WATER SUPPLY ASSESSMENT

Sand Canyon Plaza

Vesting Tentative Tract Map No. 53074
City of Santa Clarita Master Case 14-077

Prepared for:

City of Santa Clarita

July 2016

Prepared by

Santa Clarita Water Division
Castaic Lake Water Agency
26521 Summit Circle
Santa Clarita, CA 91380
Phone: (661) 259-2737 Fax: (661) 286-4333
www.scwater.org

[This page intentionally left blank.]

TABLE OF CONTENTS

Page

Contents

LIST OF TABLES

LIST OF FIGURES

APPENDICES

[This page intentionally left blank.]

1.0 INTRODUCTION

1.1.Background

This Water Supply Assessment (WSA) is prepared by Santa Clarita Water Division (SCWD) for the proposed Sand Canyon Plaza project (Project), a mixed-use planned community located on the northeast corner of Sand Canyon Road and Soledad Canyon Road in the City of Santa Clarita, Los Angeles County, California. The WSA is prepared pursuant to the requirements of Water Code section 10910 et seq., commonly referred to as Senate Bill 610 (SB 610; Costa; Chap. 643, Stats. 2001).

Effective January 1, 2002, SB 610 was adopted, along with a companion measure Senate Bill 221 (SB 221), to improve the link between information on water supply availability and certain land use decisions made by a city or county.[1] As explained below, SCWD is the retail supplier for the Project site, and Castaic Lake Water Agency (CLWA) is the wholesale public water agency for the entire CLWA service area, which includes the service areas of SCWD and three other retail purveyors in the Santa Clarita Valley.

Once a city or county determines that a project, as defined by California Water Code section 10912, is subject to the California Environmental Quality Act, Public Resources Code section 21000, et seq. (CEQA), SB 610 requires the city or county to identify a public water system that may supply water for the project, and request that the public water system prepare a water supply assessment.[2]

A "public water system" is defined by SB 610 to mean "a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections."[3] SCWD serves piped water to the public (i.e., residents of the Santa Clarita Valley) within its current service area, and the area includes about 30,700 service connections in the city of Santa Clarita and in the unincorporated Los Angeles County communities of Canyon Country, Newhall, and Saugus. As a result, SCWD is the "public water system" for purposes of this WSA.

The SCWD is the retail purveyor for the Project site, and thus the City has requested SCWD to prepare a WSA for the Project.[4] As noted above, a WSA is required for any "project" as defined by Water Code section 10912 that is subject to CEQA.[5] In the case, the Project proposes, among

---

1 California Department of Water Resources, *Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001* (October 8, 2003), p. iii.

2 California Water Code §§ 10910(b), 10910(c)(1).

3 Water Code § 10912(c).

4 Water Code § 10910(b).

5 Public Resources Code § 21080.

other things, a residential development of more than 500 dwelling units, and therefore a WSA is required.[6]

1.2 Purpose

The general purpose of a WSA is to evaluate the following question:

> *Whether the public water system's total projected water supplies available during normal, single-dry, and multiple-dry water years during a 20-year projection will meet the projected water demand of the Project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses?*[7]

If, as a result of its WSA, the public water system concludes that its water supplies are or will be insufficient, the public water system must provide to the city or county its plans for acquiring additional water supplies, setting forth the measures being undertaken to acquire and develop those supplies.[8] The WSA must include, among other information, an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the project, and water received in prior years by the public water system pursuant to those entitlements, rights, or contracts.[9]

The WSA is required to be included in any environmental document prepared for the project pursuant to CEQA.[10] In this case, the City of Santa Clarita (City) is the lead agency under CEQA, and it has determined that an Environmental Impact Report (EIR) is required for the Project; thus, this WSA will be included as part of the Sand Canyon Plaza Draft EIR.

1.3 Sand Canyon Plaza

The Project (City Master Plan 14-077) consists of up to 580 residential units, a 55,600 square-foot retail center, and a 75,000 square-foot assisted living facility on 86.9 acres in the City of Santa Clarita. The Project will be developed in five planning areas, with the following elements as shown on the Site Development Map:

Planning Area 1 (Commercial)

- 45,000 square feet retail space
- 10,600 square feet restaurant

---

[6] Water Code § 10912(a)(1). This section also includes other types of development that are defined as a "project" by this section of the code.

[7] Water Code § 10910(c).

[8] Water Code § 10911(a).

[9] Water Code § 10910(d).

[10] Water Code § 10911(b).

- 75,000 square feet Assisted Living Residence (with 120 dwelling units)
- Lake (about 1 acre)

Planning Area 2 (Apartments)

- 14 Buildings with 312 dwelling units
- Municipal Pool

Planning Area 3 (Multi-Family)

- 8 Buildings with 122 dwelling units
- Municipal Pool

Planning Area 4 (Single Family)

- 71 detached dwelling units
- Municipal Pool

Planning Area 5 (Single Family)

- 75 detached dwelling units
- Municipal Pool

Using SCWD's water demand factors from the SCWD 2013 Water Master Plan, the total estimated water demand for the Project at build-out is approximately 389 acre-feet per year (afy) in an average/normal year.[11] Water demand for the Project at build-out may increase by approximately ten percent in a dry year to a total of 428 afy. Total estimated water demand for the Project at build-out is summarized in Table 1 below. It should be noted that a portion of the Project site is currently developed as a Mobile Home Park. This existing facility uses approximately 31 acre-feet per year. This facility will be removed with the development of the Project. Accordingly, the net increase in water use for the Project is estimated to be 358 acre-feet in a normal/average year. However, for purposes of this WSA, the total estimated Project demand of 389 afy in normal/average years and 428 afy in dry years is being used to ensure a conservative analysis.

[11] SCWD June 2013.

Table 1
Water Demand Estimates – Sand Canyon Plaza Project

Land Use	# of Units	Unit	Duty Factor (AFY/Unit)	Demand[(1)] (AFY)
Assisted Living (Multi-Family Residential) (PA-1)	120	Dwelling Units	0.344	41
Multi-Family Residential (Apartments) (PA-2)	312	Dwelling Units	0.326	102
Multi-Family Motor Court (Townhomes) (PA-3)	122	Dwelling Units	0.344	42
Single Family Residential (PA-4)	71	Dwelling Units	0.573	41
Single Family Residential (PA-5)	75	Dwelling Units	0.573	43
Commercial/Retail (PA-1)	55.6	1,000 Square Feet	0.192	10
Lake (PA-1)	1.4	Acres	2.184	3
Pools	3	Each	2.184	7
Landscaped Areas	23	Acres	4.334	100
Subtotal				**389**

Source: Tract 53074 Site Development Map and SCWD Water Master Plan
Notes:
1. Demands are estimated for an average/normal year. Project water demand increases by approximately ten percent in a dry year to a total of 428 AFY.

1.4 Castaic Lake Water Agency[12]

CLWA was formed in 1962 for the purpose of contracting with DWR to acquire and distribute imported SWP water to the water purveyors in the Valley. CLWA serves an area of 195 square miles in Los Angeles and Ventura Counties.

Adequate planning for, and the procurement of, a reliable water supply is a fundamental function of CLWA. CLWA obtains its water supply for wholesale purposes principally from the SWP and currently has a long-term SWP water supply contract (SWP Contract) with DWR for 95,200 acre-feet (AF) of SWP Table A Amount[13]. However, the availability of SWP supply is variable. It fluctuates from year to year depending on precipitation, regulatory restrictions, legislative

[12] Description is based on the 2015 UWMP, Section 1.5.1

[13] Table A is a schedule of annual water amounts as set forth in long-term SWP delivery contracts. Table A defines the annual volume of water that can be requested by an SWP contractor in a given year under regular contract provisions without consideration of surplus SWP water deliveries or other supplies available to an SWP contractor.

restrictions and operational conditions and is subject to substantial curtailment during dry years.[14]

Due to this variability, CLWA and the retail purveyors have developed additional water supplies, as well as storage in groundwater banks. The primary additional supply is a surface supply CLWA imports from the Buena Vista Water Storage District (Buena Vista or BVWSD) and the Rosedale-Rio Bravo Water Storage District (Rosedale-Rio Bravo or RRBWSD) in Kern County. This supply, which is developed from Buena Vista's high flow Kern River entitlements, was first delivered to CLWA in 2007 and is available as a firm annual supply delivered to CLWA through SWP facilities. In addition, CLWA is able to manage some of the variability in its SWP supplies under certain provisions of its SWP Contract, including the use of flexible storage at Castaic Lake, as well as through its participation in several groundwater banking/exchange programs in Kern County.

All imported water is delivered to Castaic Lake through SWP facilities. From Castaic Lake, which serves as the terminal reservoir of the SWP's West Branch, the water is treated at either CLWA's Earl Schmidt Filtration Plant or Rio Vista Water Treatment Plant and delivered to the retail water purveyors through transmission lines owned and operated by CLWA.

CLWA is able to meet approximately half of the Valley's urban demand with imported water. CLWA and the retail purveyors meet the balance of their demands primarily with local groundwater and a small amount of recycled water. As further set forth in this WSA and the 2015 UWMP, CLWA and the retail purveyors have evaluated the long-term water needs (water demand) within their service areas based on applicable population projections and county and city land use plans and have compared these needs against existing and potential water supplies. Results indicate that the total projected water supplies available to CLWA and the retail purveyors over the next 20-year projection and beyond during normal, single-dry, and multiple-dry year periods are sufficient to meet the total projected water demands throughout the Valley, where CLWA and the retail purveyors plan to utilize increased proportions of SWP Table A Amounts, and will continue to incorporate conjunctive use, water conservation, water transfers, recycled water, and water banking as part of the total water supply portfolio and management approach to long-term water supply planning and strategy.

1.5 Santa Clarita Water Division and Other Retail Water Suppliers

1.5.1 Santa Clarita Water Division

SCWD is one of the four retail water agencies within the Santa Clarita Valley, serving the eastern part of the Valley. The Sand Canyon Plaza site is located within SCWD's service area. SCWD is the retail water supplier for the Project.

