shall also be allowed via electronic mail ("email"), and shall be deemed validly given on the date of transmission when sent by email. Should Landlord or Tenant have a change of address, the other party shall immediately be notified in writing of such change, provided, however, that each address for notice must include a street address and not merely a post office box. All notices shall be addressed as follows:

**TENANTS:**

CRESCENTA VALLEY WATER DISTRICT  
ATTN: Dennis Erdman, General Manager  
2700 Foothill Boulevard  
La Crescenta, CA 91214-3516  
Facsimile: (818) 248-1659  
Email: derdman@cvwd.com

**LANDLORD**

CITY OF GLENDALE WATER & POWER  
ATTN: Ramon Abueg, Chief Assistant General Manager  
141 North Glendale Ave., 4<sup>th</sup> Level  
Glendale, CA 91206-4496  
Facsimile: (818) 552-2852  
Email: rabueg@glendaleca.gov

**18 MISCELLANEOUS PROVISIONS**

A. WAIVER. Landlord's failure to exercise any of its rights resulting from a default or breach of covenant on the part of Tenant shall not be construed as a waiver thereof, nor shall any custom or practice which may grow up between the parties in the course of administering this Lease be construed to waiver or to lessen the right of Landlord to insist upon the performance by Tenant of any term, covenant or condition hereof, or to exercise any right given it resulting from any such default. A waiver of a particular breach or default shall not be deemed to be a wavier of the same or any other subsequent breach of default.

B. TIME OF ESSENCE. Time is of the essence of this Lease and of each provision.

C. NO PARTNERSHIP. This Lease Agreement shall not be construed to constitute any form or partnership or joint venture between Landlord and Tenant.

D. CONSTRUCTION

1. Section titles or captions contained in this Lease are inserted as a matter of convenience and for reference and in no way define, limit, extend or describe the scope of this Lease or any provision hereof.
2. Unless defined otherwise, the words used in this Lease shall be construed according to their plain meaning in the English language. The language used in this Lease shall not be interpreted strictly for or against either party.
3. If any provision of this Lease is capable of two constructions, one of which would render the provision void and the other of which would render the provision valid, then the provision shall have the meaning that renders it valid.
4. The singular includes the plural and vice versa, and the masculine includes the feminine and neuter, whenever the context so requires.

E. WARRANTEE. Landlord warrants and agrees that Landlord is seized of good and sufficient title to and interest in the Leased Premises and has full authority to enter into and execute this Lease Agreement and that there are no undisclosed liens, judgment or impediments of title on the Leased Premises that would affect this Lease Agreement. Landlord makes no representation or warranty whatsoever concerning the suitability of the Leased Premises for the purposes intended by Tenant. Tenant acknowledges that neither Landlord, nor any of Landlord's officers, agents and employees have made any representations concerning the suitability of the Leased Premises for the purposes intended by Tenant, nor is Tenant entering into this Lease Agreement in reliance upon any such representations.

F. RIGHT OF QUIET ENJOYMENT. Tenant shall have the right of quiet enjoyment of the Leased Premises.

G. GOVERNING LAW. This Lease Agreement and the performance hereon shall be governed, interpreted, construed and regulated by the laws of the State of California.

H. ENTIRE AGREEMENT. This Lease Agreement constitutes the entire agreement between the parties hereto pertaining to the subject matter hereof, fully supersedes any and all prior understandings, representations, warranties and agreements between the parties hereto, or any of them, pertaining to the subject matter hereof, and may be modified only by written agreement signed by all of the parties hereto.

I. BINDING POWER. Each person executing this Lease warrants and represents that he or she is duly authorized to execute this Lease Agreement on behalf of Landlord or Tenant.

J. SEVERABILITY. If any portion of this Lease Agreement is declared by a court of competent jurisdiction to be invalid or unenforceable, then such portion shall be deemed modified to the extent necessary in such court's opinion to render such portion enforceable and, as so modified, such portion and the balance of this Lease Agreement shall continue in full force and effect.

K. ATTORNEYS' FEES. In case suit shall be brought because of the breach or alleged breach of any covenant herein contained on the part of any party to be kept or performed, or for declaratory relief, the prevailing party or parties shall recover from the non-prevailing party or parties all costs and expenses incurred herein, including reasonable attorneys' fees and expenses incurred in enforcing any judgment.

L. FORCE MAJEURE. For the purposes of this Lease Agreement, "Force Majeure" means an unforeseen event or condition deemed by Landlord as calling for immediate action to avoid the threat of loss or injury of property and/or danger to public safety, including but not limited to, an act of God, labor dispute, civil unrest, epidemic, and/or natural disaster.

**19. ENFORCEMENT AUTHORIZATION**

The City Manager of Landlord, or his assigned representative, is hereby authorized to act on behalf of the City in all matters pertaining to this Lease, with the exception that a termination of the Lease by Landlord due to breach of any of the terms and conditions herein shall be approved by the Council of the City of Glendale.

IN WITNESS WHEREOF, the parties hereto have caused this Lease to be executed by their officers hereunto duly authorized on the day and year first above written.

**LANDLORD:**

**TENANT:**

CITY OF GLENDALE

CRESCENTA VALLEY WATER DISTRICT

By: \_\_\_\_\_  
Scott Ochoa  
City Manager

By: \_\_\_\_\_  
Dennis Erdman  
General Manager

EXHIBIT "A"  
LEGAL DESCRIPTION

## EXHIBIT "A"

### CVWD Well Site Legal Description

A portion of Lot 230 of Tract No. 2535 in the City of Glendale, County of Los Angeles, State of California, according to the map recorded February 3<sup>rd</sup>, 1914 as filed in Book 24, at Page(s) 72, and 73 of Maps in the office of the Recorder for said County; more particularly described as follows:

Beginning at the Northern most corner of said Lot 230;

Thence, along the Northeasterly line of said Lot and along the Southwesterly line of the Hermosa Avenue right-of-way (50 feet wide) as shown on said map of Tract No. 2535, South 53° 16' 50" East, 72.5 feet to the Eastern most corner of said Lot 230;

Thence, leaving said Southwesterly line of the Hermosa Avenue right-of-way, along the Southeasterly line of said Lot 230, South 36° 43' 10" West, 86.00 feet;

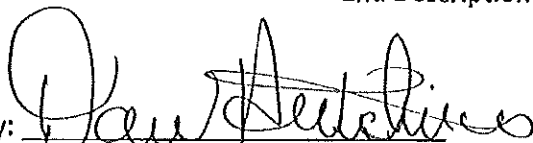
Thence, leaving the Southeasterly line of said Lot 230, along a line parallel with said Southwesterly line of the Hermosa Avenue right-of-way, North 53° 16' 50" West, 72.50 feet to the Northwestern line of said Lot 230;

Thence, along the Northwestern line of said Lot 230, North 36° 43' 10" East, 86.00 feet to the point of beginning;

Containing 6,235 square feet.

End Description

Prepared by:

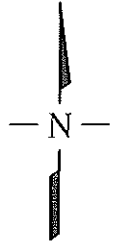
  
Dan Hutchinson, LS 5139



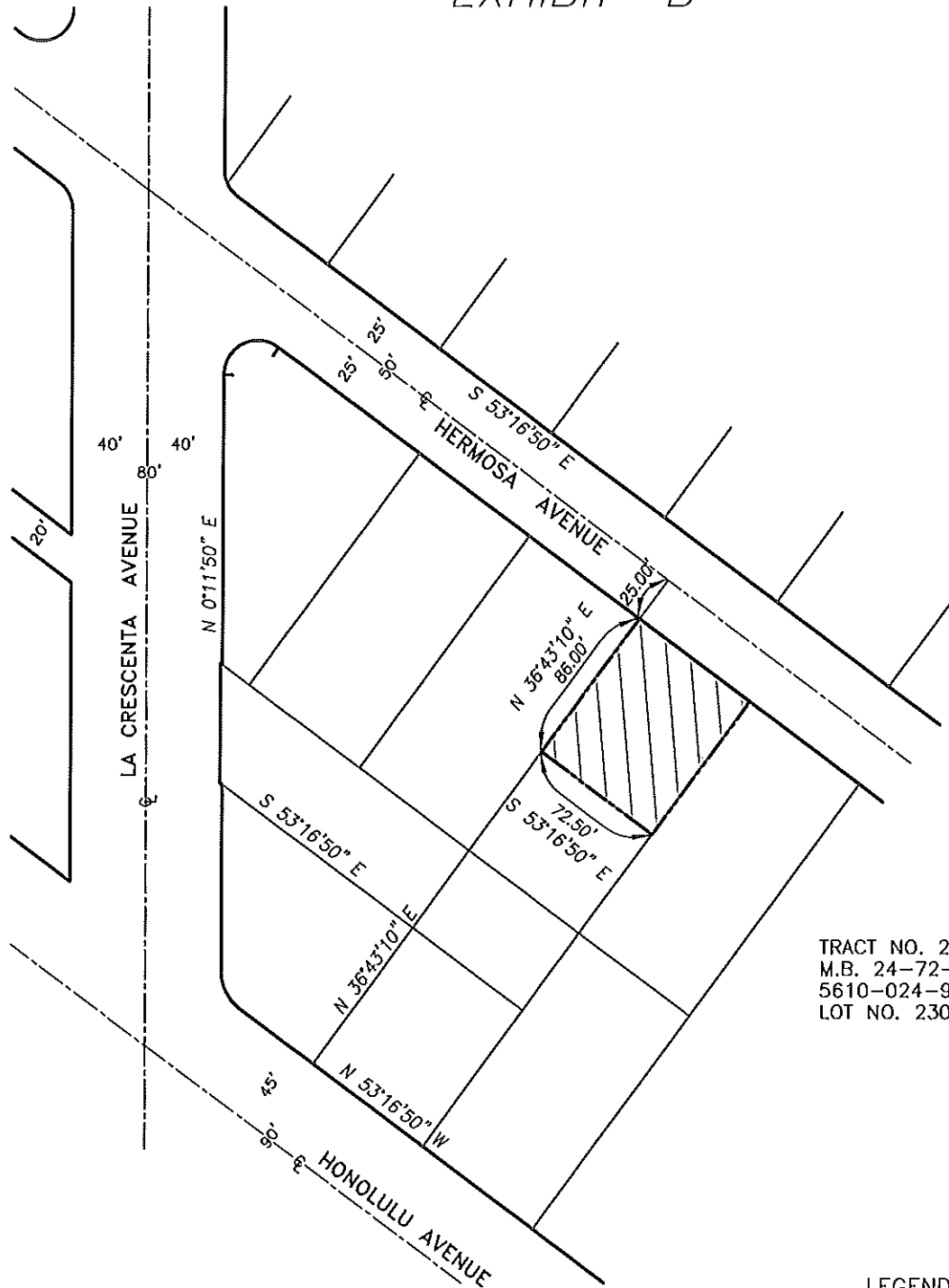
Date: DEC. 3<sup>RD</sup>, 2014

EXHIBIT "B"  
MAP

# EXHIBIT "B"



SCALE: 1" = 80'



TRACT NO. 2535  
M.B. 24-72-73  
5610-024-905  
LOT NO. 230 & 231

## LEGEND

- LOT LINES
- R/W LINES
- STREET CENTERLINE
- EASEMENT BOUNDARY

CRESCENTA VALLEY WATER DISTRICT

SKETCH TO ACCOMPANY LEGAL DESCRIPTION

SHT. 1 OF 1 SHTS.

CRESCENTA VALLEY WATER DISTRICT

11-19-2014

ROCKHAVEN WELL

JAH

NAME

REVDATE

USER

EXHIBIT "C"

Cost Analysis Study

Dated October 2014

Prepared by

Raftelis Financial Consultants

**Table 1**  
**Existing CVWD Water Supply Costs**

[illegible]

**Table 2**  
**Rockhaven Well Future Construction Costs**

| Description                                        |     | Cost             |
|----------------------------------------------------|-----|------------------|
| <b>Rockhaven Well Project Capitalized Cost</b>     |     |                  |
| Transmission Pipe to Blending Plant (a)            |     | \$240,000        |
| Well Equipment                                     |     |                  |
| Pump & Motor                                       |     | \$90,000         |
| Electrical                                         |     | \$90,000         |
| Piping                                             |     | \$40,000         |
| SCADA/Telemetry                                    |     | \$44,000         |
| Building/Misc                                      |     | \$35,000         |
| Site work                                          |     | \$25,000         |
| Subtotal                                           |     | \$564,000        |
| <b>Construction Cost Multipliers</b>               |     |                  |
| Contingency                                        | 20% | \$112,800        |
| Engineering & Permitting                           | 15% | \$84,600         |
| Soils Engineering                                  | 1%  | \$5,640          |
| Construction Mgmt                                  | 10% | \$56,400         |
| CVWD Labor, Eqpt, Mtls                             |     | \$21,560         |
| <b>Grand Total Capital Cost (2014)</b>             |     | <b>\$845,000</b> |
| <b>Rockhaven Well Site Costs (2013)</b>            |     |                  |
| Local Wellsite Labor                               |     |                  |
| Weekly                                             | Hrs | 10               |
| Annual                                             | Hrs | 520              |
| Burdened Labor Rate (\$/hour)                      |     | \$60             |
| Annual Labor Cost                                  |     | \$31,200         |
| Materials Cost at Wellsite (\$/year)               |     | \$5,000          |
| <b>Total Annual Labor &amp; Materials</b>          |     | <b>\$36,200</b>  |
| a. The transmission line is 1,200 ft. at \$200/lf. |     |                  |

**Table 3**  
**Rockhaven Well Water Supply Alternative Analysis**

[illegible]

## Rockhaven Well

|                                              | Total Investment                                  | Period |
|----------------------------------------------|---------------------------------------------------|--------|
| GWP Construction Costs at Rockhaven Well     | \$1,095,841                                       | 50     |
| Lease of Rockhaven Wellsite from GWP         | \$376,000                                         | 25     |
| Lease of Water Rights from GWP               |                                                   |        |
|                                              | \$ 51,012 \$ 51,012 \$ 51,012 \$ 51,012 \$ 51,012 |        |
|                                              | \$ 15,040 \$ 15,040 \$ 15,491 \$ 15,956           |        |
|                                              | \$ 66,731 \$ 140,333 \$ 147,560 \$ 155,161        |        |
| Rockhaven Well Fixed O&M                     |                                                   |        |
| Treatment O&M (Variable)                     | 2013 Price                                        |        |
| Other O&M (Variable)                         | \$220                                             |        |
| Power O&M (Variable)                         | \$10                                              |        |
|                                              | \$95                                              |        |
| Total Annual O&M Rockhaven                   |                                                   |        |
|                                              | \$ 38,405 \$ 39,557 \$ 40,743 \$ 41,966           |        |
|                                              | \$56,467 \$116,323 \$119,812 \$123,407            |        |
|                                              | \$2,515 \$5,182 \$5,337 \$5,497                   |        |
|                                              | \$25,825 \$54,748 \$58,033 \$61,515               |        |
|                                              | \$ 123,212 \$ 215,809 \$ 223,926 \$ 232,385       |        |
| Total Annual Expenditures Rockhaven Wellsite | \$ 255,994 \$ 422,194 \$ 437,989 \$ 454,514       |        |

## FMWD Import

|                                     |                                                      |
|-------------------------------------|------------------------------------------------------|
| Imported Water Supply Equivalent    | \$ 226,089 \$ 474,786 \$ 498,526 \$ 523,452          |
| Power Costs of Delivery             | \$ 39,494 \$ 83,726 \$ 88,750 \$ 94,075              |
| Total Import Expenditure Equivalent | \$ 265,582 \$ 558,513 \$ 587,276 \$ 617,527          |
| Net Annual Rockhaven Savings        | -\$160,875 \$ 9,588 \$ 136,318 \$ 149,286 \$ 163,013 |

Well and Pipeline Construction Cost  
Subtotal

-\$160,875

## Annual Payments to GWP

|                                          |                                                        |
|------------------------------------------|--------------------------------------------------------|
| GWP Construction Costs at Rockhaven Well | \$ 51,012 \$ 51,012 \$ 51,012 \$ 51,012                |
| Lease of Rockhaven Wellsite from GWP     | \$ 15,040 \$ 15,040 \$ 15,491 \$ 15,956                |
| Lease of Water Rights from GWP           | \$ 66,731 \$ 140,333 \$ 147,560 \$ 155,161             |
| Annual Payments to GWP                   | -\$160,875 \$ 132,783 \$ 206,385 \$ 214,063 \$ 222,129 |

## Rockhaven Well

|                                              | Total Investment                                      | Period |
|----------------------------------------------|-------------------------------------------------------|--------|
| GWP Construction Costs at Rockhaven Well     | \$1,095,841                                           | 50     |
| Lease of Rockhaven Wellsite from GWP         | \$376,000                                             | 25     |
| Lease of Water Rights from GWP               |                                                       |        |
|                                              | \$ 51,012 \$ 51,012 \$ 51,012 \$ 51,012 \$ 51,012     |        |
|                                              | \$ 15,040 \$ 15,040 \$ 15,491 \$ 15,491 \$ 15,956     |        |
|                                              | \$ 55,920 \$ 117,599 \$ 123,656 \$ 123,656 \$ 130,025 |        |
| Rockhaven Well Fixed O&M                     |                                                       |        |
| Treatment O&M (Variable)                     | \$38,405 \$ 39,557 \$ 40,743 \$ 41,966                |        |
| Other O&M (Variable)                         | \$56,467 \$116,323 \$119,812 \$123,407                |        |
| Power O&M (Variable)                         | \$2,515 \$5,182 \$5,337 \$5,497                       |        |
| Total Annual O&M Rockhaven                   | \$25,825 \$54,748 \$58,033 \$61,515                   |        |
|                                              | \$ 123,212 \$ 215,809 \$ 223,926 \$ 232,385           |        |
| Total Annual Expenditures Rockhaven Wellsite | \$ 245,184 \$ 399,460 \$ 414,084 \$ 429,377           |        |

## FMWD Import

|                                     |                                                       |
|-------------------------------------|-------------------------------------------------------|
| Imported Water Supply Equivalent    | \$ 226,089 \$ 474,786 \$ 498,526 \$ 523,452           |
| Power Costs of Delivery             | \$ 39,494 \$ 83,726 \$ 88,750 \$ 94,075               |
| Total Import Expenditure Equivalent | \$ 265,582 \$ 558,513 \$ 587,276 \$ 617,527           |
| Net Annual Rockhaven Savings        | -\$845,000 \$ 20,398 \$ 159,052 \$ 173,191 \$ 188,149 |

Well and Pipeline Construction Cost  
Subtotal

-\$845,000

## Annual Payments to GWP

|                                          |                                                       |
|------------------------------------------|-------------------------------------------------------|
| GWP Construction Costs at Rockhaven Well | \$ 51,012 \$ 51,012 \$ 51,012 \$ 51,012 \$ 51,012     |
| Lease of Rockhaven Wellsite from GWP     | \$ 15,040 \$ 15,040 \$ 15,491 \$ 15,491 \$ 15,956     |
| Lease of Water Rights from GWP           | \$ 55,920 \$ 117,599 \$ 123,656 \$ 123,656 \$ 130,025 |
| Annual Payments to GWP                   | \$ 121,972 \$ 183,651 \$ 190,158 \$ 196,993           |



## **Appendix C: CVWD Water Conservation Program**

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**Crescenta Valley Water District 2015 Urban Water Management Plan**

## **APPENDIX G**

# **CRESCENTA VALLEY WATER DISTRICT WATER CONSERVATION PROGRAM**

# CRESCENTA VALLEY WATER DISTRICT

## APPENDIX G

### WATER CONSERVATION PROGRAM

#### GENERAL STATEMENT

1. Due to the water supply conditions prevailing in the Crescenta Valley Water District (CVWD) and/or in the area from which CVWD obtains a portion of its water supply, the general welfare requires that:
  - The water resources available to the CVWD be put to the maximum beneficial use;
  - The waste or unreasonable use, or unreasonable method of use of water be prevented;
  - The conservation of such water be practiced with a view to the reasonable and beneficial use thereof in the interest of the customers of CVWD and for the public health and safety.
2. The purpose of this program is to provide water conservation regulations, in a phased approach, to minimize the effect of a shortage of water supplies on the customers of CVWD during various critical stages of a water shortage.

#### PHASE I –NORMAL WATER CONSERVATION

Phase I standard water conservation practices will be in effect at all times. The CVWD Board of Directors has adopted the following measures to reduce consumption and prohibit water waste for existing and new water users within CVWD in order to sustain water supply reliability.