SCWD's service area includes portions of the City of Santa Clarita and unincorporated portions of the Los Angeles County in the communities of Saugus, Canyon Country, and Newhall.

[14] A more detailed discussion of factors having the potential to affect SWP deliveries is provided in the 2015 UWMP Section 3.

SCWD's current service area includes a mix of residential and commercial land uses, mostly comprised of single-family homes, apartments, condominiums, and a number of local shopping centers and neighborhood commercial developments. SCWD has 14 wells and approximately 30,800 service connections. SCWD receives State Water Project (SWP) water and other imported supplies from CLWA through 13 turnouts. SCWD generally produces water using a mix of groundwater and imported water with some variation in the mix depending on peak demands and weather conditions. Recycled water is being planned for delivery to customers for non-potable uses, such as landscape irrigation.

The groundwater basin in the Santa Clarita Valley is un-adjudicated, meaning that neither SCWD nor the other purveyors have specific adjudicated water rights or specific limitations that dictate their water supply. However, in practice, SCWD accesses available groundwater supplies pursuant to appropriative groundwater rights in the basin and in accordance with a groundwater operating plan developed by SCWD, CLWA and the other retail water purveyors in the Santa Clarita Valley, and complemented by analyses based on a numerical groundwater flow model of the basin. Groundwater supplies available to SCWD are further discussed below.

1.5.2 Other Retail Water Suppliers

A description of the four retail purveyors' service areas is provided below.
The **SCWD** service area includes portions of the City of Santa Clarita and unincorporated portions of the County in the communities of Canyon Country, Newhall, and Saugus. SCWD has approximately 30,681 service connections as reported in 2015 Santa Clarita Water Report.
The Los Angeles County Waterworks **District #36** service area encompasses approximately 6,600 acres in the Hasley Canyon area and the unincorporated community of Val Verde. LACWD #36 has approximately 1,345 service connections as reported in 2015 Santa Clarita Water Report.

The **NCWD** service area includes portions of the City of Santa Clarita and unincorporated portions of the County in the communities of Newhall, Canyon Country, Valencia, and Castaic. NCWD has approximately 9,736 service connections as reported in 2015 Santa Clarita Water Report.

The **VWC** service area includes a portion of the City of Santa Clarita and unincorporated portions of the County in the communities of Castaic, Newhall, Saugus, Stevenson Ranch, and Valencia. VWC has approximately 31,353 service connections as reported in 2015 Santa Clarita Water Report.

As of 2015, the retail purveyors provided water to about 73,115 service connections in the Santa Clarita Valley.

1.6 2015 Urban Water Management Plan

Pursuant to SB 610 requirements, if the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan (UWMP),[15] then relevant information from that document may be incorporated into the SB 610 WSA.[16] The 2015 UWMP was adopted by the CLWA, NCWD and VWC Boards of Directors in June 2016, and filed with the DWR.[17] Since SCWD is a Division of CLWA, the CLWA Board of Directors' approval of the 2015 UWMP was also on behalf of SCWD.

The 2015 UWMP is a regional planning document covering the CLWA service area, which includes the service areas of the four retail water purveyors in the Santa Clarita Valley.[18] Together, CLWA and the retail purveyors are the Santa Clarita Valley's "urban water suppliers." The 2015 UWMP encouraged extensive public participation that included information dissemination; public workshops, meetings, and hearings; plan adoption; and plan submittal to DWR.[19] The 2015 UWMP included the adopted resolutions of CLWA, NCWD, and VWC. The 2015 UWMP includes the following nine major sections:

Section 1: Introduction

Section 2: Water Use

Section 3: Water Resources

Section 4: Recycled Water

Section 5: Water Quality

Section 6: Reliability Planning

Section 7: Water Demand Management Measures

Section 8: Water Shortage Contingency Planning

Section 9: References

Consistent with the UWMP Act, the 2015 UWMP accomplishes water supply planning over the required 20-year period in five-year increments. While not required, CLWA and the retail purveyors exceeded the requirements of the UWMP Act by including a span of 35 years in the approved 2015 UWMP The 2015 UWMP identifies and quantifies adequate water supplies for existing and future demands, in normal/average, single-dry, and multiple-dry years, and implements conservation and efficient use of urban water supplies. While not required, the 2015

[15] California Urban Water Management Planning Act (UWMP Act), Water Code § 10610, et seq.

[16] California Water Code § 10910(c)(2).

[17] 2015 UWMP for the Santa Clarita Valley.

[18] Water resource specialists with expertise in water resource management were retained by CLWA and the retail purveyors to assist in preparing the 2015 UWMP.

[19] The 2015 UWMP, Section 1.

UWMP and this SB 610 include an assessment of two multiple-dry year periods: a four-year dry period, and a three-year dry period.

As stated, the Project's total projected water demand is estimated to be 389 afy for an average/normal year and 428 afy for a dry year. The timing of the Project places it within the time frame for calculating "planned future uses" within the 2015 UWMP. This information is incorporated by reference in this WSA. SCWD accounted for the Project's total water demand when it provided its projected single-family and multi-family residential account information through 2050 for inclusion in the 2015 UWMP (see 2015 UWMP, Table 2-5).

1.7 SCWD Policies and Regulatory Approvals/Permits

SCWD Policies. The Project will be subject to all SCWD policies that govern development and connection to the SCWD public water system. As with other projects within its service area, the Project applicant is responsible for making appropriate financial and contractual arrangements with SCWD to assure the necessary improvements are made to the water supply infrastructure to serve the Project site.

Other Regulatory Approvals/Permits, SCWD is regulated by the State Water Resources Control Board – Division of Drinking Water (DDW) and must meet rigorous water quality standards. In addition, the City will evaluate the Project, conduct extensive environmental oversight and review, and independently determine the sufficiency of the water supplies to serve the Project site. (Water Code § 10911(b)-(c).) In doing so, the City will determine if the Project will be provided with an acceptable level of water supply based on the criteria set forth in the City's General Plan, because the Project is located within the Santa Clarita Valley, and because it includes a subdivision map application. In making this determination, the City may use water-related data set forth in documents such as the 2015 UWMP and other information provided by CLWA and the retail purveyors (see, for example, **Section 1.8**, below).

1.8 Information Used or Relied Upon in Preparing this WSA

This WSA used or relied on information contained in the documents identified below. Copies of the referenced documents are available for review at SCWD by contacting Keith Abercrombie, (661) 259-2737, and can be obtained upon payment of the actual costs of reproduction. These documents, which are part of SCWD's record for the preparation of this WSA, are organized below by subject matter and are presented chronologically (earliest first):

DWR Documents

DWR. The Monterey Amendment to the SWP water supply contracts between DWR and SWP Contractors (1995-1996).

DWR. California's Groundwater, Bulletin 118. Santa Clara River Valley Groundwater Basin, Santa Clara River Valley East Subbasin, Update 2003 (DWR Bulletin 118; http://www.water.ca.gov/groundwater/bulletin118/index.cfm, accessed May 14, 2015).

DWR. Monterey Settlement Agreement, May 5, 2003.

DWR. Monterey Plus (SCH No. 2003011118) Final EIR certified February 2010.

DWR. State Water Project Delivery Capability Report. July 1, 2015.

CLWA Documents

DWR/CLWA. Water supply contract between DWR and CLWA 1963 (plus amendments including the "Monterey Amendments," 1995, and Amendment No. 19, 1999, the transfer of 41,000 af of entitlement from Kern County Water Agency (KCWA) to CLWA).

DWR/CLWA/KCWA. 2002, 2003 Point of Delivery Agreements (Semitropic Groundwater Storage Program)

SAIC. Final EIR — Supplemental Water Project Transfer of 41,000 af of State Water Project Table A Amount, December 2004 (SCH No. 1998041127).

SAIC. Final EIR — Rosedale-Rio Bravo Water Storage District (RRBWSD) Water Banking and Exchange Program, October 2005 (SCH No. 2005061157).

Buena Vista/Rosedale-Rio Bravo/CLWA Water Acquisition Agreement, 2006.

SAIC. Final EIR — CLWA Water Acquisition from the Buena Vista Water Storage District and Rosedale-Rio Bravo Water Storage District Water Banking and Recovery Program, October 2006 (SCH No. 2006021003).

Bon Terra. Final Program EIR Recycled Water Master Plan, March 2007 (SCH No. 2005041138).

Groundwater Documents

Slade. Hydrogeologic Investigation, Perennial Yield and Artificial Recharge Potential of the Alluvial Sediments in the Santa Clarita River Valley of Los Angeles County, California, Vols. I and II, Richard C. Slade and Associates, LLC (Slade), December 1986 (Slade 1986).

Slade. Hydrogeologic Assessment of the Saugus Formation in the Santa Clara Valley of Los Angeles County, Vols. I and II, February 1988 (Slade 1988).

Slade. 2001 Update Report: Hydrogeologic Conditions in the Alluvial and Saugus Formation Aquifer Systems, prepared for Santa Clarita Valley Water Purveyors, July 2002 (2001 Update Report).

LSCE. Groundwater Management Plan — Santa Clara River Valley Groundwater Basin, East Subbasin, December 2003 (2003 Groundwater Management Plan).

CH2M Hill/LSCE. Analysis of Groundwater Basin Yield, Upper Santa Clara River Groundwater Basin, East Subbasin, Los Angeles County, California, prepared in support of the August 2001 Memorandum of Understanding between the Upper Basin Water Purveyors and UWCD, August 2005 (2005 Basin Yield Report).

GSI. Technical Memorandum: Potential Effects of Climate Change on Groundwater Supplies for the Newhall Ranch Specific Plan, Santa Clarita Valley, California**,** GSI Water Solutions, Inc. (GSI), March 18, 2008.

LSCE/GSI. Analysis of Groundwater Supplies and Groundwater Basin Yield, Upper Santa Clara River Groundwater Basin, East Subbasin, August 2009 (2009 Basin Yield Update).

Other Water Planning Documents

CLWA. June 2016. *2015 Urban Water Management Plan*, prepared for CLWA, SCWD, NCWD, VWC, and Los Angeles County Waterworks District No. 36, prepared by Kennedy/Jenks Consultants.

LSCE. Santa Clarita Valley Water Report 2015, June 2016 (2015 Santa Clarita Valley Water Report).

2002 CLWA draft Recycled Water Master Plan.

CLWA. Recycled Water Master Plan, Administrative Draft (Sections 1-7), January to April 2016, prepared by Kennedy/Jenks Consultants.

2.0 DOCUMENTATION OF EXISTING AND PROJECTED WATER SUPPLIES

Water Code section 10910(b) requires the WSA to identify any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the Project, and describe the quantities of water received in prior years by the public water system. The identification of existing water supply entitlements, water rights, or water service contracts held by the public water system must be demonstrated by providing information related to the following:

1. Written contracts or other proof of entitlement to an identified water supply;
2. Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system;
3. Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply; and
4. Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.

In accordance with SB 610 (Water Code section 10910(d)), Section 2 of the 2015 UWMP (June 2016) and Section 2 of the 2015 Santa Clarita Valley Water Report (June 2016) summarize the total quantity of water used by each of the water purveyors in the Santa Clarita Valley to meet water demand since importation of SWP water began in 1980. Also, **Section 1.8**, above, contains a list of documents with information related to the identification of the existing water supply entitlements, water rights, or water service contracts relevant to meet the Project's water demand, in addition to the existing and projected water supplies reported in the 2015 UWMP and the most recent 2015 Santa Clarita Valley Water Report.

The water supplies available to serve the Santa Clarita Valley as a whole are derived from five sources:

1. Groundwater from the Alluvial aquifer;
2. Groundwater from the Saugus Formation;
3. SWP water and other imported supplies;
4. Dry-year groundwater banking programs; and
5. Recycled water.

Within the CLWA service area, these water supply sources can be characterized as: (a) local supplies, consisting of groundwater and recycled water; and (b) imported supplies, transported via the SWP and consisting of SWP contract amounts and dry-year supplies delivered from groundwater banking programs. The 2015 UWMP, Section 2, and the 2015 Santa Clarita Valley Water Report, Section 2, summarize the quantities of water used by each of the water purveyors

in the Santa Clarita Valley to meet water demands since importation of SWP water began in the Santa Clarita Valley in 1980.

Demand-side management programs (conservation) are considered an important component of the Valley's approach to water supply. The conservation efforts of CLWA, SCWD, and the other retail purveyors are important in reducing regional and local water demands on a long-term basis.

As further set forth herein and in the 2015 UWMP, potential future water sources include acquisition of additional imported water supplies, recycled water, stormwater runoff, increased short-term pumping from the Saugus Formation during dry years, and additional groundwater banking programs.

This WSA relies in part upon information from the 2015 UWMP, the 2015 SWP Delivery Capability Report prepared by DWR, the 2015 Santa Clarita Valley Annual Water Report, and numerous other water resource and planning documents listed in **Section 1.8**, above.

2.1 Imported Water Supplies

CLWA's service area covers approximately 195 square miles (124,800 acres), including the entire City of Santa Clarita and surrounding unincorporated communities. CLWA obtains SWP water from a SWP terminal reservoir, Castaic Lake. The water is treated, filtered, and disinfected at CLWA's Earl Schmidt Filtration Plant and Rio Vista Water Treatment Plant, which have a combined treatment capacity of 122 mgd. Treated water is delivered from the treatment plants by gravity flow to each of the four retail purveyors (SCWD, Los Angeles County Waterworks District No. 36, NCWD, and VWC) through a distribution network of pipelines and turnouts. At present, CLWA delivers water to the four retail purveyors through 26 turnouts.

CLWA obtains water supplies from the SWP, which is owned and operated by DWR. CLWA is one of 29 SWP contractors holding long-term water supply contracts with DWR. The SWP contracts entered into in the 1960s had initial 75-year terms, which thus would begin to expire in 2035. While the SWP contracts provide for continued water service to the contractors beyond the initial term, efforts are currently underway to extend the contracts to improve financing for the SWP. Negotiations on extending the SWP contracts took place between DWR and the SWP Contractors during 2013 and 2014, and were open to the public. The following terms were agreed to and are currently the subject of analysis under the requirements of the California Environmental Quality Act (CEQA) (Notice of Preparation dated September 12, 2014):

- Extend the term of the 29 SWP contracts to December 31, 2085.
- Provide for increased SWP financial operating reserves during the extended term of the SWP contracts.
- Provide additional funding mechanisms and accounts to address SWP needs and purposes.
- Develop a revised payment methodology with a corresponding billing system that better matches the timing of future SWP revenues to future expenditures.

It is anticipated that the term of the SWP contracts will be extended to December 31, 2085. The contracts and associated amendments are scheduled to be finalized by summer 2017.

SWP water originates as rainfall and snowmelt in northern and central California. Runoff is stored in Lake Oroville, which is the SWP's largest storage facility. The water is then released from Lake Oroville down the Feather River to the Sacramento River and the Sacramento-San Joaquin Delta. From the Delta, SWP supplies are conveyed via the California Aqueduct to the Bay area, the San Joaquin Valley, and regions of the Central Coast and southern California. Water delivered for use by CLWA is conveyed through the West Branch of the Aqueduct to Quail and Pyramid Lakes and then to Castaic Lake, the terminus for the West Branch.

Hydrologic conditions and other factors can alter and reduce the availability of SWP water in a given year. The amount of water DWR determines is available and allocates for delivery in a given year is based on that year's hydrologic conditions, the amount of water in storage in the SWP system, current regulatory and operational constraints, and the SWP contractors' requests for SWP supplies. The long-term average availability of Table A deliveries during normal, single-dry, and multiple-dry year scenarios over the 20-year projection has been analyzed by DWR and is further discussed below.

CLWA has an annual SWP Table A Amount of 95,200 AF per year of water from the SWP.[20] This Table A Amount is a maximum and does not reflect the actual amount of water available to CLWA from the SWP, which varies from year-to-year.

Other Types of SWP Water. Each long-term water supply contract describes various types of SWP water that are available to SWP contractors to supplement their Table A water: (a) Article 21 water; (b) carryover water; and (c) turnback pool water.

Article 21 water (so named because it is described in Article 21 of the water supply contracts) is water that SWP contractors may receive on a short-term basis in addition to their Table A water, if they request it. DWR makes Article 21 water available to SWP contractors during periods when the supply of SWP water exceeds the cumulative delivery requests scheduled by the SWP contractors. Article 21 water may become available during drier year types, not just during wetter years.

Carryover water is SWP water that is allocated to a SWP contractor and approved for delivery to that contractor in a given year, but not used by the end of the year. This water is exported from

[20] Of CLWA's 95,200 af of SWP Table A Amount, 41,000 af of annual Table A Amount was acquired by CLWA from the Kern County Water Agency's member-district, Wheeler Ridge-Maricopa Water Storage District, in March 1999, through a water transfer approved by DWR in amendments to its water supply contracts with CLWA and Kern County Water Agency. The 41,000 afy water transfer was the subject of both a Draft and Final EIR under CEQA. CLWA's Board of Directors certified the Final EIR and approved the 41,000 afy water transfer on December 23, 2004. On December 17, 2009, the Court of Appeal, Second District, issued a published decision upholding the sufficiency of the EIR under the CEQA.

the Delta, but instead of being delivered to the SWP contractor, it is stored in the SWP's share of the San Luis Reservoir, when space is available, for the contractor to use in the following year.

SWP contractors also may offer a portion of their Table A water that has been allocated in the current year and exceeds their needs to a "turnback pool," where another contractor may purchase it. Contractors that sell their extra Table A water in a turnback pool receive payments from contractors that buy this water through the turnback pool. The 2015 State Water Project Final Delivery Capability Report estimates that the likelihood of existing-condition SWP Article 21 deliveries being greater than 20 taf/year is 18% (a reduction of 3% from the levels estimated in the 2013 Delivery Reliability Report).[21]

The availability of Article 21 water and turnback pool water can fluctuate substantially. When available, these supplies provide additional water that CLWA may be able to use, either directly to meet demands or for later use after storage in its groundwater banking programs. To the extent CLWA is able to make use of these supplies when available, CLWA may be able to improve the reliability of its SWP supplies beyond the amounts reflected in the adopted UWMP for the Santa Clarita Valley.

While not specifically provided for in the SWP water supply contracts, in single-dry years, DWR has created dry year water purchase programs for contractors needing additional supplies. Through these programs, water is purchased by DWR from willing sellers in areas that have available supplies and is then sold by DWR to contractors willing to purchase those supplies. The availability of these supplies is highly variable. However, CLWA's access to these supplies when they are available would enable it to improve the reliability of its dry-year supplies beyond the amounts reflected in the adopted UWMP.

Flexible Storage Account. As part of CLWA's water supply contract with DWR, CLWA has access to a portion of the storage capacity of Castaic Lake. This "flexible storage account" allows CLWA to utilize up to 4,684 af of the storage in Castaic Lake. Any of this amount that CLWA borrows must be replaced by CLWA within 5 years of its withdrawal. CLWA manages this storage by keeping the account full in normal and wet years and then delivering that stored amount (or a portion of it) during dry periods. The account is refilled during the next year that adequate SWP supplies are available to CLWA to do so.

In 2005, CLWA negotiated with the Ventura County SWP contractor agency to obtain the use of its flexible storage account through 2015. This transaction allows CLWA access to another 1,376 af of storage in Castaic Lake. In 2015, CLWA negotiated an extension to the original agreement that provides access to this additional storage on a year-to-year basis through 2025.[22]

CLWA plans to use this supply only in dry years. For the single-dry year condition, it was assumed the entire amount would be used. For the two multiple-dry year conditions, it was

[21] DWR. State Water Project Final Delivery Capability Report 2015. July, 2015.