#### **Prohibited Use Applicable to Existing and New Customers**

1. **Water hose usage:** Hose washing of sidewalks, walkways, driveways, or parking areas, tennis courts, patios, porches or other paved areas shall not be permitted. Exception: Flammable or other dangerous substances may be disposed of by direct hose flushing by public safety officers for the benefit of public health and safety. Businesses or schools required to hose down public eating areas will be provided with access to a water broom.
2. **Overspray and runoff:** Use of water for any purpose which results in overspray, excessive runoff onto hardscapes, driveways, streets, adjacent lands or into gutters shall not be permitted.
3. **Fountains, similar structures and swimming pools:** Water used to clean, fill or maintain levels in decorative fountains or similar structures must be part of a recirculation system.
4. **Leaks:** Leaks from any facility both inside and outside of a customer's premises must be repaired within seventy-two hours after the customer is notified of, or discovers the leak. Failure to affect the repair of any leak shall subject said customer to all penalties provided herein for waste of water.
5. **Irrigating times:** No watering, sprinkling or irrigating shall take place between the hours of nine a.m. (9:00AM) and five p.m. (5:00PM) in any landscaped or vegetated areas, including, but not limited to, golf courses, parks, cemeteries and school areas landscaped with, but not limited to, grass, lawn, groundcover, shrubbery, annual and perennial plants, crops, trees, and California-friendly plantings.

6. **Hand Watering:** Hand watering of non-turf areas is allowed using a hose with a positive shut-off nozzle or watering can within the allowable times as specified above.
7. **Windy and rainy days:** No watering, sprinkling or irrigating shall take place in any landscaped or vegetated areas on days when the wind is blowing causing overspray. No irrigation or watering of turf or ornamental-landscapes during and 48 hours following measurable precipitation.
8. **Vehicle washing:** The washing of commercial and non-commercial privately owned automobiles, trucks, trailers, motor-homes, boats, buses, airplanes and other types of vehicles is restricted to use of a hand-held bucket and quick rinses using a hose with a positive shut-off nozzle. Exceptions: the use of wash water which is on the immediate premises of a commercial car wash or commercial service station; where health, safety and welfare of the public is contingent upon frequent vehicle cleaning, such as garbage trucks and vehicles which transport food and perishables.
9. **Swimming pools:** Owners of outdoor swimming pools, wading pools or spas, when these are not in use, are requested to use covers to minimize the evaporation of water.
10. **Construction water restrictions:** Water for construction purposes including but not limited to de-brushing of vacant land, compaction of fills and pads, trench backfill and other construction uses, shall be used in an efficient manner which will not result in runoff.
11. **Fire hydrants:** The use of potable water from fire hydrants shall be limited to firefighting related activities or other activities immediately necessary to maintain the health, safety, and welfare of the residents of the city.
12. **Drinking water upon request:** No restaurant, hotel, café, cafeteria or other public place where food is sold, served or offered for sale, shall serve drinking water to any customer unless expressly requested by a customer.
13. **Hotels/Motels:** Hotels, motels, and other commercial lodging establishments are requested to post notices informing their guests about the city's water conservation policy and urging guests to conserve water. Water conservation notices will be provided by CVWD.
14. **Hotels/Motels:** Hotels, motels and other commercial lodgings are requested to post notices giving their guests the option of not laundering towels and linens daily.
15. **Reporting waste of water:** The District shall maintain a program for residents to report waste of water throughout the District boundaries. This will include an online submittal form, a dedicated phone number, and follow-up by District staff on all waste of water reports. Residents are requested to report any observed waste of water from surrounding properties or in the community and report to the District for follow-up.
16. **Pre-rinse spray valve:** Where applicable, restaurants must utilize water conserving nozzles.
17. **New Development** (new commercial and multi-family accounts):
  - 1) All new commercial and multi-family accounts are prohibited from water waste such as, but not limited to: single-pass cooling systems; conveyor and in-bay vehicle wash and commercial laundry systems which do not reuse water; non-recirculating decorative water fountains.
  - 2) All landscape must be in accordance with the permitting agency's landscape ordinance. If the permitting agency does not have a landscape ordinance, the Department of Water Resources Model Landscape Ordinance will apply.

**BE IT FURTHER RESOLVED**, Crescenta Valley Water District urges the following water usage to all of its customers:

1. To reduce the amount of turf and install new drought tolerant landscaping, low-water using trees and plants, and efficient irrigation systems including but not limited to ET controllers, drip irrigation, and “high efficiency sprinkler heads”.
2. To wash only full loads of dishes or clothes in automatic washers, and do not allow indoor faucets to run continuously.
3. To turn water system off when leaving property unoccupied for an extended period of time.
4. To use covers to minimize the evaporation of water from outdoor swimming pools, wading pools or spas when they are not in use.

### **WATER CONSERVATION ALERT SYSTEM**

When a water conservation alert system is implemented by direction of the General Manager, the following measures to reduce water consumption will be required for all water users within CVWD.

- a. Color Code **“Blue”** is defined as the Normal Water Conservation Alert, Foothill Municipal Water District can meet all Member Agency demands. Standard water conservation applies as defined in Appendix G of the Rules and Regulations.
- b. Color Code **“Green”** is defined as an Increased Voluntary Conservation Alert, some supplies have been impacted and customers should increase efforts to conserve by following strict water conservation practices indoors and limiting outdoor water use to odd or even days, based on ending number of customer address.
- c. Color Code **“Yellow”** is defined as an Extraordinary Conservation Alert, when Metropolitan Water District of Southern California is pulling water from most of its storage programs to meet demands. Extraordinary conservation is called for from customers. Customers are requested to minimize indoor water use and water outdoors no more than three (3) days per week. Outdoor irrigation will be permitted only on Tuesday, Thursday, and Saturday.
- d. Color Code **“Orange”** is defined as a Rationing Conservation Alert, when Metropolitan Water District of Southern California has implemented its allocation plan to its member agencies. Customers are requested to minimize indoor water use and severely limit outdoor water use as follows:
  1. Residential and commercial landscape irrigation is limited to no more than two (2) days per week on Tuesday and Saturday.
  2. Exemption: Public use areas owned and/or operated by School Districts are exempt from watering days, and public use areas greater than 4,000 square feet are exempt from watering days so long as best management practices are applied by all.
  3. The filling, refilling or adding of water to indoor and outdoor pools, wading pools, or spas is prohibited. Exemptions: Commercial Repairs mandated by the Federal Virginia Graeme Baker Act, or adding water for the prevention of equipment failure is permissible, however, the District strongly urges that a cover be used to prevent evaporation and thereby reducing the frequency of refilling..
  4. The use of water to clean, maintain, fill, or refill decorative fountains or similar structures is prohibited. Exemptions: Adding water for the prevention of equipment failure is permissible.

5. Vehicle washing is restricted to the use of a hand-held bucket and quick rinses using a hose with a positive shut-off nozzle.
  6. Fix leaks within 48 hours.
- e. Color Code **“Red”** is defined as a Critical Water Conservation Alert, when water supplies are only available for health and safety needs. Customers are required to minimize indoor water use and curtail all outdoor water use. Fix any leaks within 24 hours.

Notification of the Water Conservation Alert System status on any given day shall be visibly posted at the exterior of the District’s Administration Office (2700 Foothill Blvd., La Crescenta) and other accessible locations throughout the District service area where allowed. At least one direct mailing shall be made to all water customer accounts, with notification and explanation of the alert system. Newspaper coverage will also be used to disseminate alert system status and water conservation updates.

# APPENDIX G

| Date       | Revisions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Approved by Board | Initials |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------|
| 04/28/2010 | Residential and commercial landscape irrigation has been increased from two (2) days per week to no more than three (3) days per week on Tuesday, Thursday and Saturday. Watering limits have been reduced to seven (7) minutes per watering station from (10) minutes per station.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 04/27/2010        |          |
| 07/11/12   | <ol style="list-style-type: none"> <li>1. Revise "Prohibited Use Applicable to <u>all</u> Customers" was revised to "Prohibited Use Applicable to <u>Existing and New</u> Customers"</li> <li>2. Add the following:<br/> <b>17. New Development</b> (new commercial and multi-family accounts) <ol style="list-style-type: none"> <li>1) All new commercial and multi-family accounts are prohibited from water waste such as, but not limited to: single-pass cooling systems; conveyor and in-bay vehicle wash and commercial laundry systems which do not reuse water; non-recirculating decorative water fountains.</li> <li>2) All landscape must be in accordance with the permitting agency's landscape ordinance. If the permitting agency does not have a landscape ordinance, the Department of Water Resources Model Landscape Ordinance will apply.</li> </ol> </li> </ol> | 07/10/12          |          |
| 7/23/14    | <ol style="list-style-type: none"> <li>1. Revised Orange Alert from three (3) days per week to two (2) days per week, Tuesdays and Saturdays</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 7/23/2014         |          |
| 4/7/15     | <ol style="list-style-type: none"> <li>1. Revise Appendix "G":<br/> <b>Windy and rainy days:</b> No watering, sprinkling or irrigating shall take place in any landscaped or vegetated areas on days when the wind is blowing causing overspray, and on days when it is raining.</li> <li>2. Add the following:<br/> <b>Windy and rainy days:</b> No watering, sprinkling or irrigating shall take place in any landscaped or vegetated areas on days when the wind is blowing causing overspray. <b>No irrigation or watering of turf or ornamental-landscapes during and 48 hours following measurable precipitation.</b></li> </ol>                                                                                                                                                                                                                                                 |                   |          |

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|--|--|--|--|

**RESOLUTION NO. 681**

**RESOLUTION OF THE BOARD OF DIRECTORS OF  
CRESCENTA VALLEY WATER DISTRICT  
ADOPTING A WATER CONSERVATION ALERT SYSTEM**

**WHEREAS**, the Crescenta Valley Water District was established for the purpose of providing adequate and reliable potable water to its inhabitants at a reasonable cost; and

**WHEREAS**, the groundwater supply in the Verdugo Basin is utilized as the primary source of water for District customers; and

**WHEREAS**, consecutive years of below normal precipitation in the watersheds of the Verdugo Basin have severely reduced the groundwater production capacity and individual well reliability in the Verdugo Basin and hence the water supply available to the District; and

**WHEREAS**, the District's imported water supply connections with the Foothill Municipal Water District and the emergency water supply interconnection with the City of Glendale, both which provide a supplemental source of water for District customers, are limited in size and capacity, may be subjected to random mechanical failures, and are being subjected to increased demands; and

**WHEREAS**, the District's imported water supply may be subject to a reduced water allotment from the Foothill Municipal Water District should the Metropolitan Water District of Southern California put into effect their approved allocation plan; and

**WHEREAS**, the above limitations have created the possibility that the District may be unable to meet customer demand during periods of high water use such as hot weather; and

**WHEREAS**, the District's Phase I Voluntary Water Conservation Program has been only minimally successful in reducing water demand; and

**WHEREAS**, conservation of water by District customers will help the District supply water for customers and keep water in storage for fire protection during peak periods; and

**WHEREAS**, peak summer water demands are generally considered to be caused by outdoor water use and the District should place special emphasis on outdoor water conservation; and

**WHEREAS**, the District, through its public information program, should advise and alert its customers to the serious nature of the situation and the need for a reduction in demand by customers through the use of a conservation alert system; and

**WHEREAS**, the District has the power and authority, under Section 375 of the California Water Code, to adopt water conservation measures for activities within its service area; and

**WHEREAS**, given the current conditions, the District finds it necessary and beneficial to undertake the second phase of its water conservation program; and

**NOW, THEREFORE, BE IT RESOLVED**, that the General Manager is authorized to implement a color-coded water conservation alert system, as Phase II of the goal to reduce the risk and severity of water shortage; and

**BE IT FURTHER RESOLVED**, that the Crescenta Valley Water District requires its customers to follow the alert system described below:

- a. Color Code “Blue” is defined as the Normal Water Conservation Alert, Foothill Municipal Water District can meet all Member Agency demands. Standard water conservation applies as defined in Appendix G of the Rules and Regulations.
- b. Color Code “Green” is defined as an Increased Voluntary Conservation Alert, some supplies have been impacted and customers should increase efforts to conserve by following strict water conservation practices indoors and limiting outdoor water use to odd or even days, based on ending number of customer address.
- c. Color Code “Yellow” is defined as an Extraordinary Conservation Alert, when Metropolitan Water District of Southern California is pulling water from most of its storage programs to meet demands. Extraordinary conservation is called for from customers. Customers are requested to minimize indoor water use and water outdoors no more than three (3) days per week. Outdoor irrigation will be permitted only on Tuesday, Thursday, and Saturday.
- d. Color Code “Orange” is defined as a Rationing Conservation Alert, when Metropolitan Water District of Southern California has implemented its allocation plan to its member agencies. Customers are requested to minimize indoor water use and severely limit outdoor water use as further detailed in Appendix G of the District Rules and Regulations.
- e. Color Code “Red” is defined as a Critical Water Conservation Alert, when water supplies are only available for health and safety needs. Customers are requested to minimize indoor water use and curtail all outdoor water use as further detailed in Appendix G of the District’s Rules and Regulations.

**BE IT FURTHER RESOLVED**, that the Board of Directors of the Crescenta Valley Water District authorize that Appendix G of the District’s Rules and Regulations is amended to read as attached; and

**BE IT FURTHER RESOLVED**, that if critical water shortages continue to exist and if a water conservation alert system proves insufficient to accomplish the necessary conservation, the Crescenta Valley Water District will consider additional and more restrictive phases of water conservation to curtail water use. Likewise, should water supply conditions return to normal, the Crescenta Valley Water District will also consider ending this program at such time.

**PASSED, APPROVED, AND ADOPTED** at a Regular Meeting of the Board of Directors of Crescenta Valley Water District held on January 7, 2009, Resolution No. 681 was adopted by the following vote:

**AYES: Directors**

**NOES: Directors None**

**ABSTAIN: Directors None**

\_\_\_\_\_  
**ATTEST: President, Board of Directors  
Crescenta Valley Water District**

\_\_\_\_\_  
**Secretary of the Board of Directors**

**STATE OF CALIFORNIA )  
                                  ) ss.  
COUNTY OF LOS ANGELES )**

**I, RON MITCHELL, Secretary of the Crescenta Valley Water District, DO HEREBY CERTIFY that the foregoing is a full, true and correct copy of Resolution No. 681 of the Board of Directors of Crescenta Valley Water District adopted at a Regular Meeting held on January 7, 2009, and that the same has not been amended or repealed.**

\_\_\_\_\_  
**Secretary of the Board of Directors of  
Crescenta Valley Water District**

**DATED: March 27, 2009 (S E A L)**

## **RESOLUTION NO. 682**

### **RESOLUTION OF THE BOARD OF DIRECTORS OF CRESCENTA VALLEY WATER DISTRICT ADOPTING A WATER CONSERVATION PROGRAM (PHASE I)**

**WHEREAS**, the Crescenta Valley Water District was established for the purpose of providing adequate and reliable potable water to its inhabitants at a reasonable cost; and

**WHEREAS**, the groundwater supply in the Verdugo Basin is utilized as the primary source of water for District customers; and

**WHEREAS**, consecutive years of below normal precipitation in the watersheds of the Verdugo Basin have severely reduced the groundwater production capacity in the Verdugo Basin and hence the water supply available to the District; and

**WHEREAS**, the District's imported water supply connections with the Foothill Municipal Water District, which provide a supplemental source of water for District customers, are limited in size and capacity and are being subjected to increased demands; and

**WHEREAS**, the District's imported water supply may be subject to a reduced water allotment from the Foothill Municipal Water District should the Metropolitan Water District of Southern California put into effect their approved allocation plan; and

**WHEREAS**, California has experienced an energy crisis which has resulted in extremely high energy costs; and

**WHEREAS**, the District is a user of significant quantities of energy to meet its system demands for the production, transmission, and distribution of water; and

**WHEREAS**, conservation of water by District customers will help relieve the problems caused by the shortage in supply and the increase in energy costs; and

**WHEREAS**, the District, through its public information program, should advise and alert its customers to the serious nature of the situation and the need for a reduction in demand by customers; and

**WHEREAS**, the District has the power and authority, under Section 375 of the California Water Code, to adopt water conservation measures for activities within its service area; and

**WHEREAS**, given the current conditions, the District finds it necessary and beneficial to undertake a phased water conservation program; and

**NOW, THEREFORE, BE IT RESOLVED**, that the General Manager is authorized to implement a water conservation program, as Phase I of the goal to reduce water use below pre-drought water usage, to reduce the risk and severity of water shortage; and

**BE IT FURTHER RESOLVED**, that the Crescenta Valley Water District prohibits the following water usage to all of its customers:

## **Prohibited Use Applicable to ALL Customers**

1. **Water hose usage:** Hose washing of sidewalks, walkways, driveways, or parking areas, tennis courts, patios, porches or other paved areas shall not be permitted. Exception: Flammable or other dangerous substances may be disposed of by direct hose flushing by public safety officers for the benefit of public health and safety. Businesses or schools required to hose down public eating areas will be provided with access to a water broom.
2. **Overspray and runoff:** Use of water for any purpose which results in overspray, excessive runoff onto hardscapes, driveways, street, adjacent lands or into gutters shall not be permitted.
3. **Fountains, similar structures:** Water used to clean, fill or maintain levels in decorative fountains or similar structures must be part of a recirculation system.
4. **Leaks:** Leaks from any facility both inside and outside of a customer's premises must be repaired within seventy-two hours after the customer is notified of, or discovers the leak. Failure to affect the repair of any leak shall subject said customer to all penalties provided herein for waste of water.
5. **Irrigating times: Irrigating times:** No watering, sprinkling or irrigating shall take place between the hours of nine a.m. (9:00AM) and five p.m. (5:00PM) in any landscaped or vegetated areas, including, including, but not limited to, golf courses, parks, cemeteries and school areas landscaped with, but not limited to, grass, lawn, groundcover, shrubbery, annual and perennial plants, crops, trees, and California-friendly plantings. With the exception of drip irrigation systems or weather based irrigation controllers, residential timers shall not run for more than a 10 minutes per station.
6. **Hand Watering:** Hand watering of non-turf areas is allowed using a hose with a positive shut-off nozzle or watering can within the allowable times as specified above.
7. **Windy and rainy days:** No watering, sprinkling or irrigating shall take place in any landscaped or vegetated areas on days when the wind is blowing causing overspray. No irrigation or watering of turf or ornamental-landscapes during and 48 hours following measurable precipitation.
8. **Vehicle washing:** The washing of commercial and non-commercial privately owned automobiles, trucks, trailers, motor-homes, boats, buses, airplanes and other types of vehicles is restricted to use of a hand-held bucket and quick rinses using a hose with a positive shut-off nozzle. Exceptions: the use of wash water which is on the immediate premises of a commercial car wash or commercial service station; where health, safety and welfare of the public is contingent upon frequent vehicle cleaning, such as garbage trucks and vehicles which transport food and perishables.

- 9. Swimming pools:** Owners of outdoor swimming pools, wading pools or spas, when these are not in use, are requested to use covers to minimize the evaporation of water.
- 10. Construction water restrictions:** Water for construction purposes including but not limited to de-brushing of vacant land, compaction of fills and pads, trench backfill and other construction uses, shall be used in an efficient manner which will not result in runoff.
- 11. Fire hydrants:** The use of potable water from fire hydrants shall be limited to firefighting, related activities or other activities immediately necessary to maintain the health, safety, and welfare of the residents of the city.
- 12. Drinking water upon request:** No restaurant, hotel, café, cafeteria or other public place where food is sold, served or offered for sale, shall serve drinking water to any customer unless expressly requested by a customer.
- 13. Hotels/Motels:** Hotels, motels, and other commercial lodging establishments are requested to post notices informing their guests about the city's water conservation policy and urging guests to conserve water. Water conservation notices will be provided by CVWD.
- 14. Hotels/Motels:** Hotels, motels and other commercial lodgings are requested to post notices giving their guests the option of not laundering towels and linens daily.
- 15. Reporting waste of water:** The District shall maintain a program for residents to report waste of water throughout the District boundaries. This will include an online submittal form, a dedicated phone number, and follow-up by District staff on all waste of water reports. Residents are requested to report any observed waste of water from surrounding properties or in the community and report to the District for follow-up.
- 16. Pre-rinse spray valve:** Where applicable, restaurants must utilize water conserving nozzles.
- 17. New Development.** 1). Prohibit water waste such as, but not limited to: single-pass cooling systems; conveyor and in-bay vehicle wash and commercial laundry systems which do not reuse water; non-re-circulating decorative water fountains, and address irrigation, landscape, and industrial, commercial, and other design deficiencies. 2). Enacts and enforces ordinances or establishes terms of service for water efficient design in new development, and supports local ordinances that establish permits for water efficient design in new development.

**BE IT FURTHER RESOLVED**, that the Crescenta Valley Water District urges the following water conservation practices to all of its customers:

1. Reduce the amount of turf and install new drought tolerant landscaping, low-water using trees and plants, and efficient irrigation systems including but not limited to evapotranspiration (ET) controllers, drip irrigation, and “high efficiency sprinkler heads”.
2. Wash only full loads of dishes or clothes in automatic washers, and do not allow indoor faucets to run continuously.
3. Turn off water system when leaving property unoccupied for an extended period of time.

## VIOLATIONS

For any customer of the District in violation of the provisions listed in the Waste of Water Ordinance:

**First Violation:** The District shall issue a written notice of the fact of such violation to the customer.

**Second Violation:** The District shall issue a written warning to the customer of the fact of such second violation with a statement of the possible penalties for the present violation for which the notice was written, the possible penalties for each subsequent violation should they occur, and a written copy of this resolution.

**Third Violation:** The District shall install a flow-restricting device of one gallon per minute (1gpm) capacity for services up to one and one-half inch size, and comparatively sized restrictors for larger service, on the service of the customer at the premises at which the violation occurred for a period of not less than forty-eight hours.

The charge for installing a flow-restricting device shall be based upon the size of the meter and shall not exceed \$150.00.

The charge for removal of the flow-restricting device and restoration of normal service shall not exceed \$100.00. Restoration of normal service will be performed during regular working hours on regular working days.

**For any subsequent violation or any willful violation:** The District shall either install a flow-restricting device, for a period of time not less than one week or discontinue water service to that customer at the premises at which the violation occurred.

The charge for installing a flow-restricting device shall be based upon the size of the meter and shall not exceed \$200.00.

The charge for removal of the flow-restricting device and restoration of normal service shall not exceed \$150.00. Restoration of normal service will be performed during regular working hours on regular working days.

**Notice:** The District shall give notice of each violation to the customer committing such violation as follows:

**For the first violation:** The District shall give written notice of the fact of such violation to the customer personally or by United States regular mail.

**For the second violation:** The District shall give written notice of the fact of such violation to the customer by United States certified mail, return receipt requested.

**For any subsequent violations:** If the penalty assessed is, or includes the installation of a flow-restrictor or the discontinuance of water service to the customer for any period of time whatsoever, notice of the fact of the violation shall be delivered fifteen (15) working days before the penalty is to be enacted, in the following manner:

- ✚ Personal delivery of written notice to the customer at their residence or place of business and obtain their signature of delivery.
- ✚ Return receipt delivery to customer at their residence or place of business.

All notices shall contain, in addition to the facts of the violation, a statement of the possible penalties for the present violation for which the notice was written and each subsequent violation, a statement of the anticipated date of the penalty, if any, will be enacted for the present violation, and a statement informing the customer of the customer's right to a hearing on the violation.

**Hearing:** Any customer against whom a restriction or limitation is levied has the right to a hearing and a right to appeal to the Board of Directors. Written request from customer to the District must be received within fifteen (15) working days of the date of notification of the violation. Before the hearing can be scheduled all existing plumbing fixtures in the structure must be retrofitted exclusively with water-conserving plumbing fixtures including low flush or high efficiency toilets, low flow showerheads, and aerators. A water audit will be used to verify installation.

Enactments of the appropriate penalty shall be deferred until the appeal is resolved.

If the appeal decision is NOT in favor of the customer, the determined penalty shall be enacted within ten (10) days after the customer is advised of the decision in writing through certified mail, return receipt requested.

**Reservation of Rights:** The rights of the District hereunder shall be cumulative to any other right of the District to discontinue service. All monies collected by the District pursuant to any of the penalty provisions of the chapter shall be deposited in the water revenue fund as reimbursement for the District's costs and expenses of administering and enforcing this ordinance.

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

**BE IT FURTHER RESOLVED**, that the Board of Directors of the Crescenta Valley Water District authorize that Section 8.07(c) and Appendix G of the District's Rules and Regulations are amended to read as attached; and

**BE IT FURTHER RESOLVED**, that if critical water shortages continue to exist and if current measures prove insufficient to accomplish the necessary conservation, the Crescenta Valley Water District will consider additional and more restrictive phases of water conservation to curtail water use. Likewise, should water supply conditions return to normal, the Crescenta Valley Water District will also consider ending this program.

**PASSED, APPROVED, AND ADOPTED** at a Regular Meeting of the Board of Directors of Crescenta Valley Water District held on April 7, 2015, amendments to Resolution No. 682 were adopted by the following vote:

**AYES:**

**NOES:**

**None**

**ABSENT:**

**None**

**ATTEST:**

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**President, Board of Directors  
Crescenta Valley Water District**

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**Secretary of the Board of Directors**

STATE OF CALIFORNIA            )  
                                                  )  
COUNTY OF LOS ANGELES        )           ss.

**I, RON MITCHELL, Secretary of the Crescenta Valley Water District, DO HEREBY CERTIFY that the foregoing is a full, true and correct copy of the amendments to Resolution No. 682 of the Board of Directors of Crescenta Valley Water District adopted at a Regular Meeting held on April 7, 2015 and that the same has not been amended or repealed.**

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**Secretary of the Board of Directors of  
Crescenta Valley Water District**

**DATED: April 7, 2015**

**(S E A L)**

| Date       | Revisions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Approved by<br>Board | Initials |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------|
| 04/07/2015 | <p>1. Revise Resolution 682:</p> <p><b>Windy and rainy days:</b> No watering, sprinkling or irrigating shall take place in any landscaped or vegetated areas on days when the wind is blowing causing overspray, and on days when it is raining.</p> <p>2. Add the following:</p> <p><b>Windy and rainy days:</b> No watering, sprinkling or irrigating shall take place in any landscaped or vegetated areas on days when the wind is blowing causing overspray. No irrigation or watering of turf or ornamental-landscapes during and 48 hours following measurable precipitation.</p> |                      |          |



## **Appendix D: CVWD Water Survey Form**

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**Crescenta Valley Water District 2015 Urban Water Management Plan**

# Residential Water Use Survey

*Provided by Crescenta Valley Water District*

Telephone Number:

Water Account No.:

Survey Conducted On:

Year Home Built:

No. of Residents:

Water Meter Reading:

Meter Leak Detected: Yes ☐ No ☐

Leak Flow (gal/month):

Dear Customer:

Crescenta Valley Water District recently conducted a Residential Water Use Survey of your home as part of the District's ongoing efforts to improve water use efficiency. WaterWise Consulting, Inc., an independent consulting firm, conducted this survey and hereby submits this report. This report includes recommendations for improving water use efficiency, which could lead to a potential reduction of your water bill. According to our findings, implementation of the enclosed recommendations may provide the following potential water savings:

| Areas Surveyed in Residence                 | Potential Annual Water Savings |         |
|---------------------------------------------|--------------------------------|---------|
|                                             | Billing Units                  | Gallons |
| 1. Leak in Residence                        |                                |         |
| 2. Bathroom Water Use                       |                                |         |
| 3. Kitchen Water Use                        |                                |         |
| 4. Laundry Water use                        |                                |         |
| 5. Swimming Pool Water Use                  |                                |         |
| 6. Landscape Irrigation Water Use           |                                |         |
| <b>Total Potential Annual Water Savings</b> |                                |         |

*One billing unit is equal to 1,000 gallons*

Implementing the recommended changes and improvements are estimated to save you approximately \$ \_\_\_\_\_ annually. The following pages provide a summary of the areas surveyed in your residence. Thank you for participating in this water use survey.

If you have any questions about this survey or the recommendations provided, please contact

Thank you,

Water Survey Team  
WaterWise Consulting, Inc.



# Indoor Water Use

Typically, indoor water use accounts for approximately 40% of the total water used in a residence. Of the total water used indoors, more than half is used in the bathroom. This includes water used for toilets, showers, and faucets. There is a potential for significant water savings for indoor water use, especially if your home has fixtures that were manufactured or installed prior to 1994. Newer fixtures are more water efficient, and will help you conserve water with every use.

## Bathroom Water Use

**Toilets** — Toilets typically account for one-third of total indoor water use. Older toilet models flush at a volume of 3.5 gallons per flush (gpf) or greater. High Efficiency Toilets (HETs) flush at a volume of 1.28 gpf or less.

Number of toilets at this residence:

Number of **Non Conserving** toilets:

Average volume of **Non Conserving** toilets:

Toilet leak detected: Yes ☐ No ☐

Number of toilet leaks detected:



*High Efficiency Toilet (HET)*

**Water Savings with Water Conserving Toilets:**

**Showerheads** — Water use from showers and baths account for about 20% of the water used indoors. Non-efficient showerheads have flow rates as high as 5 gallons per minute (gpm). New low-flow showerhead models offer a low-flow rate of 2.0 gpm or less.

Number of showerheads at this residence:

Number of **Non Conserving** showerheads:

Average flow of **Non Conserving** showerheads (gpm):

Current average length of shower (minutes):

Suggested length of shower (minutes):

Number of showers per week per person:



*Low-Flow Showerhead*

**Water Savings with Low-Flow Showerheads:**

**Bathroom Faucets**—Faucets without aerators typically use more than 4 gallons of water per minute. Installing low-flow faucet aerators can reduce water use to about 1.0 gallon per minute (gpm) or less.

Number of bathroom faucets at this residence:

Number of **Non Conserving** bathroom faucets:

Average flow of **Non Conserving** faucets (gal/min):



*Low-Flow Faucet Aerator*

**Water Savings with Low-Flow Faucet Aerators:**

## Kitchen Water Use

**Kitchen Faucet** — Faucets without aerators typically use more than 4 gallons of water per minute. Installing low-flow kitchen faucet aerators can reduce water use to 1.5 gallons per minute (gpm) or less.

Number of kitchen faucets in this residence:

Number of **Non Conserving** kitchen faucets:

Average flow rate of **Non Conserving** faucets (gpm):

**Water Savings with Kitchen Faucet Aerator:**



*Kitchen Faucet Aerator*

**Dishwasher** — Older, non-efficient dishwashers use between 12 and 15 gallons of water for every load. High efficiency, Energy Star models use approximately 7 gallons of water per load and also provide significant energy savings.

Dishwasher make/model:

Efficient Dishwasher: Yes ☐ No ☐

Pre-rinse dishes: Yes ☐ No ☐

Existing dishwasher capacity in gallons:

Dishwasher loads per week:

**Water Savings with High Efficiency Dishwasher:**



*High Efficiency Dishwasher*

## Laundry Water Use

**Clothes Washer**—Older clothes washer models can use up to 40 gallons of water for every load. High efficiency clothes washers use approximately 15 gallons or less per load. High efficiency models also help save energy, by reducing the volume of hot water used, and reducing drying times.

Clothes Washer make/model:

Existing clothes washer capacity in gallons:

Clothes washer loads per week:

**Water Savings with High Efficiency Clothes Washer:**



*High Efficiency Clothes Washer*

## Swimming Pool Water Use

**Swimming Pool**—Evaporation of water from a swimming pool is significant in the summer months. A pool cover is recommended to reduce the amount of water lost to evaporation. Pool covers may also help save energy by reducing heat loss, and reducing costs required for chemicals used in refill water. Please note, it is usually recommended to drain and refill a pool only once every three years, or less frequently.

Does this residence have a pool: Yes ☐ No ☐

Does pool have cover: Yes ☐ No ☐

How often is pool drained and refilled (years):

Pool Depth (ft):

Pool Surface Area ft<sup>2</sup>:

Pool Volume (gallons):

**Water Savings with Pool Cover & 3 yr. Refill Rate:**

# Landscape Irrigation Water Use

## General Landscape Information

Total Landscape Area (ft<sup>2</sup>): \_\_\_\_\_

### Overall Plant Type:

- All Lawn ☐
- Mostly Lawn ☐
- Equal Lawn / Planter ☐
- Mostly Planter ☐
- All Planter ☐

### Type of Soil:

- Clay ☐
- Clay Loam ☐
- Loam ☐
- Sandy Loam ☐
- Sandy ☐

### Type of Irrigation:

- Automatic System ☐
- Manual System ☐
- Hand Watering ☐
- No Irrigated Landscape ☐
- Weather Based Controller: ☐

**Estimated Annual Landscape Water Need:** \_\_\_\_\_ Gallons or \_\_\_\_\_ KGAL Billing Units

*Estimated water need calculated based on landscape area, general plant type, and local weather conditions.*

## Irrigation System Inspection

Controller Model: \_\_\_\_\_ No. Stations: \_\_\_\_\_

Current Watering Schedule:

### Irrigation Stations Checked

| Plant Type:         | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---------------------|---|---|---|---|---|---|---|---|---|----|----|----|
| Cool Season Lawn    |   |   |   |   |   |   |   |   |   |    |    |    |
| Warm Season Lawn    |   |   |   |   |   |   |   |   |   |    |    |    |
| Medium Water Use    |   |   |   |   |   |   |   |   |   |    |    |    |
| Low Water Use       |   |   |   |   |   |   |   |   |   |    |    |    |
| Very Low Water Use  |   |   |   |   |   |   |   |   |   |    |    |    |
| System Type:        | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Spray Heads         |   |   |   |   |   |   |   |   |   |    |    |    |
| Rotor or Impact     |   |   |   |   |   |   |   |   |   |    |    |    |
| Bubblers            |   |   |   |   |   |   |   |   |   |    |    |    |
| Drip/Micro-Spray    |   |   |   |   |   |   |   |   |   |    |    |    |
| Stream Sprays       |   |   |   |   |   |   |   |   |   |    |    |    |
| System Problems:    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Broken Sprinklers   |   |   |   |   |   |   |   |   |   |    |    |    |
| Overspray           |   |   |   |   |   |   |   |   |   |    |    |    |
| Interference        |   |   |   |   |   |   |   |   |   |    |    |    |
| Tilted Sprinklers   |   |   |   |   |   |   |   |   |   |    |    |    |
| Mixed Equipment     |   |   |   |   |   |   |   |   |   |    |    |    |
| Pressure Too High   |   |   |   |   |   |   |   |   |   |    |    |    |
| Pressure Too Low    |   |   |   |   |   |   |   |   |   |    |    |    |
| Low or Sunken Heads |   |   |   |   |   |   |   |   |   |    |    |    |
| Clogged Heads       |   |   |   |   |   |   |   |   |   |    |    |    |

Refer to page 6 of the report for a description of each system problem listed.

# Watering Schedule

1. Re-program your timer each month using your Watering Schedule as a guide.
2. Please note that Water Conservation Orange Alert is currently in effect. Watering is limited to two (2) days of the week, before 9:00 a.m. and after 5:00 pm. For more information, please review the alert flyer attached to this report.
3. **The watering schedule below is for representative stations of your landscape.** You may use the numbers provided as a guide for other stations watering similar plant types with the same type of irrigation system.

## Watering Schedule for Representative Stations:

| Station No:                     | Plant Type: |     |     |     |     |     |     |     |     |     |     |     | System: |
|---------------------------------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------|
| Month                           | Jan         | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |         |
| Minutes of Irrigation per Cycle |             |     |     |     |     |     |     |     |     |     |     |     |         |
| Cyles per Day                   |             |     |     |     |     |     |     |     |     |     |     |     |         |
| Days per Week                   |             |     |     |     |     |     |     |     |     |     |     |     |         |

| Station No:                     | Plant Type: |     |     |     |     |     |     |     |     |     |     |     | System: |
|---------------------------------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------|
| Month                           | Jan         | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |         |
| Minutes of Irrigation per Cycle |             |     |     |     |     |     |     |     |     |     |     |     |         |
| Cyles per Day                   |             |     |     |     |     |     |     |     |     |     |     |     |         |
| Days per Week                   |             |     |     |     |     |     |     |     |     |     |     |     |         |

| Station No:                     | Plant Type: |     |     |     |     |     |     |     |     |     |     |     | System: |
|---------------------------------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------|
| Month                           | Jan         | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |         |
| Minutes of Irrigation per Cycle |             |     |     |     |     |     |     |     |     |     |     |     |         |
| Cyles per Day                   |             |     |     |     |     |     |     |     |     |     |     |     |         |
| Days per Week                   |             |     |     |     |     |     |     |     |     |     |     |     |         |

\*Note: Suggested days per week are based on current water restrictions. Please visit [www.CVWD.com](http://www.CVWD.com) for up-to-date drought information and current water restrictions.

## Landscape & Irrigation Recommendations

### Landscape Recommendations:

- Convert unused lawn areas to low water use plants ☐
- Reduce the overall size of your landscape ☐
- Separate lawn from shrub and tree irrigation zones ☐
- Sunny and shady areas must be on separate zones ☐
- Install 2-4 inches of mulch on shrub & tree planters ☐

### Irrigation System Recommendations:

- Implement suggested watering guidelines ☐
- Fix irrigation system problems listed on page ☐
- Install a Weather Based Irrigation Controller ☐
- Convert spray zones in planters to drip irrigation ☐
- Retrofit spray zones in lawn to rotating nozzles ☐

### Potential for Water Savings in Landscape Irrigation is:

☐ None (0%)      Minor (1% -10%) =  %      Significant (11% -20%) =  %      Major (21% - 30%) =  %

Smart Controller Recommended:      Yes ☐      No ☐

**Estimated Water Savings with Implementation of Recommendations:**

**Gallons per Year**

### **Additional Notes:**

For significant water savings, consider replacing unused lawn areas with low water use planter areas and reducing irrigation runtimes to meet with conservation ordinances. For ideas of what plants to use in place of turf please go to [www.bewaterwise.com](http://www.bewaterwise.com) and click on garden spot. This page also contains useful information on other water saving practices.

## Glossary of Terms

**Broken Sprinkler Heads or Lateral Pipes:** a broken sprinkler head or lateral pipe wastes a significant amount of water. Fix or replace all broken sprinklers and lateral pipes.

**Overspray:** irrigation water that lands on sidewalks and driveways is wasted and creates other problems, such as runoff and deterioration of pavement. All sprinkler types can be adjusted to fit the area being watered.

**Spray Interference from Plants and Objects:** when the spray or stream of water from the sprinklers is blocked, this may create brown spots in lawn and may deteriorate plant health. Spray interference also creates runoff and erosion problems near the sprinkler head. Make sure there is no plant or object interfering with the sprinkler spray or stream.

**Tilted Sprinkler Heads:** a tilted sprinkler head will not deliver the water evenly. Some areas will get too much water, while other areas may not get enough. Make sure the sprinkler heads are vertical when watering non-sloping areas.

**Mixed Equipment Under the Same Valve:** mixing spray head sprinklers and rotor sprinklers is not acceptable. Rotors and sprays have different application rates. A spray head delivers more water over an area compared to the rotor head system.

**Pressure Too High:** misting is a result of high pressure which leads to water waste due to wind drift. Install a pressure regulator for each valve or install one main pressure regulator for all valves with this problem.

**Pressure Too Low:** Low pressure is a problem common in rotor type systems. If you have this problem, you may have to change sprinkler nozzles to a smaller size or have fewer sprinklers running at the same time.

**Low or Sunken Sprinkler Heads:** low or sunken sprinkler heads lower the performance of the system. The problem may be occurring because of a short sprinkler pop-up height. Minimum pop-up height for sprinklers watering lawn is 4 inches, especially when watering higher-growing grasses like tall fescue.

**Clogged Sprinkler Nozzles:** clogging is common in spray heads. Clogging may occur at the orifice where water comes out or at the filter below the nozzle. Clogged heads create brown spots in lawns. In extreme cases, clogged heads become plugged completely. Clean or replace clogged sprinkler nozzles.

**Smart Controller:** a self adjusting controller that changes minutes and days of irrigation to correspond with changing weather patterns. It's important to have a well functioning irrigation system in order for a Smart Controller to be effective.

# WATER CONSERVATION

## ORANGE ALERT

**ORANGE ALERT** is defined as a Rationing Conservation Alert.

In response to Governor Jerry Brown's Executive Order to implement water use reduction during this serious drought, Crescenta Valley Water District is mandated by the State Water Board to achieve a 24% reduction in water use.