[22] First Amendment to Memorandum of Understanding for use of Flexible Storage Account. CLWA/Ventura County SWP contractor agency. December 1, 2015.

assumed that the entire amount would be used sometime during the dry-year period, so the average annual supply during that period would be one fourth of the total for the four-year period, and one third of the total for the three-year period. Any water withdrawn was assumed to be replaced in intervening average and wet years and would be available again for use in the next dry year.

Factors Affecting SWP Table A Supplies. While Table A identifies the maximum amount of Table A water a SWP contractor may request, the amount of SWP water actually available and allocated to SWP contractors each year is dependent on a number of factors and can vary and be reduced substantially from year-to-year. The primary factors affecting SWP water delivery reliability include the availability of water at the source of supply in northern California (i.e., hydrology) and regulatory restrictions on SWP operations.[23] Other factors include potential climate change impacts and the potential for interruptions in conveying SWP supplies through the Delta due to earthquakes and Delta levee failure. DWR and other agencies are engaged in ongoing efforts to reduce risks to the Delta and enhance emergency response capabilities.[24]

DWR specifically accounts for these various factors having the potential to affect the SWP delivery reliability in its computer modeling, which simulates the expected SWP deliveries under estimated existing and future conditions. DWR calculates the water delivery reliability of the SWP using the CalSim-II computer model, which simulates existing and future operations of the SWP. DWR's modeling is based on 82 years of historical data (water years 1922-2003), rainfall, and runoff, and the data have been adjusted to reflect 2013 current and future levels of development in the source areas. The resulting data is used to forecast the probable amount of water available to the SWP under current and future conditions (with the effects of climate change factored into the modeling for future conditions).

DWR's most current published estimate of SWP delivery reliability is found in the SWP Final Delivery Capability Report 2015. As used by DWR, the term "water delivery reliability" refers to the annual amount of SWP water that can be expected to be delivered with a certain frequency, or in other words, the probability that a certain amount of water will be delivered by the SWP in a given year.

SWP Table A Supply Assessment. As noted above, DWR's Final 2015 Delivery Capability Report includes DWR's estimates of SWP water delivery reliability under both existing (2015) and future (2035) conditions. According to the Report, many of the same challenges to SWP operations that were identified in the 2013 reliability report remain. For example, like the 2013

[23] Please refer to the DWR Final 2015 SWP Delivery Capability Report, Chapter 2, for a detailed discussion of the factors affecting estimates of existing and future SWP water delivery reliability. DWR's Final 2015 SWP Delivery Capability Report and its technical appendices are incorporated herein by reference. In addition, the 2015 UWMP for the Santa Clarita Valley summarizes various factors that combine to affect and potentially reduce SWP water delivery reliability (see 2015 UWMP, Section 3).

[24] Please refer to the DWR Final 2015 SWP Delivery Capability Report, Chapters 3 and 4, for an in-depth discussion of the actions being taken by DWR and other agencies to reduce risks to the Delta and enhance emergency response capabilities.

report, the 2015 report shows potential reductions in SWP Delta exports and Table A deliveries due to the operational restrictions imposed on the SWP by Biological Opinions issued by U.S. Fish and Wildlife Service in December 2008 and National Marine Fisheries Service in June 2009, and Delta water quality and flow restrictions from the State Water Resources Control Board's water quality control plan for the Delta. Estimates of future reliability also reflect potential effects of climate change and sea level rise.

DWR Analysis Results. The 2015 UWMP for the Santa Clarita Valley relies on the DWR's most current Final 2015 Delivery Capability Report to estimate supplies. DWR's analysis of existing (2015) conditions is used to estimate near term SWP supplies and its analysis of future (2035) conditions is used to estimate 2035-2050 SWP supplies. As has been suggested by DWR, SWP supplies for the five-year increments between 2015 and 2035 are interpolated between these values. SWP supplies for years beyond 2035 are assumed to be the same as for 2035.

DWR's current estimates show that the SWP can deliver on a long-term average basis 62% of the total maximum Table A amounts under existing conditions and 61% under future conditions. In the worst-case single-dry year, DWR estimates that SWP can deliver 11% of the total maximum Table A amounts under existing conditions, and 8% under future conditions. DWR estimates during a four-year dry period that the SWP can deliver an average 33% of the total maximum Table A amounts under existing and future conditions, and during a three-year dry period that the SWP can deliver an average 21% under existing conditions and 20% under future conditions.[25]

The extremely dry sequence from the beginning of January 2013 through the end of 2015 was one of the driest two-year periods in the historical record. Water year 2013 was a year with two hydrologic extremes.[26] October through December 2012, was one of the wettest fall periods on record, but was followed by the driest consecutive 12 months on record. Accordingly, the 2013 SWP supply allocation was a low 35 percent of SWP Table A Amounts. The 2013 hydrology ended up being even drier than DWR's conservative hydrologic forecast, so the SWP began 2014 with reservoir storage lower than targeted levels and less stored water available for 2014 supplies. Compounding this low storage situation, 2014 also was an extremely dry year, with runoff for water year 2014 the fourth driest on record. Due to extraordinarily dry conditions in 2013 and 2014, the 2014 SWP water supply allocation was a historically low 5 percent of Table A Amounts. The dry hydrologic conditions that led to the low 2014 SWP water supply allocation were extremely unusual, and to date this hydrology has not been included in the SWP

[25] See DWR Final 2015 SWP Delivery Capability Report, Section 6, Table 6-4. On average, annual delivery of Table A water estimated in the 2015 report is 2,550 taf/year, 3 taf less than the 2,553 taf/year estimated in the 2013 report. On average, the dry-period deliveries of Table A water were also lower in the 2013 report than in the 2015 report. According to DWR, the change is due to model refinements discussed in detail in Appendix B accompanying the Final 2015 SWP Delivery Capability Report (see Section 6, p. 27).

[26] A water year begins in October and runs through September. For example, water year 2013 is October 2012 through September 2013.

delivery estimates presented in DWR's Final 2015 SWP Delivery Capability Report (2015 DCR). It is anticipated that the hydrologic record used in the DWR model will be extended to include the period through 2014 during the next update of the model, which is expected to be completed prior to issuance of the next update to the report. For the reasons stated above, the 2015 UWMP for the Santa Clarita Valley and this WSA uses a conservative assumption that a 5 percent allocation of SWP Table A Amounts represents the "worst case" scenario. CLWA and the local purveyors, including SCWD, were able to accommodate all demands during 2014, in spite of this low level of SWP deliveries, due to the reliability systems that have been put in place by CLWA and the purveyors for this very occurrence. Calls for conservation from our customers were answered, and the Santa Clarita Valley was also able to benefit from the water banking programs that CLWA has implemented. Table 2 shows SWP supplies projected to be available to CLWA in average/normal years (based on the average delivery over a repeat of the study's historic hydrologic period from 1922 through 2003). Table 2 also summarizes estimated SWP supply availability in a single dry year (based on a repeat of the historic hydrologic conditions of 1977, as well as the worst-case actual allocation of 2014) and over two multiple dry year periods (based on a repeat of the historic four-year drought of 1931 through 1934, and three-year drought of 1990 through 1992).

TABLE 2
SWP TABLE A SUPPLY RELIABILITY (AF) [(a)(b)]

Wholesaler (Supply Source)	2015	2020	2025	2030	2035-2050
Average Water Year[(c)]					
DWR (SWP)					
Table A Supply	59,000	58,800	58,500	58,300	58,100
% of Table A Amount[(d)]	62%	62%	61%	61%	61%
Single-Dry Year					
DWR (SWP)					
Table A Supply[(e)]	10,500	9,800	9,000	8,300	7,600
% of Table A Amount[(d)]	11%	10%	9%	9%	8%
Table A Supply[(f)]	4,800	4,800	4,800	4,800	4,800
% of Table A Amount[(d)]	5%	5%	5%	5%	5%
Multiple-Dry Year					
DWR (SWP)					
Four-Year Period[(g)]					
Table A Supply	31,400	31,400	31,400	31,400	31,400
% of Table A Amount[(d)]	33%	33%	33%	33%	33%
Three-Year Period[(h)]					
Table A Supply	20,000	19,800	19,500	19,300	19,000
% of Table A Amount[(d)]	21%	21%	20%	20%	20%

Source: 2015 UWMP, Table 3-2

Notes:

(a) Supplies to CLWA are based on DWR analyses presented in its 2015 DCR, assuming existing SWP facilities and current regulatory and operational constraints (except as otherwise indicated in Note f).

(b) Table A supplies include supplies allocated in one year that are carried over for delivery the following year.

(c) Based on average deliveries over a repeat of the study's historic hydrologic period of 1922 through 2003.

(d) Supply as a percentage of CLWA's Table A Amount of 95,200 AF.

(e) Based on a repeat of the worst case historic single dry year of 1977 (from 2015 DCR).

(f) Based on the worst-case actual allocation of 2014.

(g) Supplies shown are annual averages over four consecutive dry years, based on a repeat of the historic four-year dry period of 1931-1934.

(h) Supplies shown are annual averages over three consecutive dry years, based on a repeat of the historic three-year dry period of 1990-1992.

Comparison of DWR Analysis Results for SWP Supplies From 2009 to 2015 (Under Current (2015) Conditions)

Table 3, Average and Dry-Period SWP Table A Deliveries Under Current Conditions and Resulting Deliveries to CLWA, provides average and dry-period Table A deliveries for current conditions (2015) from the Final 2015 SWP Delivery Capability Report and compares those figures to those in the 2009, 2011, and 2013 Delivery Reliability Reports.

As shown on **Table 3**, applying the Final 2015 SWP Delivery Capability Report Table A delivery percentages under current conditions to CLWA's Table A Amount of 95,200 afy, results in approximately 59,024 afy under average year conditions, 10,472 afy under single-dry year conditions, and 29,274 afy (on average) under multiple-dry year conditions.