Crescenta Valley Water District Water Conservation Ordinances require that customers minimize indoor water use and severely limit outdoor water use as follows:

- Landscape irrigation is limited to two (2) days per week, **Tuesdays and Saturdays before 9:00AM and after 5:00PM.**
- Hand watering of potted plants and vegetable gardens are excluded from the time limitations.
- The draining and refilling of pools is prohibited unless mandated by Federal, State or local health codes. The District strongly urges that a pool cover be used to prevent evaporation and thereby reducing the frequency of refilling required to prevent equipment failure.
- Vehicle washing is permitted only when using a bucket and quick rinses with a hose using a positive shut-off nozzle.
- Leaks must be repaired within 48 hours after customer discovers or is notified by the District of the leak.

In addition to the above, the following regulations are always in effect:

- Hose washing of any hardscaped areas is prohibited.
- Use of water for any purpose which results in overspray and runoff onto hardscapes is prohibited.
- No watering, sprinkling or irrigating on days when it is raining or the wind is blowing hard enough to cause overspray.

The District maintains a program for residents to report waste of water within the District. Use the anonymous online form on the District website, [www.cvwd.com](http://www.cvwd.com), or call the dedicated phone line, 818-248-3897. All reported wastes of water are followed up on by District personnel.



CRESCENTA VALLEY WATER DISTRICT  
2700 Foothill Blvd. La Crescenta, CA 91214  
818-248-3925

# INDOORS:

- Shorten your shower by two minutes and save up to 5 gallons
- Turn off the water when brushing your teeth or shaving and save 2 gallons per minute
- Wash only full loads of dishes and clothes and save between 15 and 50 gallons per load
- Check faucets and pipes for leaks and save up to 20 gallons a day for every leak you fix
- Check toilets for leaks and save 600 gallons per month. Stop by the District office and pick up toilet leak detection tablets
- Install a low-flow shower head and save 15 gallons per shower
- Install a faucet aerator and save 90 gallons per month
- Capture tap water and water from your shower in a bucket while waiting for the water to warm up, and use the water for house plants or your garden

# OUTDOORS:



- Install a smart sprinkler controller and save up to 40 gallons a day
- Use a broom to clean hardscaped areas
- Mulch, mulch, mulch around plants – saves hundreds of gallons per year as it aids in reducing evaporation
- Check your sprinkler system for leaks, broken sprinkler heads, and overspray and save 500 gallons per month
- Let your grass grow longer, 2 to 3 inches longer than usual. The longer grass helps keep the soil cooler and helps to retain water
- Better yet, replace your existing lawn, ask us how. Plant drought tolerant or native plants, in addition to designing with permeable paving and get a rebate!



## **Appendix E: CVWD Board Resolution Adopting 2015 UWMP**

---

**Crescenta Valley Water District 2015 Urban Water Management Plan**

## **RESOLUTION NO. 729**

### **A RESOLUTION OF THE CRESCENTA VALLEY WATER DISTRICT TO ADOPT THE URBAN WATER MANAGEMENT PLAN**

The Board of Directors of the Crescenta Valley Water District does hereby resolve as follows:

**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 District is an urban supplier of water providing water to over 3,000 customers; and

**WHEREAS**, the Plan shall be periodically reviewed at least once every five years, and that the District 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, 2016, after public review and hearing, and filed with the California Department of Water Resources within thirty days of adoption; and

**WHEREAS**, the District has therefore, prepared and circulated a public notice or draft Urban Water Management Plan, and a properly noticed public hearing regarding said Plan was held by the Board of Directors on May 17, 2016 and

**WHEREAS**, the Crescenta Valley Water District did prepare and shall file said Plan with the California Department of Water Resources following its adoption.

**RESOLVED**, the District hereby adopts said Urban Water Management Plan.

**PASSED AND ADOPTED** at an Adjourned Regular Meeting of the Board of Directors of Crescenta Valley Water District held on May 17, 2016. Resolution No. 729 was adopted by the following vote:

|                 |                  |                                                                                                             |
|-----------------|------------------|-------------------------------------------------------------------------------------------------------------|
| <b>AYES:</b>    | <b>Directors</b> | <b>Director Erickson<br/>Director Bodnar<br/>Director Claessens<br/>Director Putnam<br/>Director Tejeda</b> |
| <b>NOES:</b>    | <b>Directors</b> | <b>None</b>                                                                                                 |
| <b>ABSTAIN:</b> | <b>Directors</b> | <b>None</b>                                                                                                 |

ATTEST:

  
\_\_\_\_\_  
President, Board of Directors  
Crescenta Valley Water District

  
\_\_\_\_\_  
Secretary of the Board of Directors

STATE OF CALIFORNIA            )  
                                          )  
COUNTY OF LOS ANGELES    )       ss.

I, RON MITCHELL, Secretary of the Crescenta Valley Water District, DO HEREBY CERTIFY that the foregoing is a full, true and correct copy of Resolution No. 729 of the Board of Directors of Crescenta Valley Water District adopted at a Regular Meeting held on May 17, 2016 and that the same has not been amended or repealed.

  
\_\_\_\_\_  
Secretary of the Board of Directors of  
Crescenta Valley Water District

DATED: October 8<sup>th</sup> 2013

(SEAL)



## **Appendix F: Two-Week & One-Week Notification of Public Hearing**

---

**Crescenta Valley Water District 2015 Urban Water Management Plan**

## NOTICE OF PUBLIC HEARING CRESCENTA VALLEY WATER DISTRICT URBAN WATER MANAGEMENT PLAN UPDATE

Notice is hereby given, that the District's Draft Urban Water Management Plan is available for public review.

The Urban Water Management Planning Act requires urban water suppliers, such as CVWD, to prepare a management plan of its current and future water resources so as to continue to provide its customers with an adequate and reliable water supply.

The District is inviting public review and comment on the 2015 Urban Water Management Plan (UWMP). The public can make comments through May 17th, 2016 by 4:30 p.m. in writing to CVWD, 2700 Foothill Blvd, La Crescenta, CA 91214 or by email to [cjscott@cvwd.com](mailto:cjscott@cvwd.com).

**A public hearing on the draft 2015 UWMP will be held**

**May 17th, 2016, at 7:00 p.m.**

**at the District's main office located at**

**2700 Foothill Blvd, La Crescenta, CA 91214.**

All public comments will be reviewed before the Board of Directors considers the draft 2015 UWMP for adoption at its May 17th, 2016 meeting.

Copies of the draft 2015 UWMP are available for review on the District's website at [www.cvwd.com](http://www.cvwd.com), or at the District's main office. Customers may also request an electronic copy by email to [cjscott@cvwd.com](mailto:cjscott@cvwd.com).

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## Crescenta Valley Water District

2700 Foothill Boulevard, La Crescenta, California 91214  
Phone (818) 248-3925 Fax (818) 248-1659

### Directors

Judy L. Tejada  
James D. Bodnar  
Kerry D. Erickson  
Kenneth R. Putnam  
Michael L. Claessens

### Officers

Thomas A. Love, P.E.  
*General Manager*  
Ron L. Mitchell  
*Secretary-Treasurer*

April 27, 2016

Connie Chung  
County of Los Angeles, Regional Planning  
320 West Temple, 13<sup>th</sup> Floor  
Los Angeles, CA 90012

Subject: 2015 Crescenta Valley Water District Urban Water Management Plan

This letter serves as a follow-up to the letter dated March 15, 2016 informing all affected agencies that the Crescenta Valley Water District (District) is intending to review and update its 2010 Urban Water Management Plan pursuant to California State Water Code Section 10610-10610.4. A public hearing for the District's Urban Water Management Plan is scheduled to take place on May 17, 2016, at 7:00 p.m. at the District's Main Office- 2700 Foothill Blvd., La Crescenta, CA 91214.

The DRAFT 2015 Urban Water Management Plan is available on the District's website, [www.cvwd.com](http://www.cvwd.com) for review and comments. Please contact Christy Scott at 818-248-3925 for more information.

Sincerely,

Christy J Scott



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April 27, 2016

Mr. Robert Stanley  
City of La Canada-Flintridge  
Planning Dept.  
1327 Foothill Blvd.  
La Canada, CA 91011

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*Secretary-Treasurer*

April 27, 2016

Erik Krause  
City of Glendale  
Interim Deputy Director of Planning  
141 N. Glendale Avenue  
Glendale, CA 91206

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April 27, 2016

Nina Jazamadarian  
General Manager  
Foothill Municipal Water District  
4536 Hampton Road  
La Canada, CA 91011

Subject: 2015 Crescenta Valley Water District Urban Water Management Plan

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Christy J. Scott

Crescenta Valley Weekly

3800 La Crescenta Avenue #101  
La Crescenta, CA 91214  
(818) 248-2740

PROOF OF PUBLICATION  
(2015.5 C.C.P)

State of California  
County of Los Angeles

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 part to or interested in the above entitles matter. I am the principle clerk of the printer Crescenta Valley Weekly. A newspaper published in the English language in the city of GLENDALE, county of LOS ANGELES, State of CALIFORNIA on the date of November 4, 2014, Case Number BS145803; that the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of the said newspaper and not in any supplement thereof on the following dates, to-wit:

April 28, 2016 and May 5, 2016

I declare under penalty of perjury that the foregoing is true and correct.

Dated Glendale, Los Angeles County, California,  
May 5, 2016

Publication Fee \$550/each; \$1,100 total

X Robin Goldsworthy



## **Appendix G: 60-Day Notification of Public Hearing**

---

**Crescenta Valley Water District 2015 Urban Water Management Plan**



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March 15, 2016

Connie Chung  
County of Los Angeles, Regional Planning  
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Another notice will be sent two weeks prior to the actual public hearing date. Please contact Christy Scott at 818-248-3925 for more information.

Sincerely,

Christy J Scott



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Sincerely,

Christy J. Scott



## **Appendix H: WUE Tool 2015 Population**

---

**Crescenta Valley Water District 2015 Urban Water Management Plan**



**Population Using Persons-Per-SF Connection and Persons-Per-MF/GQ Connection**

| Year                                                  |      | # SF<br>Connections               | # MF/GQ<br>Connections           | Persons per<br>SF Connection | Persons per<br>MF/GQ Connection | SF<br>Population | MF/GQ<br>Population | Total<br>Population |
|-------------------------------------------------------|------|-----------------------------------|----------------------------------|------------------------------|---------------------------------|------------------|---------------------|---------------------|
| <b>10 to 15 Year Baseline Population Calculations</b> |      |                                   |                                  |                              |                                 |                  |                     |                     |
| Year 1                                                | 1996 | <input type="text"/>              | <input type="text"/>             | 3.45                         | 12.76                           |                  |                     |                     |
| Year 2                                                | 1997 | <input type="text"/>              | <input type="text"/>             | 3.45                         | 12.76                           |                  |                     |                     |
| Year 3                                                | 1998 | <input type="text"/>              | <input type="text"/>             | 3.45                         | 12.76                           |                  |                     |                     |
| Year 4                                                | 1999 | <input type="text"/>              | <input type="text"/>             | 3.45                         | 12.76                           |                  |                     |                     |
| Year 5                                                | 2000 | <input type="text"/>              | <input type="text"/>             | 3.45                         | 12.76                           |                  |                     |                     |
| Year 6                                                | 2001 | <input type="text"/>              | <input type="text"/>             | 3.45                         | 12.76                           |                  |                     |                     |
| Year 7                                                | 2002 | <input type="text"/>              | <input type="text"/>             | 3.45                         | 12.76                           |                  |                     |                     |
| Year 8                                                | 2003 | <input type="text"/>              | <input type="text"/>             | 3.45                         | 12.76                           |                  |                     |                     |
| Year 9                                                | 2004 | <input type="text"/>              | <input type="text"/>             | 3.45                         | 12.76                           |                  |                     |                     |
| Year 10                                               | 2005 | <input type="text"/>              | <input type="text"/>             | 3.45                         | 12.76                           |                  |                     |                     |
| <b>5 Year Baseline Population Calculations</b>        |      |                                   |                                  |                              |                                 |                  |                     |                     |
| Year 1                                                | 2003 | <input type="text"/>              | <input type="text"/>             | 3.45                         | 12.76                           |                  |                     |                     |
| Year 2                                                | 2004 | <input type="text"/>              | <input type="text"/>             | 3.45                         | 12.76                           |                  |                     |                     |
| Year 3                                                | 2005 | <input type="text"/>              | <input type="text"/>             | 3.45                         | 12.76                           |                  |                     |                     |
| Year 4                                                | 2006 | <input type="text"/>              | <input type="text"/>             | 3.45                         | 12.76                           |                  |                     |                     |
| Year 5                                                | 2007 | <input type="text"/>              | <input type="text"/>             | 3.45                         | 12.76                           |                  |                     |                     |
| <b>2015 Compliance Year Population Calculations</b>   |      |                                   |                                  |                              |                                 |                  |                     |                     |
| 2015                                                  |      | <input type="text" value="6827"/> | <input type="text" value="693"/> | 3.45 *                       | 12.76 *                         | 23,542           | 8,843               | 32,385              |

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## **Appendix I: DWR Data Tables & UWMP Checklist**

---

**Crescenta Valley Water District 2015 Urban Water Management Plan**

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

| Public Water System Number | Public Water System Name        | Number of Municipal Connections 2015 | Volume of Water Supplied 2015 |
|----------------------------|---------------------------------|--------------------------------------|-------------------------------|
| 1910028                    | Crescenta Valley Water District | 8,102                                | 3,638                         |
|                            |                                 |                                      |                               |
|                            |                                 |                                      |                               |
| <b>TOTAL</b>               |                                 | 8,102                                | 3,638                         |
| NOTES:                     |                                 |                                      |                               |

| Table 2-2: Plan Identification      |                                                                                 |                                                                        |
|-------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Select Only One                     | Type of Plan                                                                    | Name of RUWMP or Regional Alliance <i>if applicable drop down list</i> |
| <input checked="" type="checkbox"/> | Individual UWMP                                                                 |                                                                        |
|                                     | <input type="checkbox"/> Water Supplier is also a member of a RUWMP             |                                                                        |
|                                     | <input type="checkbox"/> Water Supplier is also a member of a Regional Alliance |                                                                        |
| <input type="checkbox"/>            | Regional Urban Water Management Plan (RUWMP)                                    |                                                                        |
| NOTES:                              |                                                                                 |                                                                        |

**Table 2-3: Agency Identification**

Type of Agency (select one or both)

|                                     |                        |
|-------------------------------------|------------------------|
| <input type="checkbox"/>            | Agency is a wholesaler |
| <input checked="" type="checkbox"/> | Agency is a retailer   |

Fiscal or Calendar Year (select one)

|                                     |                                   |
|-------------------------------------|-----------------------------------|
| <input checked="" type="checkbox"/> | UWMP Tables Are in Calendar Years |
| <input type="checkbox"/>            | UWMP Tables Are in Fiscal Years   |

If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins  
(mm/dd)

Units of Measure Used in UWMP (select from Drop down)

|      |    |
|------|----|
| Unit | AF |
|------|----|

NOTES:

|                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------|
| <b>Table 2-4 Retail: Water Supplier Information Exchange</b>                                                              |
| The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631. |
| Wholesale Water Supplier Name <i>(Add additional rows as needed)</i>                                                      |
| Foothill Municipal Water District                                                                                         |
|                                                                                                                           |
|                                                                                                                           |
| NOTES:                                                                                                                    |

### Table 3-1 Retail: Population - Current and Projected

| Population Served | 2015   | 2020   | 2025   | 2030   | 2035   | 2040( <i>opt</i> ) |
|-------------------|--------|--------|--------|--------|--------|--------------------|
|                   | 32,385 | 33,203 | 34,041 | 34,901 | 35,782 | 36,686             |

NOTES:

**Table 4-1 Retail: Demands for Potable and Raw Water - Actual**

| Use Type<br>(Add additional rows as needed)                                                                                                                            | 2015 Actual                           |                                                               |        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------|--------|
| <b>Drop down list</b><br><i>May select each use multiple times</i><br><i>These are the only Use Types that will be recognized by the WUEdata online submittal tool</i> | Additional Description<br>(as needed) | Level of Treatment<br>When Delivered<br><i>Drop down list</i> | Volume |
| Single Family                                                                                                                                                          |                                       |                                                               | 2,181  |
| Multi-Family                                                                                                                                                           |                                       |                                                               | 800    |
| Commercial                                                                                                                                                             | including institutional               |                                                               | 292    |
| Landscape                                                                                                                                                              |                                       |                                                               | 82     |
| Other                                                                                                                                                                  |                                       |                                                               | 0      |
| Losses                                                                                                                                                                 |                                       |                                                               | 283    |
| <b>TOTAL</b>                                                                                                                                                           |                                       |                                                               | 3,638  |
| NOTES:                                                                                                                                                                 |                                       |                                                               |        |

### Table 4-2 Retail: Demands for Potable and Raw Water - Projected

| Use Type <i>(Add additional rows as needed)</i>                                                                                                                               | Additional Description<br><i>(as needed)</i> | Projected Water Use<br><i>Report To the Extent that Records are Available</i> |       |       |       |          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------|-------|-------|-------|----------|
| <b><u>Drop down list</u></b><br><i>May select each use multiple times</i><br><i>These are the only Use Types that will be recognized by the WUEdata online submittal tool</i> |                                              | 2020                                                                          | 2025  | 2030  | 2035  | 2040-opt |
| Single Family                                                                                                                                                                 |                                              | 2,416                                                                         | 2,477 | 2,539 | 2,603 | 2,669    |
| Multi-Family                                                                                                                                                                  |                                              | 833                                                                           | 854   | 875   | 897   | 920      |
| Commercial                                                                                                                                                                    | including institutional                      | 302                                                                           | 309   | 317   | 325   | 333      |
| Landscape                                                                                                                                                                     |                                              | 121                                                                           | 124   | 128   | 131   | 134      |
| Losses                                                                                                                                                                        |                                              | 398                                                                           | 430   | 441   | 452   | 464      |
|                                                                                                                                                                               |                                              |                                                                               |       |       |       |          |
|                                                                                                                                                                               |                                              |                                                                               |       |       |       |          |
| <b>TOTAL</b>                                                                                                                                                                  |                                              | 4,070                                                                         | 4,194 | 4,300 | 4,408 | 4,520    |
| NOTES:                                                                                                                                                                        |                                              |                                                                               |       |       |       |          |

**Table 4-3 Retail: Total Water Demands**

|                                                                | 2015  | 2020  | 2025  | 2030  | 2035  | 2040<br>(opt) |
|----------------------------------------------------------------|-------|-------|-------|-------|-------|---------------|
| Potable and Raw Water <i>From</i><br><i>Tables 4-1 and 4-2</i> | 3,638 | 4,070 | 4,194 | 4,300 | 4,408 | 4,520         |
| Recycled Water Demand* <i>From</i><br><i>Table 6-4</i>         | 0     | 0     | 0     | 0     | 0     | 0             |
| <b>TOTAL WATER DEMAND</b>                                      | 3,638 | 4,070 | 4,194 | 4,300 | 4,408 | 4,520         |

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

NOTES:

| Table 4-4 Retail: 12 Month Water Loss Audit Reporting                                                                    |                       |
|--------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Reporting Period Start Date<br>(mm/yyyy)                                                                                 | Volume of Water Loss* |
|                                                                                                                          |                       |
| <i>* Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.</i> |                       |
| NOTES:                                                                                                                   |                       |

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

|                                                                                                                                                                                                                                                                            |               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Are Future Water Savings Included in Projections?<br>(Refer to Appendix K of UWMP Guidebook)<br><i>Drop down list (y/n)</i>                                                                                                                                                | Yes           |
| If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc... utilized in demand projections are found.                                                                                                  | See page 2-20 |
| Are Lower Income Residential Demands Included In Projections?<br><i>Drop down list (y/n)</i>                                                                                                                                                                               | Yes           |
| NOTES: The estimated consumption rate of 110 GPCD not only accounts for the District's SBx7-7 goals, but also accounts for changes in water use trends within the District due to the District's own policies, codes, ordinances and planning efforts related to land use. |               |

**Table 5-1 Baselines and Targets Summary***Retail Agency or Regional Alliance Only*

| Baseline Period | Start Year | End Year | Average Baseline GPCD* | 2015 Interim Target * | Confirmed 2020 Target* |
|-----------------|------------|----------|------------------------|-----------------------|------------------------|
| 10-15 year      | 1996       | 2005     | 161                    | 151                   | 142                    |
| 5 Year          | 2003       | 2007     | 159                    |                       |                        |

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

**Table 5-2: 2015 Compliance***Retail Agency or Regional Alliance Only*

| Actual<br>2015 GPCD* | 2015<br>Interim<br>Target<br>GPCD* | Optional Adjustments to 2015 GPCD                          |                         |                           |                       |                        | 2015 GPCD*<br><i>(Adjusted if<br/>applicable)</i> | Did Supplier<br>Achieve<br>Targeted<br>Reduction for<br>2015? Y/N |
|----------------------|------------------------------------|------------------------------------------------------------|-------------------------|---------------------------|-----------------------|------------------------|---------------------------------------------------|-------------------------------------------------------------------|
|                      |                                    | Enter "0" if no adjustment is made<br><i>Methodology 8</i> |                         |                           |                       |                        |                                                   |                                                                   |
|                      |                                    | Extraordinary<br>Events*                                   | Economic<br>Adjustment* | Weather<br>Normalization* | TOTAL<br>Adjustments* | Adjusted<br>2015 GPCD* |                                                   |                                                                   |
| 101                  | 151                                | 0                                                          | 0                       | 0                         | 0                     | 101                    | 101                                               | Yes                                                               |

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

NOTES:

### Table 6-1 Retail: Groundwater Volume Pumped

|                                                                                          |                                                                                        |         |         |         |         |       |
|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------|---------|---------|---------|-------|
| <input type="checkbox"/>                                                                 | Supplier does not pump groundwater.<br>The supplier will not complete the table below. |         |         |         |         |       |
| Groundwater Type<br><b>Drop Down List</b><br><i>May use each category multiple times</i> | Location or Basin Name                                                                 | 2011    | 2012    | 2013    | 2014    | 2015  |
| <i>Add additional rows as needed</i>                                                     |                                                                                        |         |         |         |         |       |
| Alluvial Basin                                                                           | Verdugo Basin                                                                          | 2991.39 | 3125.64 | 2753.81 | 2220.48 | 1902  |
|                                                                                          |                                                                                        |         |         |         |         |       |
|                                                                                          |                                                                                        |         |         |         |         |       |
| <b>TOTAL</b>                                                                             |                                                                                        | 2,991   | 3,126   | 2,754   | 2,220   | 1,902 |
| NOTES:                                                                                   |                                                                                        |         |         |         |         |       |

| Table 6-2 Retail: Wastewater Collected Within Service Area in 2015 |                                                                                                      |                                                            |                                                                    |                                              |                                                            |
|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------|
| <input type="checkbox"/>                                           | There is no wastewater collection system. The supplier will not complete the table below.            |                                                            |                                                                    |                                              |                                                            |
|                                                                    | Percentage of 2015 service area covered by wastewater collection system <i>(optional)</i>            |                                                            |                                                                    |                                              |                                                            |
|                                                                    | Percentage of 2015 service area population covered by wastewater collection system <i>(optional)</i> |                                                            |                                                                    |                                              |                                                            |
| Wastewater Collection                                              |                                                                                                      |                                                            | Recipient of Collected Wastewater                                  |                                              |                                                            |
| Name of Wastewater Collection Agency                               | Wastewater Volume Metered or Estimated?<br><i>Drop Down List</i>                                     | Volume of Wastewater Collected from UWMP Service Area 2015 | Name of Wastewater Treatment Agency Receiving Collected Wastewater | Treatment Plant Name                         | Is WWTP Located Within UWMP Area?<br><i>Drop Down List</i> |
| <i>Add additional rows as needed</i>                               |                                                                                                      |                                                            |                                                                    |                                              |                                                            |
| CVWD                                                               | Estimated                                                                                            | 1,765                                                      | Los Angeles County Sanitation District                             | Los Angeles-Glendale Water Reclamation Plant | No                                                         |
|                                                                    |                                                                                                      |                                                            |                                                                    |                                              |                                                            |
|                                                                    |                                                                                                      |                                                            |                                                                    |                                              |                                                            |
|                                                                    |                                                                                                      |                                                            |                                                                    |                                              |                                                            |
|                                                                    |                                                                                                      |                                                            |                                                                    |                                              |                                                            |
| <b>Total Wastewater Collected from Service Area in 2015:</b>       |                                                                                                      | 1,765                                                      |                                                                    |                                              |                                                            |
| NOTES:                                                             |                                                                                                      |                                                            |                                                                    |                                              |                                                            |

**Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015**

| <input checked="" type="checkbox"/>  | No wastewater is treated or disposed of within the UWMP service area.<br>The supplier will not complete the table below. |                                |                                           |                                             |                                                                      |                                          |                    |                               |                              |                                  |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------|---------------------------------------------|----------------------------------------------------------------------|------------------------------------------|--------------------|-------------------------------|------------------------------|----------------------------------|
| Wastewater Treatment Plant Name      | Discharge Location Name or Identifier                                                                                    | Discharge Location Description | Wastewater Discharge ID Number (optional) | Method of Disposal<br><i>Drop down list</i> | Does This Plant Treat Wastewater Generated Outside the Service Area? | Treatment Level<br><i>Drop down list</i> | 2015 volumes       |                               |                              |                                  |
|                                      |                                                                                                                          |                                |                                           |                                             |                                                                      |                                          | Wastewater Treated | Discharged Treated Wastewater | Recycled Within Service Area | Recycled Outside of Service Area |
| <i>Add additional rows as needed</i> |                                                                                                                          |                                |                                           |                                             |                                                                      |                                          |                    |                               |                              |                                  |
|                                      |                                                                                                                          |                                |                                           |                                             |                                                                      |                                          |                    |                               |                              |                                  |
|                                      |                                                                                                                          |                                |                                           |                                             |                                                                      |                                          |                    |                               |                              |                                  |
|                                      |                                                                                                                          |                                |                                           |                                             |                                                                      |                                          |                    |                               |                              |                                  |
|                                      |                                                                                                                          |                                |                                           |                                             |                                                                      |                                          |                    |                               |                              |                                  |
|                                      |                                                                                                                          |                                |                                           |                                             |                                                                      |                                          |                    |                               |                              |                                  |
| <b>Total</b>                         |                                                                                                                          |                                |                                           |                                             |                                                                      |                                          | 0                  | 0                             | 0                            | 0                                |
| NOTES:                               |                                                                                                                          |                                |                                           |                                             |                                                                      |                                          |                    |                               |                              |                                  |

**Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area**

| <input checked="checked" type="checkbox"/> Recycled water is not used and is not planned for use within the service area of the supplier.<br>The supplier will not complete the table below. |                                  |                                             |      |      |      |      |      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|---------------------------------------------|------|------|------|------|------|
| Name of Agency Producing (Treating) the Recycled Water:                                                                                                                                      |                                  |                                             |      |      |      |      |      |
| Name of Agency Operating the Recycled Water Distribution System:                                                                                                                             |                                  |                                             |      |      |      |      |      |
| Supplemental Water Added in 2015                                                                                                                                                             |                                  |                                             |      |      |      |      |      |
| Source of 2015 Supplemental Water                                                                                                                                                            |                                  |                                             |      |      |      |      |      |
| Beneficial Use Type                                                                                                                                                                          | General Description of 2015 Uses | Level of Treatment<br><i>Drop down list</i> | 2015 | 2020 | 2025 | 2030 | 2035 |
| Agricultural irrigation                                                                                                                                                                      |                                  |                                             |      |      |      |      |      |
| Landscape irrigation (excludes golf courses)                                                                                                                                                 |                                  |                                             |      |      |      |      |      |
| Golf course irrigation                                                                                                                                                                       |                                  |                                             |      |      |      |      |      |
| Commercial use                                                                                                                                                                               |                                  |                                             |      |      |      |      |      |
| Industrial use                                                                                                                                                                               |                                  |                                             |      |      |      |      |      |
| Geothermal and other energy production                                                                                                                                                       |                                  |                                             |      |      |      |      |      |
| Seawater intrusion barrier                                                                                                                                                                   |                                  |                                             |      |      |      |      |      |
| Recreational impoundment                                                                                                                                                                     |                                  |                                             |      |      |      |      |      |
| Wetlands or wildlife habitat                                                                                                                                                                 |                                  |                                             |      |      |      |      |      |
| Groundwater recharge (IPR)*                                                                                                                                                                  |                                  |                                             |      |      |      |      |      |
| Surface water augmentation (IPR)*                                                                                                                                                            |                                  |                                             |      |      |      |      |      |
| Direct potable reuse                                                                                                                                                                         |                                  |                                             |      |      |      |      |      |
| Other ( <i>Provide General Description</i> )                                                                                                                                                 |                                  |                                             |      |      |      |      |      |
| <b>Total:</b>                                                                                                                                                                                |                                  |                                             | 0    | 0    | 0    | 0    | 0    |
| *IPR - Indirect Potable Reuse                                                                                                                                                                |                                  |                                             |      |      |      |      |      |
| NOTES:                                                                                                                                                                                       |                                  |                                             |      |      |      |      |      |

**Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual**

| <input checked="" type="checkbox"/>          |                    | Recycled water was not used in 2010 nor projected for use in 2015.<br>The supplier will not complete the table below. |                 |
|----------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------|-----------------|
| Use Type                                     |                    | 2010 Projection for 2015                                                                                              | 2015 Actual Use |
| Agricultural irrigation                      |                    |                                                                                                                       |                 |
| Landscape irrigation (excludes golf courses) |                    |                                                                                                                       |                 |
| Golf course irrigation                       |                    |                                                                                                                       |                 |
| Commercial use                               |                    |                                                                                                                       |                 |
| Industrial use                               |                    |                                                                                                                       |                 |
| Geothermal and other energy production       |                    |                                                                                                                       |                 |
| Seawater intrusion barrier                   |                    |                                                                                                                       |                 |
| Recreational impoundment                     |                    |                                                                                                                       |                 |
| Wetlands or wildlife habitat                 |                    |                                                                                                                       |                 |
| Groundwater recharge (IPR)                   |                    |                                                                                                                       |                 |
| Surface water augmentation (IPR)             |                    |                                                                                                                       |                 |
| Direct potable reuse                         |                    |                                                                                                                       |                 |
| Other                                        |                    |                                                                                                                       |                 |
|                                              | <i>Type of Use</i> |                                                                                                                       |                 |
| <b>Total</b>                                 |                    | 0                                                                                                                     | 0               |
| NOTES:                                       |                    |                                                                                                                       |                 |

| Table 6-6 Retail: Methods to Expand Future Recycled Water Use |                                                                                                                                                       |                             |                                         |
|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------------------|
| <input checked="" type="checkbox"/>                           | Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation. |                             |                                         |
|                                                               | Provide page location of narrative in UWMP                                                                                                            |                             |                                         |
| Name of Action                                                | Description                                                                                                                                           | Planned Implementation Year | Expected Increase in Recycled Water Use |
| Add additional rows as needed                                 |                                                                                                                                                       |                             |                                         |
|                                                               |                                                                                                                                                       |                             |                                         |
|                                                               |                                                                                                                                                       |                             |                                         |
|                                                               |                                                                                                                                                       |                             |                                         |
| Total                                                         |                                                                                                                                                       |                             | 0                                       |
| NOTES:                                                        |                                                                                                                                                       |                             |                                         |

| Table 6-7 Retail: Expected Future Water Supply Projects or Programs |                                                                                                                                                                     |                            |                           |                             |                                                       |                                                                           |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------|-----------------------------|-------------------------------------------------------|---------------------------------------------------------------------------|
| <input type="checkbox"/>                                            | No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below. |                            |                           |                             |                                                       |                                                                           |
| <input type="checkbox"/>                                            | Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.                  |                            |                           |                             |                                                       |                                                                           |
| page 7-3                                                            | Provide page location of narrative in the UWMP                                                                                                                      |                            |                           |                             |                                                       |                                                                           |
| Name of Future Projects or Programs                                 | Joint Project with other agencies?                                                                                                                                  |                            | Description (if needed)   | Planned Implementation Year | Planned for Use in Year Type<br><i>Drop Down List</i> | Expected Increase in Water Supply to Agency<br><i>This may be a range</i> |
|                                                                     | <i>Drop Down List (y/n)</i>                                                                                                                                         | <i>If Yes, Agency Name</i> |                           |                             |                                                       |                                                                           |
| <i>Add additional rows as needed</i>                                |                                                                                                                                                                     |                            |                           |                             |                                                       |                                                                           |
| LADWP Interconnection                                               | Yes                                                                                                                                                                 | LADWP                      | Emergency interconnection | 2016                        |                                                       |                                                                           |
|                                                                     |                                                                                                                                                                     |                            |                           |                             |                                                       |                                                                           |
|                                                                     |                                                                                                                                                                     |                            |                           |                             |                                                       |                                                                           |
| NOTES:                                                              |                                                                                                                                                                     |                            |                           |                             |                                                       |                                                                           |

| Table 6-8 Retail: Water Supplies — Actual                                                                                                                                                     |                                   |               |                                            |                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|---------------|--------------------------------------------|-----------------------------------------|
| Water Supply                                                                                                                                                                                  | Additional Detail on Water Supply | 2015          |                                            |                                         |
| <div>Drop down list</div> <div>May use each category multiple times.</div> <div>These are the only water supply categories that will be recognized by the WUEdata online submittal tool</div> |                                   | Actual Volume | Water Quality<br><div>Drop Down List</div> | Total Right or Safe Yield<br>(optional) |
| Add additional rows as needed                                                                                                                                                                 |                                   |               |                                            |                                         |
| Purchased or Imported Water                                                                                                                                                                   | from FMWD                         | 1,745         | Drinking Water                             | 2,154                                   |
| Groundwater                                                                                                                                                                                   | CVWD Wells                        | 1,902         | Drinking Water                             | 3,294                                   |
| Groundwater                                                                                                                                                                                   | Well No. 16                       | 0             | Drinking Water                             | 600                                     |
|                                                                                                                                                                                               |                                   |               |                                            |                                         |
| Total                                                                                                                                                                                         |                                   | 3,647         |                                            | 6,048                                   |
| NOTES:                                                                                                                                                                                        |                                   |               |                                            |                                         |

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

| Water Supply                                                                                                                                                                   | Additional Detail on Water Supply | Projected Water Supply<br><i>Report To the Extent Practicable</i> |                                      |                             |                                      |                             |                                      |                             |                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------------------------------------|--------------------------------------|-----------------------------|--------------------------------------|-----------------------------|--------------------------------------|-----------------------------|--------------------------------------|
|                                                                                                                                                                                |                                   | 2020                                                              |                                      | 2025                        |                                      | 2030                        |                                      | 2035                        |                                      |
| <i><b>Drop down list</b><br/>May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool</i> |                                   | Reasonably Available Volume                                       | Total Right or Safe Yield (optional) | Reasonably Available Volume | Total Right or Safe Yield (optional) | Reasonably Available Volume | Total Right or Safe Yield (optional) | Reasonably Available Volume | Total Right or Safe Yield (optional) |
| <i>Add additional rows as needed</i>                                                                                                                                           |                                   |                                                                   |                                      |                             |                                      |                             |                                      |                             |                                      |
| Purchased or Imported Water                                                                                                                                                    | FMWD                              | 885                                                               | 2,154                                | 1,271                       | 2,154                                | 1,428                       | 2,154                                | 1,576                       | 2,154                                |
| Groundwater                                                                                                                                                                    | All Wells                         | 3,185                                                             | 3,894                                | 3,844                       | 3,894                                | 3,854                       | 3,894                                | 3,854                       | 3,894                                |
|                                                                                                                                                                                |                                   |                                                                   |                                      |                             |                                      |                             |                                      |                             |                                      |
| <b>Total</b>                                                                                                                                                                   |                                   | 4,070                                                             | 6,048                                | 5,115                       | 6,048                                | 5,282                       | 6,048                                | 5,430                       | 6,048                                |

NOTES:

**Table 7-1 Retail: Basis of Water Year Data**

| Year Type                                                                                                                                                                                                                                                                                                                                                                                                                    | Base Year<br><i>If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000</i> | Available Supplies if Year Type Repeats |                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   | <input type="checkbox"/>                | Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP.<br>Location _____ |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   | <input type="checkbox"/>                | Quantification of available supplies is provided in this table as either volume only, percent only, or both.                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   | Volume Available                        | % of Average Supply                                                                                                             |
| Average Year                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                   |                                         | 100%                                                                                                                            |
| Single-Dry Year                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   |                                         |                                                                                                                                 |
| Multiple-Dry Years 1st Year                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                   |                                         |                                                                                                                                 |
| Multiple-Dry Years 2nd Year                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                   |                                         |                                                                                                                                 |
| Multiple-Dry Years 3rd Year                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                   |                                         |                                                                                                                                 |
| Multiple-Dry Years 4th Year <i>Optional</i>                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                   |                                         |                                                                                                                                 |
| Multiple-Dry Years 5th Year <i>Optional</i>                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                   |                                         |                                                                                                                                 |
| Multiple-Dry Years 6th Year <i>Optional</i>                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                   |                                         |                                                                                                                                 |
| <p>Agency may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If an agency uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.</p> |                                                                                                                                                                   |                                         |                                                                                                                                 |
| <p>NOTES: Provided in Section 3.7.4</p>                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                   |                                         |                                                                                                                                 |

| Table 7-2 Retail: Normal Year Supply and Demand Comparison |       |       |       |       |               |
|------------------------------------------------------------|-------|-------|-------|-------|---------------|
|                                                            | 2020  | 2025  | 2030  | 2035  | 2040<br>(Opt) |
| Supply totals<br>(autofill from Table 6-9)                 | 4,070 | 5,115 | 5,282 | 5,430 | 5,600         |
| Demand totals<br>(autofill from Table 4-3)                 | 4,070 | 4,194 | 4,300 | 4,408 | 4,520         |
| Difference                                                 | 0     | 921   | 982   | 1,022 | 1,080         |
| NOTES:                                                     |       |       |       |       |               |

| Table 7-3 Retail: Single Dry Year Supply and Demand Comparison |       |       |       |       |               |
|----------------------------------------------------------------|-------|-------|-------|-------|---------------|
|                                                                | 2020  | 2025  | 2030  | 2035  | 2040<br>(Opt) |
| Supply totals                                                  | 5,237 | 5,237 | 5,237 | 5,237 | 5,237         |
| Demand totals                                                  | 3,834 | 3,931 | 4,030 | 4,132 | 4,236         |
| Difference                                                     | 1,403 | 1,306 | 1,207 | 1,105 | 1,001         |
| NOTES:                                                         |       |       |       |       |               |

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

|                                  |               | 2020  | 2025  | 2030  | 2035  | 2040<br>(Opt) |
|----------------------------------|---------------|-------|-------|-------|-------|---------------|
| First year                       | Supply totals | 4,624 | 5,114 | 5,614 | 6,008 | 6,008         |
|                                  | Demand totals | 4,214 | 4,320 | 4,429 | 4,541 | 4,656         |
|                                  | Difference    | 410   | 794   | 1,185 | 1,467 | 1,352         |
| Second year                      | Supply totals | 4,624 | 5,114 | 5,614 | 6,008 | 6,008         |
|                                  | Demand totals | 4,087 | 4,190 | 4,296 | 4,405 | 4,516         |
|                                  | Difference    | 537   | 924   | 1,318 | 1,603 | 1,492         |
| Third year                       | Supply totals | 4,624 | 5,114 | 5,614 | 6,008 | 6,008         |
|                                  | Demand totals | 3,273 | 3,355 | 3,440 | 3,527 | 3,616         |
|                                  | Difference    | 1,351 | 1,759 | 2,174 | 2,481 | 2,392         |
| Fourth year<br><i>(optional)</i> | Supply totals |       |       |       |       |               |
|                                  | Demand totals |       |       |       |       |               |
|                                  | Difference    | 0     | 0     | 0     | 0     | 0             |
| Fifth year<br><i>(optional)</i>  | Supply totals |       |       |       |       |               |
|                                  | Demand totals |       |       |       |       |               |
|                                  | Difference    | 0     | 0     | 0     | 0     | 0             |
| Sixth year<br><i>(optional)</i>  | Supply totals |       |       |       |       |               |
|                                  | Demand totals |       |       |       |       |               |
|                                  | Difference    | 0     | 0     | 0     | 0     | 0             |