Table 3
Average and Dry-Period SWP Table A Deliveries Under Existing Conditions and Resulting Deliveries to CLWA

	SWP Table A Delivery (Percent of Maximum Table A Amount)[1]					
	Long-Term Average	**Single Dry Year (1977)**	**2-Year Drought (1976-1977)[2]**	**4-Year Drought (1931-1934)**	**6-Year Drought (1987-1992)**	**6-Year Drought (1929-1934)[3]**
2009 Report[4]	2,483 (60%)	302 (7%)	1,496 (36%)	1,402 (34%)	1,444 (35%)	1,398 (34%)
2011 Report	2,524 (61%)	377 (9%)	1,571 (38%)	1,455 (35%)	1,461 (35%)	1,433 (35%)
2013 Report	2,553 (62%)	495 (12%)	1,269 (31%)	1,263 (31%)	1,176 (28%)	1,260 (30%)
2015 Report	2,550 (62%)	454 (11%)	1,165 (28%)	1,356 (33%)	1,182 (29%)	1,349 (33%)
CLWA Table A Delivery (2015)[5]	59,024	10,472	26,656	31,416	27,608	31,416

Source: 2009, 2011, 2013 Delivery Reliability Reports and 2015 Delivery Capability Report.

Notes:

(1) Maximum Table A Amount is 4,133 thousand acre-feet/year (taf/yr).

(2) Droughts are analyzed using the historical drought-period precipitation and runoff patterns from 1922-2003 as a reference, although existing 2015 conditions (e.g., land use, water infrastructure) are also accounted for in the modeling.

(3) For reference, the worst multi-year drought on record was the 1929-1934 drought, although the brief drought of 1976-1977 was more intensely dry.

(4) The 2015 Delivery Capability report results shown here are used in the most current 2015 UWMP for the Santa Clarita Valley.

(5) Rows 1-4 above reflect statewide maximum Table A Amounts expressed in thousand acre-feet (taf/yr) quantities. In contrast, this Row 5 expresses CLWA's maximum Table A Amount in acre-feet (af) quantities. Average deliveries under the range of multiple-dry year conditions is 29,274 AF.

Written Contracts or Other Proof of Supplies

In addition to the discussion above the following is a list of major reports, studies, agreements, and other actions pertinent to the availability of SWP supplies in the Santa Clarita Valley.

- Water Supply Contracts between DWR and CLWA (plus amendments, including the "Monterey Amendments," 1995, and Amendment No. 18, 1999, the transfer of 41,000 acre-feet of SWP Table A Amount).[27]
- SWP Final Delivery Capability Report, July 2015.
- 2009, 2011, 2013 Delivery Reliability Reports.
- 2015 Santa Clarita Valley Water Report, June 2016.
- Monterey Settlement Agreement, 2003.
- 2007 CLWA Water Acquisition Agreement with Buena Vista Water Storage District and Rosedale-Rio Bravo Water Storage District.
- Memorandum of Understanding Regarding Pilot Program Between CLWA and Casitas Municipal Water District, The City of San Buenaventura and United Water Conservation District, Use of Flexible Storage Account, Castaic Lake. December 1, 2005.
- First Amendment to Memorandum of Understanding for use of Flexible Storage Account. December 1, 2015.

Permits/Approvals or Other Necessary Regulatory Approvals

The primary SWP-related documents that have received state or local approvals are listed below:

- Water Supply Contracts between DWR and CLWA (plus amendments, including the "Monterey Amendments," 1995, and Amendment No. 18, 1999, the transfer of 41,000 acre-feet of SWP Table A Amount).
- Monterey Settlement Agreement, 2003.
- 2015 UWMP, June 2016.
- Final EIR -- Supplemental Water Project Transfer of 41,000 Acre-Feet of SWP Table A Amount, certified December 23, 2004, including all CLWA approval resolutions and other final actions relating thereto.
- Final Monterey Plus EIR, 2010. The Monterey Plus EIR is the subject of a legal challenge. The effect of that litigation on SWP/CLWA water supplies is explained in Subsection 2.2, below.
- Buena Vista/Rosedale-Rio Bravo Water Storage Districts Water Acquisition Final EIR, 2006

[27] The DWR/CLWA water supply contracts set forth the availability of SWP supplies to CLWA.

2.2 Effect of Monterey Plus EIR Litigation on SWP/CLWA Water Supplies

In 1994, DWR and the SWP contractors (including CLWA) engaged in mediated negotiations in a broader attempt to update management of the SWP and settle water allocations disputes arising under the long-term SWP water supply contracts that were executed in the 1960s.

The negotiations grew into an omnibus revision to the contracts known as the "Monterey Amendment." The Monterey Amendment had several principle objectives: (1) resolve conflicts and disputes among SWP contractors regarding water allocations; (2) restructure and clarify SWP water allocation procedures and deliveries in times of shortage and surplus; (3) reduce financial pressures on agricultural contractors; (4) adjust the SWP's financial rate structure to more closely match revenues with needs; (5) facilitate water management practices and water transfers that improve reliability and flexibility of SWP water supplies in conjunction with contractors' other local supplies; (6) resolve legal and institutional issues related to groundwater storage of SWP water; and (7) transfer 20,000 acres in Kern County known as the "Kern Fan Element" to local water agencies to facilitate development of a locally operated groundwater bank.

After execution of the Monterey Amendment by DWR and a majority of the SWP contractors (including CLWA), the environmental group Planning and Conservation League filed suit in December of 1995 seeking to invalidate the Monterey Amendment and its environmental impact report (EIR) prepared under the California Environmental Quality Act (CEQA). That lawsuit ultimately ended in a court-approved settlement agreement in 2003. The settlement provided, among other things, that DWR would prepare a new EIR for the Monterey Amendment, the previously approved and executed Monterey Amendments would remain in effect for 27 SWP contractors, and DWR would implement the Monterey Amendment in operating the SWP while it prepared the new EIR.

On February 1, 2010, DWR certified the new EIR. On May 4, 2010, DWR's Director certified the EIR and decided to continue implementing the Monterey Amendment. On June 3, 2010, two petitioner groups filed separate lawsuits seeking to invalidate the Monterey Amendment and the related transfer of the Kern Fan Element based on alleged violation of CEQA.[28] The trial court bifurcated the issues for a series of trials. In January 2013 the Court issued a final statement of decision for phase one, finding that petitioners' reverse validation actions seeking to invalidate the Monterey Amendment and Kern Fan Element transfer were barred by the statute of limitations.

The trial court proceeded to hear briefing on the remaining CEQA claims and issued a ruling in March 2014, finding that DWR's new EIR for the Monterey Amendment complied with CEQA in all respects except for its analysis of the future impacts of the operations of the local Kern

[28] *Central Delta Water Agency et al. v. Department of Water Resources et al.* (Sacramento Superior Court Case No. 34-2010-80000561), *Rosedale-Rio Bravo Water Storage District et al. v. Department of Water Resources* (Sacramento Superior Court Case No. 34-2010-80000703).

Water Bank that was developed by local water agencies on the Kern Fan Element land transferred as part of the Monterey Amendment. In October 2014, the trial court issued its final ruling addressing the remedy under CEQA. The court ordered decertification of the Monterey Plus Amendment EIR, noting however that DWR is not required to prepare an entirely new EIR and that only the new EIR sections will be subject to further challenge. Importantly, prior project approvals are to remain in place and the Kern Water Bank may continue to operate while DWR corrects the EIR. Notably, SWP operations and water deliveries to CLWA are not affected by the outcome of the case because SWP operations are independent from operations of the separate Kern Water Bank facilities. The trial court decision was appealed by several parties and the appeal process is pending.

2.2.1 Other Factors Affecting State Water Project Deliveries

Various legal, regulatory, climatic and environmental factors have the potential to affect the availability and reliability of SWP supplies. As discussed above, the California Department of Water Resources (DWR) specifically accounts for these and other factors in evaluating the projected delivery capability of SWP supplies to the State Contractors. Following is a brief summary of several other factors concerning the SWP.

FWS and NMFS Biological Opinions

In December 2008 and June 2009, respectively, the United States Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) issued biological opinions (BiOps) setting forth each agency's conclusions regarding the effects that the proposed long-term coordinated operations of the SWP and Central Valley Project (CVP) would have on threatened and endangered fish species in the Delta.[29] Both BiOps conclude that the operation of the SWP and CVP as proposed by DWR and the Bureau of Reclamation would jeopardize the continued existence of the protected species. Because FWS and NMFS reached "jeopardy" conclusions, each was required by the federal Endangered Species Act (ESA) to develop a Reasonable and Prudent Alternative (RPA) to the proposed project, and to include that RPA in its respective BiOp. According to their terms, the RPAs developed and adopted by FWS and NMFS impose various new restrictions and requirements on SWP and CVP operations.

As applied to the SWP, the RPAs included in the BiOps have the potential to result in substantially reduced water exports from the Delta. Previous estimates prepared by DWR indicated that, in comparison to the level of SWP exports from the Delta that previously were

[29] The December 15, 2008 FWS BiOp evaluated impacts to the delta smelt. The June 4, 2009 NMFS BiOp evaluated impacts to winter-run and spring-run Chinook salmon, steelhead, green sturgeon, and resident killer whales.

authorized under State Board Decision 1641 (D-1641),[30] the FWS BiOp could reduce SWP deliveries by 18 to 29 percent during average and dry conditions, respectively, and the NMFS BiOp could reduce SWP deliveries by an additional 10 percent (for an aggregate reduction of 28 to 39 percent). Those potential reductions, however, cannot be predicted with certainty because the RPA restrictions are dependent upon highly variable factors such as hydrologic conditions affecting Delta water supplies, flow conditions in the Delta, migratory and reproductive patterns of the protected species, and numerous other non-project factors that impact the health and abundance of fish species and their habitats. As further discussed above, the RPA restrictions contained in the BiOps have been expressly accounted for in DWR's Final 2015 SWP Delivery Capability Report and future projections of SWP deliveries.