NOTES:

| Table 8-1 Retail<br>Stages of Water Shortage Contingency Plan                                       |                                                                              |                                                          |
|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------|
| Stage                                                                                               | Complete Both                                                                |                                                          |
|                                                                                                     | Percent Supply Reduction <sup>1</sup><br><i>Numerical value as a percent</i> | Water Supply Condition<br><i>(Narrative description)</i> |
| <i>Add additional rows as needed</i>                                                                |                                                                              |                                                          |
| Phase 1                                                                                             | 0%                                                                           | Normal                                                   |
| Phase 2                                                                                             | 15%                                                                          | Increased Voluntary                                      |
| Phase 3                                                                                             | 30%                                                                          | Extraordinary                                            |
| Phase 4                                                                                             | 40%                                                                          | Rationing Water                                          |
| Phase 5                                                                                             | 50%                                                                          | Critical                                                 |
| <sup>1</sup> One stage in the Water Shortage Contingency Plan must address a water shortage of 50%. |                                                                              |                                                          |
| NOTES:                                                                                              |                                                                              |                                                          |

**Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses**

| Stage                                | Restrictions and Prohibitions on End Users<br><i>Drop down list</i><br><i>These are the only categories that will be accepted by the WUEdata online submittal tool</i> | Additional Explanation or Reference<br>(optional) | Penalty, Charge, or Other Enforcement?<br><i>Drop Down List</i> |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------------------|
| <i>Add additional rows as needed</i> |                                                                                                                                                                        |                                                   |                                                                 |
| Phase 1                              | Other - Prohibit use of potable water for washing hard surfaces                                                                                                        | Section 5.5.1                                     | Yes                                                             |
| Phase 1                              | Landscape - Restrict or prohibit runoff from landscape irrigation                                                                                                      | Section 5.5.1                                     | Yes                                                             |
| Phases 1 & 4                         | Water Features - Restrict water use for decorative water features, such as fountains                                                                                   | Section 5.5.1                                     | Yes                                                             |
| Phases 1, 4, 5                       | Other - Customers must repair leaks, breaks, and malfunctions in a timely manner                                                                                       | Section 5.5.1                                     | Yes                                                             |
| Phase 1                              | Landscape - Limit landscape irrigation to specific times                                                                                                               | Section 5.5.1                                     | Yes                                                             |
| Phase 1                              | Other - Require automatic shut of hoses                                                                                                                                | Section 5.5.1                                     | Yes                                                             |
| Phase 1                              | Pools and Spas - Require covers for pools and spas                                                                                                                     | Section 5.5.1                                     | Yes                                                             |
| Phase 1                              | CII - Restaurants may only serve water upon request                                                                                                                    | Section 5.5.1                                     | Yes                                                             |
| Phase 1                              | CII - Other CII restriction or prohibition                                                                                                                             | Section 5.5.1                                     | Yes                                                             |
| Phases 2-4                           | Landscape - Limit landscape irrigation to specific days                                                                                                                | Section 5.5.1                                     | Yes                                                             |
| Phases 4                             | Other water feature or swimming pool restriction                                                                                                                       | Section 5.5.1                                     | Yes                                                             |
| All Phases                           | Other                                                                                                                                                                  | Section 5.5.1                                     | Yes                                                             |
| NOTES:                               |                                                                                                                                                                        |                                                   |                                                                 |

| Table 8-3 Retail Only:<br>Stages of Water Shortage Contingency Plan - Consumption Reduction Methods |                                                                                                                                                                                    |                                                          |
|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| Stage                                                                                               | Consumption Reduction Methods by<br>Water Supplier<br><i>Drop down list</i><br><i>These are the only categories that will be accepted<br/>by the WUEdata online submittal tool</i> | Additional Explanation or Reference<br><i>(optional)</i> |
| Add additional rows as needed                                                                       |                                                                                                                                                                                    |                                                          |
| Phase 1                                                                                             | Offer Water Use Surveys                                                                                                                                                            | Section 4.2.3                                            |
| Phase 1                                                                                             | Provide Rebates for Landscape Irrigation Efficiency                                                                                                                                | Section 4.2.3 and 4.2.5                                  |
| Phase 1                                                                                             | Provide Rebates for Turf Replacement                                                                                                                                               | Section 4.2.5                                            |
| Phase 1                                                                                             | Other                                                                                                                                                                              | Section 4                                                |
|                                                                                                     |                                                                                                                                                                                    |                                                          |
|                                                                                                     |                                                                                                                                                                                    |                                                          |
|                                                                                                     |                                                                                                                                                                                    |                                                          |
|                                                                                                     |                                                                                                                                                                                    |                                                          |
|                                                                                                     |                                                                                                                                                                                    |                                                          |
|                                                                                                     |                                                                                                                                                                                    |                                                          |
|                                                                                                     |                                                                                                                                                                                    |                                                          |
|                                                                                                     |                                                                                                                                                                                    |                                                          |
|                                                                                                     |                                                                                                                                                                                    |                                                          |
| NOTES:                                                                                              |                                                                                                                                                                                    |                                                          |

| Table 8-4 Retail: Minimum Supply Next Three Years |       |       |       |
|---------------------------------------------------|-------|-------|-------|
|                                                   | 2016  | 2017  | 2018  |
| Available Water Supply                            | 4,504 | 4,574 | 4,574 |
| NOTES: 2016 is the normal year (Section 5.3).     |       |       |       |

| Table 10-1 Retail: Notification to Cities and Counties |                                     |                                     |
|--------------------------------------------------------|-------------------------------------|-------------------------------------|
| City Name                                              | 60 Day Notice                       | Notice of Public Hearing            |
| Add additional rows as needed                          |                                     |                                     |
| La Canada Flintridge                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Glendale                                               | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                        | <input type="checkbox"/>            | <input type="checkbox"/>            |
| County Name<br><i>Drop Down List</i>                   | 60 Day Notice                       | Notice of Public Hearing            |
| Add additional rows as needed                          |                                     |                                     |
| Los Angeles County                                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                        | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                                                        |                                     |                                     |

## SB X7-7 Verification Form Version FINAL.1

Table 4-C.4 has been modified from the FINAL version.

| WUEdata Entry Exceptions                                                                                                                                                                                             |            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| The data from the tables below will not be entered into WUEdata tables (the tabs for these tables' worksheets are colored <b>purple</b> ). These tables will be submitted as separate uploads, in Excel, to WUEdata. |            |
| <b>Process Water Deduction</b>                                                                                                                                                                                       |            |
| SB X7-7 tables 4-C, 4-C.1, 4-C.2, 4-C.3, 4-C.4 and 4-D                                                                                                                                                               | A          |
| supplier that will use the process water deduction will complete the appropriate tables in Excel, submit them as a separate upload to the WUE data tool, and include them in its UWMP.                               |            |
| <b>Target Method 2</b>                                                                                                                                                                                               |            |
| SB X7-7 tables 7-B, 7-C, and 7-D                                                                                                                                                                                     |            |
| A supplier that selects Target Method 2 will contact DWR (gwen.huff@water.ca.gov) for SB X7-7 tables 7-B, 7-C, and 7-D.                                                                                              |            |
| <b>Target Method 4</b>                                                                                                                                                                                               |            |
| These tables are only available online at                                                                                                                                                                            |            |
| <a href="http://www.dwr.water.ca.gov/wateruseefficiency/sb7/committees/urban/u4/ptm4.cfm">http://www.dwr.water.ca.gov/wateruseefficiency/sb7/committees/urban/u4/ptm4.cfm</a>                                        | A supplier |
| that selects Target Method 4 will save the tables from the website listed above, complete the tables, submit as a separate upload to WUE data, and include them with its UWMP.                                       |            |

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

*(select one from the drop down list)*

Acre Feet

*\*The unit of measure must be consistent with Table 2-3*

NOTES:

**SB X7-7 Table-1: Baseline Period Ranges**

| Baseline                          | Parameter                                            | Value | Units     |
|-----------------------------------|------------------------------------------------------|-------|-----------|
| 10- to 15-year<br>baseline period | 2008 total water deliveries                          |       | Acre Feet |
|                                   | 2008 total volume of delivered recycled water        | -     | Acre Feet |
|                                   | 2008 recycled water as a percent of total deliveries |       | Percent   |
|                                   | Number of years in baseline period <sup>1, 2</sup>   | 10    | Years     |
|                                   | Year beginning baseline period range                 | 1996  |           |
|                                   | Year ending baseline period range <sup>3</sup>       | 2005  |           |
| 5-year<br>baseline period         | Number of years in baseline period                   | 5     | Years     |
|                                   | Year beginning baseline period range                 | 2003  |           |
|                                   | Year ending baseline period range <sup>4</sup>       | 2007  |           |

<sup>1</sup> If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period. <sup>2</sup> The Water Code requires that the baseline period is between 10 and 15 years. However, DWR recognizes that some water suppliers may not have the minimum 10 years of baseline data.

<sup>3</sup> The ending year must be between December 31, 2004 and December 31, 2010.

<sup>4</sup> The ending year must be between December 31, 2007 and December 31, 2010.

NOTES:

**SB X7-7 Table 2: Method for Population Estimates**

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

☐

**1. Department of Finance (DOF)**  
DOF Table E-8 (1990 - 2000) and (2000-2010) and  
DOF Table E-5 (2011 - 2015) when available

☐

**2. Persons-per-Connection Method**

☒

**3. DWR Population Tool**

☐

**4. Other**  
DWR recommends pre-review

NOTES:

| SB X7-7 Table 3: Service Area Population |      |            |
|------------------------------------------|------|------------|
| Year                                     |      | Population |
| 10 to 15 Year Baseline Population        |      |            |
| Year 1                                   | 1996 | 30,390     |
| Year 2                                   | 1997 | 30,475     |
| Year 3                                   | 1998 | 30,560     |
| Year 4                                   | 1999 | 30,645     |
| Year 5                                   | 2000 | 30,731     |
| Year 6                                   | 2001 | 30,817     |
| Year 7                                   | 2002 | 30,903     |
| Year 8                                   | 2003 | 30,989     |
| Year 9                                   | 2004 | 31,075     |
| Year 10                                  | 2005 | 31,162     |
| Year 11                                  |      |            |
| Year 12                                  |      |            |
| Year 13                                  |      |            |
| Year 14                                  |      |            |
| Year 15                                  |      |            |
| 5 Year Baseline Population               |      |            |
| Year 1                                   | 2003 | 30,989     |
| Year 2                                   | 2004 | 31,075     |
| Year 3                                   | 2005 | 31,162     |
| Year 4                                   | 2006 | 31,249     |
| Year 5                                   | 2007 | 31,336     |
| 2015 Compliance Year Population          |      |            |
| 2015                                     |      | 32,385     |
| NOTES:                                   |      |            |

| SB X7-7 Table 4: Annual Gross Water Use *                                                             |      |                                                                                                                                     |                   |                                                  |                                                                                                                             |                                                  |                                                                                                             |                                 |
|-------------------------------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------|---------------------------------|
| Baseline Year<br><i>Fm SB X7-7 Table 3</i>                                                            |      | Volume Into<br>Distribution<br>System<br><i>This column will<br/>remain blank<br/>until SB X7-7<br/>Table 4-A is<br/>completed.</i> | Deductions        |                                                  |                                                                                                                             |                                                  |                                                                                                             | Annual<br>Gross<br>Water<br>Use |
|                                                                                                       |      |                                                                                                                                     | Exported<br>Water | Change in<br>Dist.<br>System<br>Storage<br>(+/-) | Indirect<br>Recycled<br>Water<br><i>This column will<br/>remain blank<br/>until SB X7-7<br/>Table 4-B is<br/>completed.</i> | Water<br>Delivered<br>for<br>Agricultural<br>Use | Process Water<br><i>This column will<br/>remain blank<br/>until SB X7-7<br/>Table 4-D is<br/>completed.</i> |                                 |
| 10 to 15 Year Baseline - Gross Water Use                                                              |      |                                                                                                                                     |                   |                                                  |                                                                                                                             |                                                  |                                                                                                             |                                 |
| Year 1                                                                                                | 1996 | 5,277                                                                                                                               |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | 5,277                           |
| Year 2                                                                                                | 1997 | 5,497                                                                                                                               |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | 5,497                           |
| Year 3                                                                                                | 1998 | 5,076                                                                                                                               |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | 5,076                           |
| Year 4                                                                                                | 1999 | 5,608                                                                                                                               |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | 5,608                           |
| Year 5                                                                                                | 2000 | 5,717                                                                                                                               |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | 5,717                           |
| Year 6                                                                                                | 2001 | 5,635                                                                                                                               |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | 5,635                           |
| Year 7                                                                                                | 2002 | 5,792                                                                                                                               |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | 5,792                           |
| Year 8                                                                                                | 2003 | 5,724                                                                                                                               |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | 5,724                           |
| Year 9                                                                                                | 2004 | 5,726                                                                                                                               |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | 5,726                           |
| Year 10                                                                                               | 2005 | 5,327                                                                                                                               |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | 5,327                           |
| Year 11                                                                                               | 0    | -                                                                                                                                   |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | -                               |
| Year 12                                                                                               | 0    | -                                                                                                                                   |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | -                               |
| Year 13                                                                                               | 0    | -                                                                                                                                   |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | -                               |
| Year 14                                                                                               | 0    | -                                                                                                                                   |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | -                               |
| Year 15                                                                                               | 0    | -                                                                                                                                   |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | -                               |
| 10 - 15 year baseline average gross water use                                                         |      |                                                                                                                                     |                   |                                                  |                                                                                                                             |                                                  |                                                                                                             | 5,538                           |
| 5 Year Baseline - Gross Water Use                                                                     |      |                                                                                                                                     |                   |                                                  |                                                                                                                             |                                                  |                                                                                                             |                                 |
| Year 1                                                                                                | 2003 | 5,724                                                                                                                               |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | 5,724                           |
| Year 2                                                                                                | 2004 | 5,726                                                                                                                               |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | 5,726                           |
| Year 3                                                                                                | 2005 | 5,327                                                                                                                               |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | 5,327                           |
| Year 4                                                                                                | 2006 | 5,463                                                                                                                               |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | 5,463                           |
| Year 5                                                                                                | 2007 | 5,525                                                                                                                               |                   |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | 5,525                           |
| 5 year baseline average gross water use                                                               |      |                                                                                                                                     |                   |                                                  |                                                                                                                             |                                                  |                                                                                                             | 5,553                           |
| 2015 Compliance Year - Gross Water Use                                                                |      |                                                                                                                                     |                   |                                                  |                                                                                                                             |                                                  |                                                                                                             |                                 |
| 2015                                                                                                  |      | 3,647                                                                                                                               | -                 |                                                  | -                                                                                                                           |                                                  | -                                                                                                           | 3,647                           |
| * NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3 |      |                                                                                                                                     |                   |                                                  |                                                                                                                             |                                                  |                                                                                                             |                                 |
| NOTES:                                                                                                |      |                                                                                                                                     |                   |                                                  |                                                                                                                             |                                                  |                                                                                                             |                                 |

\* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3

NOTES:

# **SB X7-7 Table 4-A: Volume Entering the Distribution System(s)**

Complete one table for each source.

|                                                                                                   |                                            |                                                         |                                                      |       |
|---------------------------------------------------------------------------------------------------|--------------------------------------------|---------------------------------------------------------|------------------------------------------------------|-------|
| <b>Name of Source</b>                                                                             |                                            | Groundwater + Imported                                  |                                                      |       |
| <b>This water source is:</b>                                                                      |                                            |                                                         |                                                      |       |
| <input checked="" type="checkbox"/>                                                               | The supplier's own water source            |                                                         |                                                      |       |
| <input checked="" type="checkbox"/>                                                               | A purchased or imported source             |                                                         |                                                      |       |
| <b>Baseline Year</b><br><i>Fm SB X7-7 Table 3</i>                                                 | <b>Volume Entering Distribution System</b> | <b>Meter Error Adjustment*</b><br><i>Optional (+/-)</i> | <b>Corrected Volume Entering Distribution System</b> |       |
| <b>10 to 15 Year Baseline - Water into Distribution System</b>                                    |                                            |                                                         |                                                      |       |
| Year 1                                                                                            | 1996                                       | 5,277                                                   |                                                      | 5,277 |
| Year 2                                                                                            | 1997                                       | 5,497                                                   |                                                      | 5,497 |
| Year 3                                                                                            | 1998                                       | 5,076                                                   |                                                      | 5,076 |
| Year 4                                                                                            | 1999                                       | 5,608                                                   |                                                      | 5,608 |
| Year 5                                                                                            | 2000                                       | 5,717                                                   |                                                      | 5,717 |
| Year 6                                                                                            | 2001                                       | 5,635                                                   |                                                      | 5,635 |
| Year 7                                                                                            | 2002                                       | 5,792                                                   |                                                      | 5,792 |
| Year 8                                                                                            | 2003                                       | 5,724                                                   |                                                      | 5,724 |
| Year 9                                                                                            | 2004                                       | 5,726                                                   |                                                      | 5,726 |
| Year 10                                                                                           | 2005                                       | 5,327                                                   |                                                      | 5,327 |
| Year 11                                                                                           | 0                                          |                                                         |                                                      | -     |
| Year 12                                                                                           | 0                                          |                                                         |                                                      | -     |
| Year 13                                                                                           | 0                                          |                                                         |                                                      | -     |
| Year 14                                                                                           | 0                                          |                                                         |                                                      | -     |
| Year 15                                                                                           | 0                                          |                                                         |                                                      | -     |
| <b>5 Year Baseline - Water into Distribution System</b>                                           |                                            |                                                         |                                                      |       |
| Year 1                                                                                            | 2003                                       | 5,724                                                   |                                                      | 5,724 |
| Year 2                                                                                            | 2004                                       | 5,726                                                   |                                                      | 5,726 |
| Year 3                                                                                            | 2005                                       | 5,327                                                   |                                                      | 5,327 |
| Year 4                                                                                            | 2006                                       | 5,463                                                   |                                                      | 5,463 |
| Year 5                                                                                            | 2007                                       | 5,525                                                   |                                                      | 5,525 |
| <b>2015 Compliance Year - Water into Distribution System</b>                                      |                                            |                                                         |                                                      |       |
| <b>2015</b>                                                                                       |                                            | 3,647                                                   |                                                      | 3,647 |
| <i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i> |                                            |                                                         |                                                      |       |
| NOTES:                                                                                            |                                            |                                                         |                                                      |       |

## SB X7-7 Table 4-C.1: Process Water Deduction Eligibility

### Criteria 1

Industrial water use is equal to or greater than 12% of gross water use

| Baseline Year<br><i>Fm SB X7-7 Table 3</i>                   |      | Gross Water Use Without Process Water Deduction | Industrial Water Use | Percent Industrial Water | Eligible for Exclusion Y/N |
|--------------------------------------------------------------|------|-------------------------------------------------|----------------------|--------------------------|----------------------------|
| 10 to 15 Year Baseline - Process Water Deduction Eligibility |      |                                                 |                      |                          |                            |
| Year 1                                                       | 1996 | 5,277                                           |                      | 0%                       | NO                         |
| Year 2                                                       | 1997 | 5,497                                           |                      | 0%                       | NO                         |
| Year 3                                                       | 1998 | 5,076                                           |                      | 0%                       | NO                         |
| Year 4                                                       | 1999 | 5,608                                           |                      | 0%                       | NO                         |
| Year 5                                                       | 2000 | 5,717                                           |                      | 0%                       | NO                         |
| Year 6                                                       | 2001 | 5,635                                           |                      | 0%                       | NO                         |
| Year 7                                                       | 2002 | 5,792                                           |                      | 0%                       | NO                         |
| Year 8                                                       | 2003 | 5,724                                           |                      | 0%                       | NO                         |
| Year 9                                                       | 2004 | 5,726                                           |                      | 0%                       | NO                         |
| Year 10                                                      | 2005 | 5,327                                           |                      | 0%                       | NO                         |
| Year 11                                                      | 0    | -                                               |                      |                          | NO                         |
| Year 12                                                      | 0    | -                                               |                      |                          | NO                         |
| Year 13                                                      | 0    | -                                               |                      |                          | NO                         |
| Year 14                                                      | 0    | -                                               |                      |                          | NO                         |
| Year 15                                                      | 0    | -                                               |                      |                          | NO                         |
| 5 Year Baseline - Process Water Deduction Eligibility        |      |                                                 |                      |                          |                            |
| Year 1                                                       | 2003 | 5,724                                           |                      | 0%                       | NO                         |
| Year 2                                                       | 2004 | 5,726                                           |                      | 0%                       | NO                         |
| Year 3                                                       | 2005 | 5,327                                           |                      | 0%                       | NO                         |
| Year 4                                                       | 2006 | 5,463                                           |                      | 0%                       | NO                         |
| Year 5                                                       | 2007 | 5,525                                           |                      | 0%                       | NO                         |
| 2015 Compliance Year - Process Water Deduction Eligibility   |      |                                                 |                      |                          |                            |
| 2015                                                         |      | 3,647                                           |                      | 0%                       | NO                         |
| NOTES:                                                       |      |                                                 |                      |                          |                            |

## SB X7-7 Table 4-C.2: Process Water Deduction Eligibility

### Criteria 2

Industrial water use is equal to or greater than 15 GPCD

| Baseline Year<br><i>Fm SB X7-7 Table 3</i>                   | Industrial<br>Water Use | Population | Industrial<br>GPCD | Eligible<br>for<br>Exclusion<br>Y/N |
|--------------------------------------------------------------|-------------------------|------------|--------------------|-------------------------------------|
| 10 to 15 Year Baseline - Process Water Deduction Eligibility |                         |            |                    |                                     |
| Year 1                                                       | 1996                    |            | 30,390             | - NO                                |
| Year 2                                                       | 1997                    |            | 30,475             | - NO                                |
| Year 3                                                       | 1998                    |            | 30,560             | - NO                                |
| Year 4                                                       | 1999                    |            | 30,645             | - NO                                |
| Year 5                                                       | 2000                    |            | 30,731             | - NO                                |
| Year 6                                                       | 2001                    |            | 30,817             | - NO                                |
| Year 7                                                       | 2002                    |            | 30,903             | - NO                                |
| Year 8                                                       | 2003                    |            | 30,989             | - NO                                |
| Year 9                                                       | 2004                    |            | 31,075             | - NO                                |
| Year 10                                                      | 2005                    |            | 31,162             | - NO                                |
| <i>Year 11</i>                                               | 0                       |            | -                  | NO                                  |
| <i>Year 12</i>                                               | 0                       |            | -                  | NO                                  |
| <i>Year 13</i>                                               | 0                       |            | -                  | NO                                  |
| <i>Year 14</i>                                               | 0                       |            | -                  | NO                                  |
| <i>Year 15</i>                                               | 0                       |            | -                  | NO                                  |
| 5 Year Baseline - Process Water Deduction Eligibility        |                         |            |                    |                                     |
| Year 1                                                       | 2003                    |            | 30,989             | - NO                                |
| Year 2                                                       | 2004                    |            | 31,075             | - NO                                |
| Year 3                                                       | 2005                    |            | 31,162             | - NO                                |
| Year 4                                                       | 2006                    |            | 31,249             | - NO                                |
| Year 5                                                       | 2007                    |            | 31,336             | - NO                                |
| 2015 Compliance Year - Process Water Deduction Eligibility   |                         |            |                    |                                     |
| <b>2015</b>                                                  |                         | 32,385     | -                  | NO                                  |
| NOTES:                                                       |                         |            |                    |                                     |

### SB X7-7 Table 4-C.3: Process Water Deduction Eligibility

#### Criteria 3

Non-industrial use is equal to or less than 120 GPCD

| Baseline Year<br><i>Fm SB X7-7 Table 3</i> | Gross Water Use Without Process Water Deduction<br><i>Fm SB X7-7 Table 4</i> | Industrial Water Use | Non-industrial Water Use | Population<br><i>Fm SB X7-7 Table 3</i> | Non-Industrial GPCD | Eligible for Exclusion<br>Y/N |
|--------------------------------------------|------------------------------------------------------------------------------|----------------------|--------------------------|-----------------------------------------|---------------------|-------------------------------|
|--------------------------------------------|------------------------------------------------------------------------------|----------------------|--------------------------|-----------------------------------------|---------------------|-------------------------------|

#### 10 to 15 Year Baseline - Process Water Deduction Eligibility

|                |      |       |  |       |        |     |    |
|----------------|------|-------|--|-------|--------|-----|----|
| Year 1         | 1996 | 5,277 |  | 5,277 | 30,390 | 155 | NO |
| Year 2         | 1997 | 5,497 |  | 5,497 | 30,475 | 161 | NO |
| Year 3         | 1998 | 5,076 |  | 5,076 | 30,560 | 148 | NO |
| Year 4         | 1999 | 5,608 |  | 5,608 | 30,645 | 163 | NO |
| Year 5         | 2000 | 5,717 |  | 5,717 | 30,731 | 166 | NO |
| Year 6         | 2001 | 5,635 |  | 5,635 | 30,817 | 163 | NO |
| Year 7         | 2002 | 5,792 |  | 5,792 | 30,903 | 167 | NO |
| Year 8         | 2003 | 5,724 |  | 5,724 | 30,989 | 165 | NO |
| Year 9         | 2004 | 5,726 |  | 5,726 | 31,075 | 165 | NO |
| Year 10        | 2005 | 5,327 |  | 5,327 | 31,162 | 153 | NO |
| <i>Year 11</i> | 0    | -     |  | -     | -      |     | NO |
| <i>Year 12</i> | 0    | -     |  | -     | -      |     | NO |
| <i>Year 13</i> | 0    | -     |  | -     | -      |     | NO |
| <i>Year 14</i> | 0    | -     |  | -     | -      |     | NO |
| <i>Year 15</i> | 0    | -     |  | -     | -      |     | NO |

#### 5 Year Baseline - Process Water Deduction Eligibility

|        |      |       |  |       |        |     |    |
|--------|------|-------|--|-------|--------|-----|----|
| Year 1 | 2003 | 5,724 |  | 5,724 | 30,989 | 165 | NO |
| Year 2 | 2004 | 5,726 |  | 5,726 | 31,075 | 165 | NO |
| Year 3 | 2005 | 5,327 |  | 5,327 | 31,162 | 153 | NO |
| Year 4 | 2006 | 5,463 |  | 5,463 | 31,249 | 156 | NO |
| Year 5 | 2007 | 5,525 |  | 5,525 | 31,336 | 157 | NO |

#### 2015 Compliance Year - Process Water Deduction Eligibility

|             |       |  |       |        |     |     |
|-------------|-------|--|-------|--------|-----|-----|
| <b>2015</b> | 3,647 |  | 3,647 | 32,385 | 101 | YES |
|-------------|-------|--|-------|--------|-----|-----|

NOTES:

**SB X7-7 Table 4-C.4: Process Water Deduction Eligibility****Criteria 4**

Disadvantaged Community. A "Disadvantaged Community" (DAC) is a community with a median household income less than 80 percent of the statewide average.

**SELECT ONE**

"Disadvantaged Community" status was determined using one of the methods listed below:

**1. IRWM DAC Mapping tool**

[http://www.water.ca.gov/irwm/grants/resources\\_dac.cfm](http://www.water.ca.gov/irwm/grants/resources_dac.cfm)

If using the IRWM DAC Mapping Tool, include a screen shot from the tool showing that the service area is considered a DAC.

**2. 2010 Median Income**

California Median  
Household Income

Service Area  
Median Household  
Income

Percentage of  
Statewide  
Average

**Eligible for  
Exclusion?  
Y/N**

2015 Compliance Year - Process Water Deduction Eligibility

2010

\$60,883

0%

YES

NOTES:

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

| Baseline Year<br><i>Fm SB X7-7 Table 3</i> |      | Service Area<br>Population<br><i>Fm SB X7-7<br/>Table 3</i> | Annual Gross<br>Water Use<br><i>Fm SB X7-7<br/>Table 4</i> | Daily Per<br>Capita Water<br>Use (GPCD) |
|--------------------------------------------|------|-------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------|
| 10 to 15 Year Baseline GPCD                |      |                                                             |                                                            |                                         |
| Year 1                                     | 1996 | 30,390                                                      | 5,277                                                      | 155                                     |
| Year 2                                     | 1997 | 30,475                                                      | 5,497                                                      | 161                                     |
| Year 3                                     | 1998 | 30,560                                                      | 5,076                                                      | 148                                     |
| Year 4                                     | 1999 | 30,645                                                      | 5,608                                                      | 163                                     |
| Year 5                                     | 2000 | 30,731                                                      | 5,717                                                      | 166                                     |
| Year 6                                     | 2001 | 30,817                                                      | 5,635                                                      | 163                                     |
| Year 7                                     | 2002 | 30,903                                                      | 5,792                                                      | 167                                     |
| Year 8                                     | 2003 | 30,989                                                      | 5,724                                                      | 165                                     |
| Year 9                                     | 2004 | 31,075                                                      | 5,726                                                      | 165                                     |
| Year 10                                    | 2005 | 31,162                                                      | 5,327                                                      | 153                                     |
| Year 11                                    | 0    | -                                                           | -                                                          |                                         |
| Year 12                                    | 0    | -                                                           | -                                                          |                                         |
| Year 13                                    | 0    | -                                                           | -                                                          |                                         |
| Year 14                                    | 0    | -                                                           | -                                                          |                                         |
| Year 15                                    | 0    | -                                                           | -                                                          |                                         |
| 10-15 Year Average Baseline GPCD           |      |                                                             |                                                            | 161                                     |
| 5 Year Baseline GPCD                       |      |                                                             |                                                            |                                         |
| Baseline Year<br><i>Fm SB X7-7 Table 3</i> |      | Service Area<br>Population<br><i>Fm SB X7-7<br/>Table 3</i> | Gross Water Use<br><i>Fm SB X7-7<br/>Table 4</i>           | Daily Per<br>Capita Water<br>Use        |
| Year 1                                     | 2003 | 30,989                                                      | 5,724                                                      | 165                                     |
| Year 2                                     | 2004 | 31,075                                                      | 5,726                                                      | 165                                     |
| Year 3                                     | 2005 | 31,162                                                      | 5,327                                                      | 153                                     |
| Year 4                                     | 2006 | 31,249                                                      | 5,463                                                      | 156                                     |
| Year 5                                     | 2007 | 31,336                                                      | 5,525                                                      | 157                                     |
| 5 Year Average Baseline GPCD               |      |                                                             |                                                            | 159                                     |
| 2015 Compliance Year GPCD                  |      |                                                             |                                                            |                                         |
| 2015                                       |      | 32,385                                                      | 3,647                                                      | 101                                     |
| NOTES:                                     |      |                                                             |                                                            |                                         |

**SB X7-7 Table 6: Gallons per Capita per Day***Summary From Table SB X7-7 Table 5*

|                           |     |
|---------------------------|-----|
| 10-15 Year Baseline GPCD  | 161 |
| 5 Year Baseline GPCD      | 159 |
| 2015 Compliance Year GPCD | 101 |

NOTES:

**SB X7-7 Table 7: 2020 Target Method***Select Only One*

| Target Method                       |          | Supporting Documentation                                             |
|-------------------------------------|----------|----------------------------------------------------------------------|
| <input type="checkbox"/>            | Method 1 | SB X7-7 Table 7A                                                     |
| <input type="checkbox"/>            | Method 2 | SB X7-7 Tables 7B, 7C, and 7D<br><i>Contact DWR for these tables</i> |
| <input checked="" type="checkbox"/> | Method 3 | SB X7-7 Table 7-E                                                    |
| <input type="checkbox"/>            | Method 4 | Method 4 Calculator                                                  |

NOTES:

**SB X7-7 Table 7-A: Target Method 1**  
20% Reduction

| 10-15 Year Baseline<br>GPCD | 2020 Target<br>GPCD |
|-----------------------------|---------------------|
| 161                         | 129                 |
| NOTES:                      |                     |

**SB X7-7 Table 7-E: Target Method 3**

| Agency May Select More Than One as Applicable                                            | Percentage of Service Area in This Hydrological Region | Hydrologic Region | "2020 Plan" Regional Targets | Method 3 Regional Targets (95%) |
|------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------|------------------------------|---------------------------------|
| <input type="checkbox"/>                                                                 |                                                        | North Coast       | 137                          | 130                             |
| <input type="checkbox"/>                                                                 |                                                        | North Lahontan    | 173                          | 164                             |
| <input type="checkbox"/>                                                                 |                                                        | Sacramento River  | 176                          | 167                             |
| <input type="checkbox"/>                                                                 |                                                        | San Francisco Bay | 131                          | 124                             |
| <input type="checkbox"/>                                                                 |                                                        | San Joaquin River | 174                          | 165                             |
| <input type="checkbox"/>                                                                 |                                                        | Central Coast     | 123                          | 117                             |
| <input type="checkbox"/>                                                                 |                                                        | Tulare Lake       | 188                          | 179                             |
| <input type="checkbox"/>                                                                 |                                                        | South Lahontan    | 170                          | 162                             |
| <input checked="" type="checkbox"/>                                                      | 100%                                                   | South Coast       | 149                          | 142                             |
| <input type="checkbox"/>                                                                 |                                                        | Colorado River    | 211                          | 200                             |
| <b>Target</b><br><i>(If more than one region is selected, this value is calculated.)</i> |                                                        |                   |                              | <b>142</b>                      |
| NOTES:                                                                                   |                                                        |                   |                              |                                 |

**SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target**

| 5 Year<br>Baseline GPCD<br><i>From SB X7-7<br/>Table 5</i> | Maximum 2020<br>Target <sup>1</sup> | Calculated<br>2020 Target <sup>2</sup> | <b>Confirmed<br/>2020 Target</b> |
|------------------------------------------------------------|-------------------------------------|----------------------------------------|----------------------------------|
| 159                                                        | 151                                 | 142                                    | <b>142</b>                       |

<sup>1</sup> Maximum 2020 Target is 95% of the 5 Year Baseline GPCD except for suppliers at or below 100 GPCD.

<sup>2</sup> 2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.

NOTES:

**SB X7-7 Table 8: 2015 Interim Target GPCD**

| Confirmed<br>2020 Target<br><i>Fm SB X7-7<br/>Table 7-F</i> | 10-15 year<br>Baseline GPCD<br><i>Fm SB X7-7<br/>Table 5</i> | <b>2015 Interim<br/>Target GPCD</b> |
|-------------------------------------------------------------|--------------------------------------------------------------|-------------------------------------|
| 142                                                         | 161                                                          | <b>151</b>                          |

NOTES:

**SB X7-7 Table 9: 2015 Compliance**

| Actual 2015<br>GPCD | 2015 Interim<br>Target GPCD | Optional Adjustments <i>(in GPCD)</i> |                          |                        |                      |                       | 2015 GPCD<br><i>(Adjusted if<br/>applicable)</i> | Did Supplier<br>Achieve<br>Targeted<br>Reduction for<br>2015? |
|---------------------|-----------------------------|---------------------------------------|--------------------------|------------------------|----------------------|-----------------------|--------------------------------------------------|---------------------------------------------------------------|
|                     |                             | Enter "0" if Adjustment Not Used      |                          |                        | TOTAL<br>Adjustments | Adjusted 2015<br>GPCD |                                                  |                                                               |
|                     |                             | Extraordinary<br>Events               | Weather<br>Normalization | Economic<br>Adjustment |                      |                       |                                                  |                                                               |
| 101                 | 151                         | -                                     | -                        | -                      | -                    | 101                   | 101                                              | YES                                                           |

NOTES:

# UWMP Checklist

This checklist is developed directly from the Urban Water Management Planning Act and SB X7-7. It is provided to support water suppliers during preparation of their UWMPs. Two versions of the UWMP Checklist are provided – the first one is organized according to the California Water Code and the second checklist according to subject matter. The two checklists contain duplicate information and the water supplier should use whichever checklist is more convenient. In the event that information or recommendations in these tables are inconsistent with, conflict with, or omit the requirements of the Act or applicable laws, the Act or other laws shall prevail.

Each water supplier submitting an UWMP can also provide DWR with the UWMP location of the required element by completing the last column of either checklist. This will support DWR in its review of these UWMPs. The completed form can be included with the UWMP.

If an item does not pertain to a water supplier, then state the UWMP requirement and note that it does not apply to the agency. For example, if a water supplier does not use groundwater as a water supply source, then there should be a statement in the UWMP that groundwater is not a water supply source.

## Checklist Arranged by Water Code Section

| <b>CWC Section</b>    | <b>UWMP Requirement</b>                                                                                                                                                                                                                                               | <b>Subject</b>                               | <b>Guidebook Location</b> | <b>UWMP Location<br/>(Optional Column for Agency Use)</b> |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------|-----------------------------------------------------------|
| <b>10608.20(b)</b>    | Retail suppliers shall adopt a 2020 water use target using one of four methods.                                                                                                                                                                                       | Baselines and Targets                        | Section 5.7 and App E     |                                                           |
| <b>10608.20(e)</b>    | Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data. | Baselines and Targets                        | Chapter 5 and App E       |                                                           |
| <b>10608.22</b>       | Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.                                                  | Baselines and Targets                        | Section 5.7.2             |                                                           |
| <b>10608.24(a)</b>    | Retail suppliers shall meet their interim target by December 31, 2015.                                                                                                                                                                                                | Baselines and Targets                        | Section 5.8 and App E     |                                                           |
| <b>10608.24(d)(2)</b> | If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.                                                                     | Baselines and Targets                        | Section 5.8.2             |                                                           |
| <b>10608.26(a)</b>    | Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.                                                                                                                                        | Plan Adoption, Submittal, and Implementation | Section 10.3              |                                                           |
| <b>10608.36</b>       | Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.                                                                           | Baselines and Targets                        | Section 5.1               |                                                           |
| <b>10608.40</b>       | Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.                                                                                                                             | Baselines and Targets                        | Section 5.8 and App E     |                                                           |
| <b>10620(b)</b>       | Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.                                                                                                             | Plan Preparation                             | Section 2.1               |                                                           |
| <b>10620(d)(2)</b>    | Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.                                   | Plan Preparation                             | Section 2.5.2             |                                                           |

|                    |                                                                                                                                                                                                                                |                                              |                          |  |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|--------------------------|--|
| <b>10620(f)</b>    | Describe water management tools and options to maximize resources and minimize the need to import water from other regions.                                                                                                    | Water Supply Reliability Assessment          | Section 7.4              |  |
| <b>10621(b)</b>    | Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.  | Plan Adoption, Submittal, and Implementation | Section 10.2.1           |  |
| <b>10621(d)</b>    | Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.                                                                                                                             | Plan Adoption, Submittal, and Implementation | Sections 10.3.1 and 10.4 |  |
| <b>10631(a)</b>    | Describe the water supplier service area.                                                                                                                                                                                      | System Description                           | Section 3.1              |  |
| <b>10631(a)</b>    | Describe the climate of the service area of the supplier.                                                                                                                                                                      | System Description                           | Section 3.3              |  |
| <b>10631(a)</b>    | Indicate the current population of the service area.                                                                                                                                                                           | System Description and Baselines and Targets | Sections 3.4 and 5.4     |  |
| <b>10631(a)</b>    | Provide population projections for 2020, 2025, 2030, and 2035.                                                                                                                                                                 | System Description                           | Section 3.4              |  |
| <b>10631(a)</b>    | Describe other demographic factors affecting the supplier's water management planning.                                                                                                                                         | System Description                           | Section 3.4              |  |
| <b>10631(b)</b>    | Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.                                                                                                                | System Supplies                              | Chapter 6                |  |
| <b>10631(b)</b>    | Indicate whether groundwater is an existing or planned source of water available to the supplier.                                                                                                                              | System Supplies                              | Section 6.2              |  |
| <b>10631(b)(1)</b> | Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.                 | System Supplies                              | Section 6.2.2            |  |
| <b>10631(b)(2)</b> | Describe the groundwater basin.                                                                                                                                                                                                | System Supplies                              | Section 6.2.1            |  |
| <b>10631(b)(2)</b> | Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.                                                  | System Supplies                              | Section 6.2.2            |  |
| <b>10631(b)(2)</b> | For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition. | System Supplies                              | Section 6.2.3            |  |
| <b>10631(b)(3)</b> | Provide a detailed description and analysis of the location, amount, and sufficiency of                                                                                                                                        | System Supplies                              | Section 6.2.4            |  |