FWS BiOp Litigation

In early 2009, the State Water Contractors, the San Luis Delta-Mendota Water Authority, and several individual water agencies holding contracts for SWP and CVP supplies filed legal challenges against the FWS BiOp regarding delta smelt. (The Consolidated Delta Smelt Cases, E.D. Cal. 1:09-CV-00407-OWW-GSA.) In November 2009, the Federal District Court of the Eastern District of California granted summary judgment on the claim made by several plaintiffs that the federal defendants violated the National Environmental Policy Act (NEPA) by failing to perform NEPA analysis prior to provisionally adopting and implementing the FWS BiOp and RPA. Further, in May 2010, the court issued Findings of Fact and Conclusions of Law on a motion for preliminary injunction, which confirmed the court's prior NEPA ruling and also determined that plaintiffs were likely to prevail on their claims that FWS violated the federal ESA and the Administrative Procedure Act (APA) in adopting the RPA for delta smelt. Thereafter, the parties filed motions for summary judgment to obtain a final ruling in the cases, and those motions were argued in early July 2010. In March 2011, the court issued a final decision that invalidated the FWS BiOp and RPA in several respects and ordered FWS to prepare a new BiOp. FWS and others appealed that decision to the Ninth Circuit Court of Appeals. In March 2014, the Court of Appeals issued an opinion that reversed the District Court decision and determined that the FWS BiOp and RPA did not violate the ESA or the APA. The Court of Appeals ruled, however, that the Bureau of Reclamation (BOR) must prepare an Environmental Impact Statement under the National Environmental Policy Act (NEPA) to evaluate the effects of the BiOp. To date that NEPA analysis has not been completed, although an Environmental Impact Statement is expected in 2016. In the meantime, FWS, DWR and

[30] D-1641 implements the objectives of the 1995 Bay-Delta Plan and imposes flow and water quality objectives to assure protection of beneficial uses in the Delta. The requirements of D-1641 address, among other things, standards for fish and wildlife protection, municipal and industrial water quality, agricultural water quality, and salinity. D-1641 imposed a new operating regime for the Delta, including measures such as "X2," an export/inflow ratio, and the Vernalis Adaptive Management Program (VAMP). The standards under D-1641 are accomplished through requirements and conditions imposed on the water right permits for the SWP, the CVP and others.

BOR continue to use the RPA measures as a guideline for restricting SWP and CVP operations to protect delta smelt.

NMFS BiOp Litigation

After issuance of the NMFS BiOp in June 2009, the State Water Contractors and other water agencies filed legal challenges against the BiOp. (The Consolidated Salmon Cases, E.D. Cal. 1:09-CV-1053-OWW-DLB.) In May 2010, the Federal District Court for the Eastern District of California ruled that the federal defendants violated NEPA by failing to analyze the impact of the BiOp and RPA on humans and the human environment. The court also ruled that plaintiffs were likely to prevail on their claims that NMFS violated the federal ESA and the APA in adopting the RPA. As with the delta smelt litigation, the parties also filed motions for summary judgment to obtain a final ruling in the cases. In September 2011, the court issued a final decision that invalidated the NMFS BiOp and RPA and ordered NMFS to prepare a new BiOp. NMFS and others appealed that decision to the Ninth Circuit Court of Appeals. In December 2014, the Court of Appeals issued an opinion that reversed the District Court decision and held that NMFS's BiOp was sufficient and that NMFS's adoption of the BiOp was not arbitrary and capricious. Similar to the delta smelt case (above), the Court of Appeals ruled that the Bureau of Reclamation (BOR) must prepare an Environmental Impact Statement under NEPA to evaluate the effects of the NMFS BiOp. To date that NEPA analysis has not been completed. Meanwhile, NMFS, DWR and BOR continue to use the RPA measures as a guideline for restricting SWP and CVP operations to protect listed anadromous species.

Consistency Determination Litigation

Because the delta smelt and salmon species that are the subject of the FWS and NMFS BiOps are also protected under the California Endangered Species Act (CESA), the SWP and CVP are required to obtain take authorization for project operations from the California Department of Fish and Wildlife (DFW, formerly Department of Fish and Game). In July 2009 and September 2009, respectively, DFG issued "consistency determinations" which found that SWP and CVP operations do not violate CESA to the extent that such operations are in compliance with the RPAs set forth in the FWS and NMFS BiOps. Because the consistency determinations are issued under state law, and thus could have remained in effect even if the federal BiOps were overturned, the State Water Contractors and the Kern County Water Agency filed legal challenges against the consistency determinations. Those cases were stayed for years pending the final outcome of The Consolidated Delta Smelt Cases and The Consolidated Salmon Cases.[31] In late 2015, the legal challenges against the consistency determinations were dismissed, thus generally the RPAs in the federal BiOps serve as the regulatory framework for take authorization under CESA.

[31] See, e.g., State Water Contractors v. Cal. Dept. of Fish and Game, Sac. Sup. Ct. Case No. 34-2010-80000552; State Water Contractors v. Cal. Dept. of Fish and Game, Sac. Sup. Ct. Case No. 34-2010-80000560.

Longfin Smelt Protections

Regulatory actions related to longfin smelt also have the potential to affect the availability and reliability of SWP supplies. In February 2008, longfin smelt were listed as a "candidate" species under CESA, and DFW imposed certain interim restrictions on SWP operations for the protection of longfin smelt and its critical habitat. In February 2009, shortly before longfin smelt were officially listed as a "threatened" species under CESA, DFW issued Incidental Take Permit No. 2081-2009-001-03 (the Permit) to DWR, which imposes various terms and conditions on the ongoing and long-term operations of SWP facilities in the Delta. The operating restrictions under the Permit are based in large part on the restrictions imposed on the SWP by the 2008 FWS BiOp for delta smelt (see above). The resulting water supply reductions under the Permit depend on several variable factors, such as Delta hydrology, migratory and reproductive patters of longfin smelt, and other factors affecting species abundance in the Delta. Notably, DWR has not indicated whether any particular reductions in SWP exports are likely to result from the Permit. In March 2009, a legal challenge was filed against the Permit.[32] In February 2014, a settlement was reached and the suit was dismissed. Among other terms, the settlement calls for implementation of a 3-year longfin smelt study program.

Development of Delta Plan and Delta Flow Criteria

In November 2009, the California Legislature enacted SBx7-1 as part of a comprehensive package related to water supply reliability, ecosystem health, and the Delta.[33] Among other things, SBX7-1 creates the Delta Stewardship Council (Council) and directs the Council to develop a management plan for the Delta by January 1, 2012 (the Delta Plan). In May 2013, the Council approved and certified a Final Programmatic Environmental Impact Report (PEIR) for the proposed Delta Plan. Various agencies and organizations have filed legal challenges against the PEIR. (See, State Water Contractors et al. v. Delta Stewardship Council, Sacramento County Superior Court, Judicial Council Coordinated Proceeding No. 4758.) The coordinated challenges allege that the Council exceeded its authority under the Sacramento-San Joaquin Delta Reform Act of 2009 and failed to analyze the Plan's impacts under the California Environmental Quality Act.In May 2016, the Court issued a Statement of Decision addressing the parties' arguments on statutory issues, and dismissing the CEQA claims as moot unless and until the Council adopts a revised Plan and related CEQA document. Specifically, the Court found that the Delta Plan violated the Delta Reform Act, and directed the Council to rescind its Plan-related approvals and revise the Plan and any applicable regulations to: (1) include quantified or otherwise measurable targets associated with achieving reduced Delta reliance, reduced environmental harm from invasive species, restoring more natural flows, and increased water supply reliability, in

[32] See State Water Contractors v. California Dept. of Fish and Game, et al., Sac. Sup. Ct. Case No. 34-2009-80000203.

[33] SBX7-1 became effective February 3, 2010 and adds Division 35 to the California Water Code (commencing with Section 85300). Division 35 is referred to as the Sacramento-San Joaquin Delta Reform Act of 2009.

accordance with the Delta Reform Act; (2) provide a flow policy that includes quantified or otherwise measure targets; and (3) promote options for water conveyance and storage systems. At this time it is not known whether, when, or to what extent the Council may amend the Delta Plan or undertake related actions or further CEQA review. Parties to the case may appeal the trial court decision, and thus the litigation is still considered active.

SBx7-1 also directed the State Board to develop flow criteria for the Delta to protect public trust resources, including fish, wildlife, recreation and scenic enjoyment, and required DFW to identify quantifiable biological objectives and flow criteria for species of concern in the Delta. In August 2010, the State Board adopted Resolution No. 2010-0039 approving its report entitled "Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem" (Flow Criteria). The State Board report concludes that substantially higher flows are needed through the Delta than have occurred in previous decades in order to benefit zooplankton and various fish species.[34] Separately, in September 2010, DFW issued a draft report entitled "Quantifiable Biological Objectives and Flow Criteria for Aquatic and Terrestrial Species of Concern Dependent on the Delta" (DFW Report). The DFW Report is based on similar biological objectives and recommends Delta flows similar to those set forth in the State Board's Flow Criteria.[35] Notably, both the State Board and DFW recognize that their recommended flow criteria for the Delta do not balance the public interest or the need to provide an adequate and reliable water supply, and thus the recommendations may not be consistent with the public trust doctrine.[36] The State Board and DFW also acknowledge that their recommended flow criteria do not have any regulatory or adjudicatory effect, although they may be used to inform various ongoing processes.[37]

Public Trust Challenge to Delta Exports

In 2010, environmental and fisheries advocates filed suit in Sacramento County Superior Court alleging that water exports from the Delta violate the public trust doctrine and are unconstitutional. (See, California Water Impact Network v. SWRCB (Sac. County Sup. Ct. Case No. 34-2010-80000653.) The plaintiffs in that case seek to compel the State Board to adopt and enforce flow, salinity, and temperature standards in the Delta. DWR is also a respondent in the case, and State Water Contractors (SWC) have intervened as parties. DWR and the SWC contend that plaintiffs' claims already have been determined by litigation related to the State Board Water Right Decision 1641 that is now final. In 2011, the United States Bureau of Reclamation, which was named as a real party in interest, filed a statement that it will not waive sovereign immunity. The matter is still pending before the trial court.