|                       |                                                                                                                                                                                                                                                              |                                     |                      |  |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------|--|
|                       | groundwater pumped by the urban water supplier for the past five years                                                                                                                                                                                       |                                     |                      |  |
| <b>10631(b)(4)</b>    | Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.                                                                                                                                        | System Supplies                     | Sections 6.2 and 6.9 |  |
| <b>10631(c)(1)</b>    | Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.                                                                                                                                                             | Water Supply Reliability Assessment | Section 7.1          |  |
| <b>10631(c)(1)</b>    | Provide data for an average water year, a single dry water year, and multiple dry water years                                                                                                                                                                | Water Supply Reliability Assessment | Section 7.2          |  |
| <b>10631(c)(2)</b>    | For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.                                                                                                                            | Water Supply Reliability Assessment | Section 7.1          |  |
| <b>10631(d)</b>       | Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.                                                                                                                                                           | System Supplies                     | Section 6.7          |  |
| <b>10631(e)(1)</b>    | Quantify past, current, and projected water use, identifying the uses among water use sectors.                                                                                                                                                               | System Water Use                    | Section 4.2          |  |
| <b>10631(e)(3)(A)</b> | Report the distribution system water loss for the most recent 12-month period available.                                                                                                                                                                     | System Water Use                    | Section 4.3          |  |
| <b>10631(f)(1)</b>    | Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.                                                 | Demand Management Measures          | Sections 9.2 and 9.3 |  |
| <b>10631(f)(2)</b>    | Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.                                                                                  | Demand Management Measures          | Sections 9.1 and 9.3 |  |
| <b>10631(g)</b>       | Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.                                                             | System Supplies                     | Section 6.8          |  |
| <b>10631(h)</b>       | Describe desalinated water project opportunities for long-term supply.                                                                                                                                                                                       | System Supplies                     | Section 6.6          |  |
| <b>10631(i)</b>       | CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU. | Demand Management Measures          | Section 9.5          |  |
| <b>10631(j)</b>       | Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use                                                                                                                                    | System Supplies                     | Section 2.5.1        |  |

|                                 |                                                                                                                                                                                                                                                                            |                                     |               |  |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------------|--|
|                                 | projections from that source.                                                                                                                                                                                                                                              |                                     |               |  |
| <b>10631(j)</b>                 | Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types. | System Supplies                     | Section 2.5.1 |  |
| <b>10631.1(a)</b>               | Include projected water use needed for lower income housing projected in the service area of the supplier.                                                                                                                                                                 | System Water Use                    | Section 4.5   |  |
| <b>10632(a) and 10632(a)(1)</b> | Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.                                                                                                                     | Water Shortage Contingency Planning | Section 8.1   |  |
| <b>10632(a)(2)</b>              | 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.                                                                                                       | Water Shortage Contingency Planning | Section 8.9   |  |
| <b>10632(a)(3)</b>              | Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.                                                                                                                                                    | Water Shortage Contingency Planning | Section 8.8   |  |
| <b>10632(a)(4)</b>              | Identify mandatory prohibitions against specific water use practices during water shortages.                                                                                                                                                                               | Water Shortage Contingency Planning | Section 8.2   |  |
| <b>10632(a)(5)</b>              | Specify consumption reduction methods in the most restrictive stages.                                                                                                                                                                                                      | Water Shortage Contingency Planning | Section 8.4   |  |
| <b>10632(a)(6)</b>              | Indicated penalties or charges for excessive use, where applicable.                                                                                                                                                                                                        | Water Shortage Contingency Planning | Section 8.3   |  |
| <b>10632(a)(7)</b>              | Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.                                         | Water Shortage Contingency Planning | Section 8.6   |  |
| <b>10632(a)(8)</b>              | Provide a draft water shortage contingency resolution or ordinance.                                                                                                                                                                                                        | Water Shortage Contingency Planning | Section 8.7   |  |
| <b>10632(a)(9)</b>              | Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.                                                                                                                                                   | Water Shortage Contingency Planning | Section 8.5   |  |
| <b>10633</b>                    | For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.                                                                                                            | System Supplies (Recycled Water)    | Section 6.5.1 |  |
| <b>10633(a)</b>                 | Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of                                                                                                                                           | System Supplies (Recycled Water)    | Section 6.5.2 |  |

|                 |                                                                                                                                                                                                                                          |                                              |                                 |  |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------|--|
|                 | wastewater collected and treated and the methods of wastewater disposal.                                                                                                                                                                 |                                              |                                 |  |
| <b>10633(b)</b> | Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.                                                                    | System Supplies (Recycled Water)             | Section 6.5.2.2                 |  |
| <b>10633(c)</b> | Describe the recycled water currently being used in the supplier's service area.                                                                                                                                                         | System Supplies (Recycled Water)             | Section 6.5.3 and 6.5.4         |  |
| <b>10633(d)</b> | Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.                                                                                          | System Supplies (Recycled Water)             | Section 6.5.4                   |  |
| <b>10633(e)</b> | Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.                 | System Supplies (Recycled Water)             | Section 6.5.4                   |  |
| <b>10633(f)</b> | Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.                                                         | System Supplies (Recycled Water)             | Section 6.5.5                   |  |
| <b>10633(g)</b> | Provide a plan for optimizing the use of recycled water in the supplier's service area.                                                                                                                                                  | System Supplies (Recycled Water)             | Section 6.5.5                   |  |
| <b>10634</b>    | Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability                                               | Water Supply Reliability Assessment          | Section 7.1                     |  |
| <b>10635(a)</b> | 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.              | Water Supply Reliability Assessment          | Section 7.3                     |  |
| <b>10635(b)</b> | Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.                | Plan Adoption, Submittal, and Implementation | Section 10.4.4                  |  |
| <b>10642</b>    | 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. | Plan Preparation                             | Section 2.5.2                   |  |
| <b>10642</b>    | Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing                                                          | Plan Adoption, Submittal, and Implementation | Sections 10.2.2, 10.3, and 10.5 |  |

|                    |                                                                                                                                                                                                                     |                                              |                            |  |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|----------------------------|--|
|                    | about the plan.                                                                                                                                                                                                     |                                              |                            |  |
| <b>10642</b>       | The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.                                                                                  | Plan Adoption, Submittal, and Implementation | Sections 10.2.1            |  |
| <b>10642</b>       | Provide supporting documentation that the plan has been adopted as prepared or modified.                                                                                                                            | Plan Adoption, Submittal, and Implementation | Section 10.3.1             |  |
| <b>10644(a)</b>    | Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.                                                                                             | Plan Adoption, Submittal, and Implementation | Section 10.4.3             |  |
| <b>10644(a)(1)</b> | Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.                         | Plan Adoption, Submittal, and Implementation | Section 10.4.4             |  |
| <b>10644(a)(2)</b> | The plan, or amendments to the plan, submitted to the department shall be submitted electronically.                                                                                                                 | Plan Adoption, Submittal, and Implementation | Sections 10.4.1 and 10.4.2 |  |
| <b>10645</b>       | Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours. | Plan Adoption, Submittal, and Implementation | Section 10.5               |  |

## Checklist Arranged by Subject

| <b>CWC Section</b> | <b>UWMP Requirement</b>                                                                                                                                                                                                             | <b>Subject</b>   | <b>Guidebook Location</b> | <b>UWMP Location<br/>(Optional Column for Agency Use)</b> |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------|-----------------------------------------------------------|
| <b>10620(b)</b>    | Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.                                                                           | Plan Preparation | Section 2.1               | <i>N/A</i>                                                |
| <b>10620(d)(2)</b> | Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable. | Plan Preparation | Section 2.5.2             | <b>Section 8.1, Section 8.2.2, and Appendix G</b>         |

|                       |                                                                                                                                                                                                                                                                       |                                              |                       |                                                                                                                      |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>10642</b>          | 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.                              | Plan Preparation                             | Section 2.5.2         | <a href="#">Section 8.2.1, and Appendix F</a>                                                                        |
| <b>10631(a)</b>       | Describe the water supplier service area.                                                                                                                                                                                                                             | System Description                           | Section 3.1           | <a href="#">Section 1.6</a>                                                                                          |
| <b>10631(a)</b>       | Describe the climate of the service area of the supplier.                                                                                                                                                                                                             | System Description                           | Section 3.3           | <a href="#">Section 2.2.1</a>                                                                                        |
| <b>10631(a)</b>       | Provide population projections for 2020, 2025, 2030, and 2035.                                                                                                                                                                                                        | System Description                           | Section 3.4           | <a href="#">Section 2.2.2, Table 2-2</a>                                                                             |
| <b>10631(a)</b>       | Describe other demographic factors affecting the supplier's water management planning.                                                                                                                                                                                | System Description                           | Section 3.4           | <a href="#">Section 2.2.2</a>                                                                                        |
| <b>10631(a)</b>       | Indicate the current population of the service area.                                                                                                                                                                                                                  | System Description and Baselines and Targets | Sections 3.4 and 5.4  | <a href="#">Section 2.2.2, Table 2-2</a>                                                                             |
| <b>10631(e)(1)</b>    | Quantify past, current, and projected water use, identifying the uses among water use sectors.                                                                                                                                                                        | System Water Use                             | Section 4.2           | <a href="#">Past &amp; Current: Section 2.3.2, Table 2-5</a><br><a href="#">Projected: Section 2.6.1, Table 2-10</a> |
| <b>10631(e)(3)(A)</b> | Report the distribution system water loss for the most recent 12-month period available.                                                                                                                                                                              | System Water Use                             | Section 4.3           | <a href="#">Section 2.3.2, Table 2-5</a>                                                                             |
| <b>10631.1(a)</b>     | Include projected water use needed for lower income housing projected in the service area of the supplier.                                                                                                                                                            | System Water Use                             | Section 4.5           | <a href="#">Section 2.6.2</a>                                                                                        |
| <b>10608.20(b)</b>    | Retail suppliers shall adopt a 2020 water use target using one of four methods.                                                                                                                                                                                       | Baselines and Targets                        | Section 5.7 and App E | <a href="#">Section 2.4.6</a>                                                                                        |
| <b>10608.20(e)</b>    | Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data. | Baselines and Targets                        | Chapter 5 and App E   | <a href="#">Section 2.4.5 and Section 2.4.6</a>                                                                      |
| <b>10608.22</b>       | Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.                                                  | Baselines and Targets                        | Section 5.7.2         | <a href="#">Section 2.4.5</a>                                                                                        |
| <b>10608.24(a)</b>    | Retail suppliers shall meet their interim target by December 31, 2015.                                                                                                                                                                                                | Baselines and Targets                        | Section 5.8 and App E | <a href="#">Section 2.4.6</a>                                                                                        |

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| <b>10608.24(d)(2)</b> | If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.                              | Baselines and Targets | Section 5.8.2         | <b>N/A (no adjustment)</b>                                   |
| <b>10608.36</b>       | Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.                                    | Baselines and Targets | Section 5.1           | <b>N/A</b>                                                   |
| <b>10608.40</b>       | Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.                                                                                      | Baselines and Targets | Section 5.8 and App E | <b>Section 2.4.5 and Section 2.4.6</b>                       |
| <b>10631(b)</b>       | Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.                                                                                                                | System Supplies       | Chapter 6             | <b>Section 2.6.1, Table 2-8</b>                              |
| <b>10631(b)</b>       | Indicate whether groundwater is an existing or planned source of water available to the supplier.                                                                                                                              | System Supplies       | Section 6.2           | <b>Section 3.3</b>                                           |
| <b>10631(b)(1)</b>    | Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.                 | System Supplies       | Section 6.2.2         | <b>N/A</b>                                                   |
| <b>10631(b)(2)</b>    | Describe the groundwater basin.                                                                                                                                                                                                | System Supplies       | Section 6.2.1         | <b>Section 3.3</b>                                           |
| <b>10631(b)(2)</b>    | Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.                                                  | System Supplies       | Section 6.2.2         | <b>Section 3.3 and Appendix A</b>                            |
| <b>10631(b)(2)</b>    | For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition. | System Supplies       | Section 6.2.3         | <b>N/A</b>                                                   |
| <b>10631(b)(3)</b>    | Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years                                                                 | System Supplies       | Section 6.2.4         | <b>Section 3.5.2, Table 3-3</b>                              |
| <b>10631(b)(4)</b>    | Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.                                                                                                          | System Supplies       | Sections 6.2 and 6.9  | <b>Section 2.6.1, Table 2-8 and Section 3.5.3, Table 3-5</b> |
| <b>10631(d)</b>       | Describe the opportunities for exchanges                                                                                                                                                                                       | System                | Section 6.7           | <b>Section 7.4</b>                                           |

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|                 | or transfers of water on a short-term or long-term basis.                                                                                                                                                                                                                  | Supplies                         |                         |                                                                  |
| <b>10631(g)</b> | Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.                                                                           | System Supplies                  | Section 6.8             | <a href="#">Section 7.5</a>                                      |
| <b>10631(h)</b> | Describe desalinated water project opportunities for long-term supply.                                                                                                                                                                                                     | System Supplies                  | Section 6.6             | <a href="#">Section 7.6</a>                                      |
| <b>10631(j)</b> | Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.                                                                                                                    | System Supplies                  | Section 2.5.1           | <a href="#">Section 2.6.1,</a><br><a href="#">Section 3.5.3</a>  |
| <b>10631(j)</b> | Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types. | System Supplies                  | Section 2.5.1           | <a href="#">N/A</a>                                              |
| <b>N/A</b>      | For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.                                                                                                            | System Supplies (Recycled Water) | Section 6.5.1           | <a href="#">Section 6.1 and</a><br><a href="#">Section 8.2.2</a> |
| <b>10633(a)</b> | Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.                                                                  | System Supplies (Recycled Water) | Section 6.5.2           | <a href="#">Section 6.2</a>                                      |
| <b>10633(b)</b> | Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.                                                                                                      | System Supplies (Recycled Water) | Section 6.5.2.2         | <a href="#">Section 6.2</a>                                      |
| <b>10633(c)</b> | Describe the recycled water currently being used in the supplier's service area.                                                                                                                                                                                           | System Supplies (Recycled Water) | Section 6.5.3 and 6.5.4 | <a href="#">Section 6.3</a>                                      |
| <b>10633(d)</b> | Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.                                                                                                                            | System Supplies (Recycled Water) | Section 6.5.4           | <a href="#">Section 6.4</a>                                      |
| <b>10633(e)</b> | Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.                                                   | System Supplies (Recycled Water) | Section 6.5.4           | <a href="#">Section 6.4</a>                                      |

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| <b>10633(f)</b>                 | Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.                                            | System Supplies (Recycled Water)    | Section 6.5.5 | <a href="#">Section 6.4</a>                        |
| <b>10633(g)</b>                 | Provide a plan for optimizing the use of recycled water in the supplier's service area.                                                                                                                                     | System Supplies (Recycled Water)    | Section 6.5.5 | <a href="#">Section 6.5</a>                        |
| <b>10620(f)</b>                 | Describe water management tools and options to maximize resources and minimize the need to import water from other regions.                                                                                                 | Water Supply Reliability Assessment | Section 7.4   | <a href="#">Section 5.2.3 and 7.3</a>              |
| <b>10631(c)(1)</b>              | Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.                                                                                                                            | Water Supply Reliability Assessment | Section 7.1   | <a href="#">Section 3.7</a>                        |
| <b>10631(c)(1)</b>              | Provide data for an average water year, a single dry water year, and multiple dry water years                                                                                                                               | Water Supply Reliability Assessment | Section 7.2   | <a href="#">Section 3.7.4</a>                      |
| <b>10631(c)(2)</b>              | For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.                                                                                           | Water Supply Reliability Assessment | Section 7.1   | <a href="#">Section 5.4</a>                        |
| <b>10634</b>                    | Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability                                  | Water Supply Reliability Assessment | Section 7.1   | <a href="#">Section 3.4</a>                        |
| <b>10635(a)</b>                 | 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. | Water Supply Reliability Assessment | Section 7.3   | <a href="#">Section 3.7.4, Tables 3-11 to 3-17</a> |
| <b>10632(a) and 10632(a)(1)</b> | Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.                                                                      | Water Shortage Contingency Planning | Section 8.1   | <a href="#">Section 5.2.3, Table 5-2</a>           |
| <b>10632(a)(2)</b>              | 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.                                                        | Water Shortage Contingency Planning | Section 8.9   | <a href="#">Section 5.3, Table 5-3</a>             |
| <b>10632(a)(3)</b>              | Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.                                                                                                     | Water Shortage Contingency Planning | Section 8.8   | <a href="#">Section 5.4</a>                        |
| <b>10632(a)(4)</b>              | Identify mandatory prohibitions against specific water use practices during water                                                                                                                                           | Water Shortage Contingency          | Section 8.2   | <a href="#">Section 5.5</a>                        |

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|                    | shortages.                                                                                                                                                                                                                                                   | Planning                                     |                      |                                                             |
| <b>10632(a)(5)</b> | Specify consumption reduction methods in the most restrictive stages.                                                                                                                                                                                        | Water Shortage Contingency Planning          | Section 8.4          | <a href="#">Section 5.5.2</a>                               |
| <b>10632(a)(6)</b> | Indicated penalties or charges for excessive use, where applicable.                                                                                                                                                                                          | Water Shortage Contingency Planning          | Section 8.3          | <a href="#">Section 5.5.3</a>                               |
| <b>10632(a)(7)</b> | Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.                           | Water Shortage Contingency Planning          | Section 8.6          | <a href="#">Section 5.6</a>                                 |
| <b>10632(a)(8)</b> | Provide a draft water shortage contingency resolution or ordinance.                                                                                                                                                                                          | Water Shortage Contingency Planning          | Section 8.7          | <a href="#">Appendix C</a>                                  |
| <b>10632(a)(9)</b> | Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.                                                                                                                                     | Water Shortage Contingency Planning          | Section 8.5          | <a href="#">Section 5.7</a>                                 |
| <b>10631(f)(1)</b> | Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.                                                 | Demand Management Measures                   | Sections 9.2 and 9.3 | <a href="#">Section 4.2</a>                                 |
| <b>10631(f)(2)</b> | Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.                                                                                  | Demand Management Measures                   | Sections 9.1 and 9.3 | <a href="#">N/A</a>                                         |
| <b>10631(i)</b>    | CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU. | Demand Management Measures                   | Section 9.5          | <a href="#">No reports. Section 4.2 discusses CVWD BMPs</a> |
| <b>10608.26(a)</b> | Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.                                                                                                                               | Plan Adoption, Submittal, and Implementation | Section 10.3         | <a href="#">Section 8.1.1, Table 8-1</a>                    |
| <b>10621(b)</b>    | Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.                                | Plan Adoption, Submittal, and Implementation | Section 10.2.1       | <a href="#">Section 8.1.1, Table 8-1 and Appendix G</a>     |
| <b>10621(d)</b>    | Each urban water supplier shall update and submit its 2015 plan to the                                                                                                                                                                                       | Plan Adoption, Submittal, and                | Sections 10.3.1 and  | <a href="#">Section 8.1.1, Table 8-2</a>                    |

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|                    | department by July 1, 2016.                                                                                                                                                                                               | Implementation                               | 10.4                            |                                                                      |
| <b>10635(b)</b>    | Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR. | Plan Adoption, Submittal, and Implementation | Section 10.4.4                  | <a href="#">Section 8.3</a>                                          |
| <b>10642</b>       | Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.                           | Plan Adoption, Submittal, and Implementation | Sections 10.2.2, 10.3, and 10.5 | <a href="#">Appendix E and Appendix F</a>                            |
| <b>10642</b>       | The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.                                                                                        | Plan Adoption, Submittal, and Implementation | Sections 10.2.1                 | <a href="#">Section 8.1.1, Table 8-1, Appendix F, and Appendix G</a> |
| <b>10642</b>       | Provide supporting documentation that the plan has been adopted as prepared or modified.                                                                                                                                  | Plan Adoption, Submittal, and Implementation | Section 10.3.1                  | <a href="#">Appendix E</a>                                           |
| <b>10644(a)</b>    | Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.                                                                                                   | Plan Adoption, Submittal, and Implementation | Section 10.4.3                  | <a href="#">Section 8.3</a>                                          |
| <b>10644(a)(1)</b> | Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.                               | Plan Adoption, Submittal, and Implementation | Section 10.4.4                  | <a href="#">Section 8.3</a>                                          |
| <b>10644(a)(2)</b> | The plan, or amendments to the plan, submitted to the department shall be submitted electronically.                                                                                                                       | Plan Adoption, Submittal, and Implementation | Sections 10.4.1 and 10.4.2      | <a href="#">Section 8.1.1, Table 8-2</a>                             |
| <b>10645</b>       | Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.       | Plan Adoption, Submittal, and Implementation | Section 10.5                    | <a href="#">Section 8.1.1 and Section 8.3</a>                        |