34 Flow Criteria at 5-8

35 DFW Report at 13.

36 Flow Criteria at 4; DFW Report at 16.

37 Flow Criteria at 3, 10; DFG Report at ES-4.

2.3 Dry-Year Supplies

As stated in the 2015 UWMP, water supply reliability for CLWA, and in turn SCWD and the other retail purveyors within the Santa Clarita Valley, has improved significantly with the development of conjunctive use and groundwater banking. Conjunctive use is the coordinated operation of multiple water supplies to achieve improved supply reliability.

Groundwater banking programs involve storing available SWP surface water supplies during wet years in groundwater basins such as the San Joaquin Valley. Water is stored either directly by surface spreading or injection, or indirectly by supplying surface water to farmers for their use in lieu of their intended groundwater pumping. During water shortages, the stored water is pumped out and conveyed through the California Aqueduct to CLWA as the banking partner, or used by the farmers in exchange for their surface water allocations, which are delivered to CLWA as the banking partner through the California Aqueduct.

CLWA has entered into groundwater banking and water exchange programs as described below and has, in aggregate, more than 140,000 AF of recoverable water outside the local groundwater basin.[38]

CLWA is a partner in two existing groundwater banking programs, the Semitropic Banking Program and Rosedale-Rio Bravo Water Storage District (RRBWSD) Banking Program as described below. Current operational planning includes use of water stored in these groundwater banking programs for dry-year supply. Accordingly, these supplies are reflected as contributing only to dry-year supply reliability.

In 2002, CLWA entered into a temporary storage agreement with Semitropic, and stored an available portion of its Table A supply (24,000 AF) in an account in Semitropic's program. In 2004, 32,522 AF of CLWA's available 2003 Table A supply was stored in a second temporary Semitropic account. In accordance with the terms of CLWA's storage agreements with Semitropic, 90 percent of the banked amount, or a total of 50,870 AF, was recoverable through 2013 to meet CLWA water demands when needed. CLWA executed an amendment for a ten-year extension of each banking agreement with Semitropic in April 2010. After storage withdrawals in 2009, 2010, and 2014, and transfers of 5,000 AF in 2014 for increased recovery capacity, the storage balance available to CLWA was 35,970 AF. As a result, CLWA can withdraw up to 35,970 AF of SWP Table A water that is stored in Semitropic to meet Valley demands when needed in dry years.

Semitropic has recently expanded its groundwater banking program to incorporate its Stored Water Recovery Unit (SWRU). In 2015 CLWA entered into an agreement with Semitropic to participate in the SWRU. Under this agreement, the two short-term accounts containing 35,970 AF were transferred into this new program. Under the SWRU agreement, CLWA can store and recover additional water within a 15,000 AF storage account. The term of the Semitropic

[38] Descriptions of the groundwater banking programs are based on the 2015 UWMP, Section 3.5.

Banking Program extends through 2035 with the option of a 10 year renewal. CLWA may withdraw up to 5,000 AFY from its account.

CLWA has also entered into a long-term banking agreement with RRBWSD with a total storage capacity of 100,000 AF. Between 2005 and 2012 CLWA delivered sufficient water from the SWP and other supplies to fill its 100,000 AF account. CLWA began storing water in this program in 2005 and has stored water in 2005, 2006, 2007, 2010, 2011, and 2012. In 2012, the maximum storage capacity of 100,000 AF was reached. Withdrawals from the water bank occurred in 2014 and 2015 for a total recovery of 5,822 AF leaving 94,178 AF currently available for withdrawal.

CLWA's existing firm withdrawal capacity in the RRBWSD program is 3,000 AFY. To enhance dry-year recovery capacity, in 2015 CLWA in cooperation with RRBWSD and Irvine Ranch Water District initiated construction of additional facilities that are anticipated to be available at the end of 2016 or the beginning of 2017. Some of the wells constructed for this program have tested above the MCL for arsenic. The project proponents are currently investigating means to modify these well by sealing off higher arsenic zones and implementing blending strategies. With these facilities the firm extraction capacity is estimated to increase to 10,000 AFY even in exceptionally dry conditions such as those experienced in 2014 and 2015. In addition, CLWA has the right under the contract to develop four additional wells which would bring the firm recovery capacity to 20,000 AFY. This additional capacity is anticipated to be available by 2030. In addition to this firm recovery capacity, in moderately dry years Rosedale is required to use up to 20,000 AFY of other available recovery capacity to meet its recovery obligations under the banking agreement.

Short-term water exchanges may also serve as a means to enhance water reliability. In 2011 CLWA entered into two ten-year exchange agreements to enhance the management of its water supplies. CLWA executed a ten-year Two-for-One Water Exchange Program with RRBWSD whereby CLWA can recover one acre-foot of water for each two acre-feet CLWA delivered to RRBWSD (less losses). CLWA delivered 15,602 AF to the program in 2011, delivered another 3,969 AF in 2012 and, after program losses, has about 9,500 AF of recoverable water. Up to this entire amount may be recovered in a single year when requested by CLWA and when SWP exchange water is available from RRBWSD.[39] For a single dry year it was assumed that this supply would not be available to CLWA. For the multiple-dry year periods, it was assumed that the entire amount would be accessible and used sometime during the dry-year period, so the average annual supply during that period would be one fourth of the total available for the four-year period, and one third for the three-year period, through 2021.

CLWA also entered into a ten-year Two-for-One Water Exchange Program with the West Kern Water District (WKWD) in Kern County and CLWA delivered 5,000 AF in 2011, resulting in a recoverable total of 2,500 AF. In 2014, 2,000 AF of water was withdrawn from this exchange program leaving a balance of 500 AF. Up to this entire amount may be recovered in a single

[39] Descriptions of the water exchange programs are based on the 2015 UWMP, Section 3.4.5.

year when requested by CLWA and when SWP exchange water is available from WKWD. For a single dry year it was assumed that this supply would not be available to CLWA. For the multiple-dry year periods, it was assumed that the entire amount would be accessible and used sometime during the dry-year period, so the average annual supply during that period would be one fourth of the total available for the four-year period, and one third for the three-year period, through 2021.

As another source of imported water supply, CLWA executed a long-term transfer agreement for 11,000 AFY with BVWSD and RRBWSD. These two districts joined together to develop a program that provides both a firm water supply and a water banking component. Both districts are member agencies of the Kern County Water Agency (KCWA), a SWP contractor and both districts have contracts with KCWA for SWP Table A Amounts. The supply is based on existing long-standing Kern River water rights held by BVWSD, and is delivered by exchange of the two districts' SWP Table A supplies or directly to the California Aqueduct via the Cross Valley Canal. This water supply is firm; that is, the total amount of 11,000 AFY is available in all water year types based on the Kern River water right. CLWA began taking delivery of this supply in 2007 as shown in Table 3-3 of the 2015 UWMP.[40]

As another source of imported supply, in 2008, CLWA entered into the Yuba Accord Agreement, which allows for the purchase of water from the Yuba County Water Agency through DWR to 21 SWP contractors (including CLWA) and the San Luis and Delta-Mendota Water Authority. Yuba Accord water comes from north of the Delta, and the water purchased under this agreement is subject to losses associated with transporting it through the Delta. These losses can vary from year to year, depending on Delta conditions at the time the water is transported. Under the agreement, an estimated average of up to 1,000 AFY of non-SWP supply (after losses) is available to CLWA in dry years, through 2025. Under certain hydrologic conditions, additional water may be available to CLWA from this program. CLWA received 445 AF from this source in 2014.[41]

These groundwater banking, exchange, and imported supply programs allow CLWA to firm up the imported water component in the Santa Clarita Valley by storing surplus SWP and other water in wet years in groundwater basins outside the Santa Clarita Valley. This allows recovery and importation of that water as needed in dry years to maintain a greater overall amount of imported water to be used conjunctively with local groundwater, further supporting the sustainable use of local groundwater at the rates in the groundwater operating plan. For further information in response to drought conditions, please refer to the WSA, **Section 4.0**, Water Shortage Contingency Planning Analysis.

As noted above, conjunctive use is the purposeful integrated use of surface water and groundwater supplies to maximize water supply from the two sources. CLWA and the local

[40] Description of the Long-Term Transfer Agreement with BVWSD and RRWSD is based on the 2015 UWMP, Section 3.2.2.1.

[41] Description of the Yuba Accord Agreement is based on the 2015 UWMP, Section 3.2.2.3

retail water agencies, including SCWD, have been conjunctively utilizing local groundwater and imported surface water since the initial importation of SWP water in 1980. The groundwater banking, exchange, and other water supply programs described above allow CLWA to firm up the imported water component of conjunctive use in the Valley by storing surplus SWP and other water, in wet years, in groundwater basins outside the Valley. This allows recovery and importation of that water as needed in dry years to maintain a greater overall amount of imported surface water to be used conjunctively with local groundwater, further supporting the sustainable use of local groundwater at the rates in the groundwater operating plan.

Written Contracts or Other Proof of Supplies

The following is a list of major reports, studies, agreements, and other actions pertinent to the establishment of dry-year supply rights in the Santa Clarita Valley. The "short title" for each document is provided below and described in further detail in Section 5.0, References.

- SWP Final Delivery Capability Report, July 2015.
- 2015 Santa Clarita Valley Water Report, June 2016.
- Agreement between Rosedale-Rio Bravo Water Storage District and CLWA for a Water Banking and Exchange Program, November 15, 2005.
- 2003 Point of Delivery Agreement among DWR, CLWA and Kern County Water Agency (Semitropic Groundwater Storage Program) DWR, et al. February 13, 2004.
- 2004 CLWA/Semitropic Groundwater Storage Program Letter Agreement. CLWA, et al. January 15, 2004.
- 2002 Point of Delivery Agreement among DWR, CLWA and Kern County Water Agency (Semitropic Groundwater Storage Program), DWR, et al. December 19, 2002.
- 2002 CLWA/Semitropic Groundwater Storage Program Letter Agreement. CLWA, et al. October 9, 2002.
- 2011 Amendment No. 1 to October 9, 2002 Letter Agreement (CLWA/Semitropic Water Storage District), extending term to October 9, 2022. April 13, 2011.
- 2011 Amendment No. 1 to January 15, 2004 Letter Agreement (CLWA/Semitropic Water Storage District), extending term to January 20, 2024. April 13, 2011.

Permits/Approvals or Other Necessary Regulatory Approvals

The primary dry-year supply documents that have received state or local approvals are listed below:

- 2015 UWMP, June 2016.
- Rosedale-Rio Bravo Water Storage District Water Banking and Exchange Program EIR, certified by CLWA on October 19, 2005.

- Groundwater Banking Project (Semitropic Groundwater Banking Program) Negative Declaration, December 2003, and all resolutions and other final actions by CLWA.
- Buena Vista/Rosedale-Rio Bravo Water Banking and Recovery Program. Final EIR September 2002.
- Semitropic Groundwater Banking Project, 1994, EIR (SCH No. 1993072024), as supplemented by the Semitropic Stored Water Recovery Unit Supplemental EIR, 2000 (SCH No. 199031100).
- Groundwater Banking Project (Semitropic Groundwater Banking Program) Negative Declaration, August 2002, and all resolutions and other final actions by CLWA.

2.4 Recycled Water

CLWA and the purveyors recognize that recycled water is an important and reliable source of additional water that should be pursued as an integral part of the Valley's water supply portfolio. Recycled water enhances reliability in that it provides an additional source of supply and allows for more efficient utilization of groundwater and imported water supplies. Draft Recycled Water Master Plans for the CLWA service area were completed in 1993 and 2002. These master plans considered various factors affecting recycled water sources, supplies, users and demands so that CLWA could develop a cost-effective recycled water system within its service area. In 2007, CLWA completed CEQA analysis of the 2002 Recycled Water Master Plan (RWMP). This analysis consisted of a Programmatic EIR covering the various phases for a recycled water system as outlined in the RWMP. The Programmatic EIR was certified by the CLWA Board in March 2007. CLWA is in the process of updating the RWMP based on recent developments affecting recycled water sources, supplies, uses and demands. Portions of the draft updated RWMP were made public in connection with the 2015 UWMP process, and the updated RWMP is currently scheduled to be finalized by October 2016, with a new Programmatic EIR completed by December 2016.

CLWA has constructed Phase I of the 2002 RWMP (Kennedy/Jenks 2002), which is designed to deliver up to 1,700 AFY of water to the VWC service area (Phase 1 as constructed currently delivers about 450-500 AFY). Deliveries of recycled water began in 2003 for irrigation water supply at a golf course and in roadway median strips. In 2015, recycled water deliveries were 450 AF. Phase 2 is planned to expand recycled water use within Santa Clarita Valley.

Recycled water is available from two existing water reclamation plants operated by the Santa Clarita Valley Sanitation District of Los Angeles County (SCVSD). The primary sources of wastewater to the Saugus and Valencia WRPs are domestic. Both plants are tertiary treatment facilities and produce high quality effluent. A third Valley reclamation plant, the Newhall Ranch WRP, is proposed as part of the Newhall Ranch project. A fourth Valley reclamation plant, the Vista Canyon Water Factory, is proposed as a part of the Vista Canyon Project. Waste Discharge Requirements and Water Recycling Requirements for the Vista Canyon Water Factory were issued by the Los Angeles Regional Water Quality Control Board issued on June 9, 2016.

Overall, the current projections estimate that after discharging an instream flow requirement of recycled water to the Santa Clara River to protect aquatic species and habitat, up to 17,400 AF of recycled water would be available for beneficial reuse on golf courses, landscaping and other non-potable uses, as set forth in the 2015 UWMP. The majority of recycled water uses are projected to be landscape and golf course irrigation, both of which have high demands in the summer and low demands in the winter. In optimizing the customers served to eliminate the need to provide a backup supply of potable water in the summer, an anticipated 10,054 AFY is planned to be served in 2050. Refer to Section 4.4 and Table 4.3 of the 2015 UWMP for additional detail.

No recycled water is proposed to be used on the Sand Canyon Plaza site; and, therefore, SCWD is not relying on recycled water as a water source for the Project. If recycled water were to become available in the future for use on the Sand Canyon Plaza site, it would be used for non-potable purposes such as landscape irrigation and in accordance with all applicable and relevant regulatory requirements. Although not part of the Sand Canyon Plaza water supplies, recycled water rights add to the overall water supply availability and reliability in the Santa Clarita Valley as further discussed below.

Effluent from the Valencia and Saugus WRPs has historically been discharged to the Santa Clara River (SCR) and must comply with the Upper Santa Clara River Chloride Total Maximum Daily Limit (TMDL) for chloride established by the Los Angeles Regional Water Quality Control Board (LARWQCB). The SCVSD prepared a Chloride Compliance Facilities Plan (Facilities Plan) and Final Environmental Impact Report (FEIR) to meet dual objectives of reducing chloride and increasing the use of recycled water to help offset demands of potable water in the Santa Clarita Valley.

The production, discharge, distribution, and use of recycled water are subject to federal, state and local regulations and can be affected by court decisions. A specific example of how recycled water supplies can be affected by legal and regulatory factors is the recent litigation filed against the SCVSD in *Affordable Clean Water Alliance v. Santa Clarita Valley Sanitation District of Los Angeles* (Los Angeles County Superior Court Case No. BS145869) and *Affordable Clean Water Alliance v. Santa Clarita Valley Sanitation District of Los Angeles* (Los Angeles County Superior Court Case No. BS161742). In those cases the plaintiff alleged that the SCVSD did not adequately analyze whether the amount of recycled water discharged from the Valencia WRP to the SCR would avoid significant environmental impacts to aquatic species and habitat in the SCR. In related decisions issued March 9, 2016 and June 2, 2016 the Los Angeles Superior Court determined that the FEIR requires additional detail and ruled that the SCVSD cannot take further action on its modified chloride compliance project until it completes the additional environmental review.
Section 4.4 of the 2015 UWMP discusses the importance of recycled water and the critical role it has the potential to play in the Santa Clarita Valley. While the trial court decisions above affect the ability of CLWA and the retail water providers to specify at this time exactly how much recycled water will be available from the Valencia WRP, it appears reasonably likely that supplies will be available from that facility once a recycled water discharge amount to the SCR is

established according to further environmental and public review. Furthermore, Table 4-3 of the 2015 UWMP shows that planned recycled water supplies from the Newhall Ranch WRP and the Vista Canyon Water Factory, which will not require discharge to the SCR, will be available to meet a considerable portion of the total projected long-term recycled water demands. As explained in Section 4.4 of the 2015 UWMP, even if recycled water supplies from the Valencia WRP and/or other local WRPs are not available in the amounts identified in Table 4-3 of the 2015 UWMP to meet potential uses because of regulatory or other constraints, other sources of supply available to CLWA and the water purveyors as provided in the 2015 UWMP would be utilized to meet non-potable demands until such time as recycled water supplies may become available.

2.5 Groundwater

2.5.1 Overview And Applicable Plans And Studies

As previously noted, SCWD provides water service with a mix of groundwater and imported water to residential and commercial land uses in portions of the Santa Clarita Valley in northern Los Angeles County. CLWA performs a wholesale function, contracting for water supplies from the SWP and other imported sources, treating those supplies in its Rio Vista and Earl Schmidt Treatment Plants, and delivering the supplies to the four retail purveyors for service to end-use customers. SCWD's own water system includes 14 wells in the alluvial aquifer, about 340 miles of mainline, and 13 imported water connections to CLWA's system by which SCWD receives SWP water purchased from CLWA.

Historically, the primary source of water supplies for the Santa Clarita Valley was groundwater pumped from a two-aquifer system — the alluvium (also referred to as the alluvial aquifer) and Saugus Formation. The alluvium generally underlies the Santa Clara River and its tributary drainages, and the Saugus Formation underlies practically the entire upper Santa Clara River area. This groundwater basin, generally beneath the Santa Clarita Valley, is identified in DWR's Bulletin 118 as the Santa Clara River Valley Groundwater Basin, East Subbasin (Basin No. 4-4.07). As discussed herein, since 1980, the Santa Clarita Valley groundwater supplies have been supplemented by importing SWP supplies to serve demand in the Santa Clarita Valley.

Groundwater Basin. The basin area encompasses about 654 square miles. The Santa Clara River and its tributary drainages flow intermittently within the basin area. The principal tributaries in the Santa Clarita Valley are Castaic Creek, San Francisquito Creek, Bouquet Creek, and the South Fork of the Santa Clara River. In addition to tributary inflow, the Santa Clara River receives treated wastewater discharge from the Saugus and Valencia WRPs, which are operated by the SCVSD.

The alluvium generally underlies the Santa Clara River and its tributary drainages to maximum depths of about 200 feet. The alluvium and its tributary drainages have a total area of approximately 16,410 acres (or about 25.6 square miles).

Groundwater within the alluvium occurs under unconfined (water table) conditions. Therefore, the amount of groundwater in storage is constantly changing and is strongly influenced by local rainfall and recharge (highly variable factors in southern California). The amount of groundwater in storage within the alluvium has varied considerably over the past approximate 60 to 70 years as the local climate has experienced periods of higher than average rainfall (wet years) and lower than average rainfall (dry years).

The Saugus Formation underlies a large portion of the Santa Clara River Valley area of Los Angeles County, to depths from approximately 1,500 feet to about 5,000 feet. The Saugus Formation's total surface area is approximately 37,390 acres (or about 58.42 square miles

Groundwater in both the alluvium and Saugus Formation is recharged from several sources. The alluvium is recharged chiefly by infiltration of runoff waters in the Santa Clara River and its tributaries, with additional natural recharge from percolation of rainfall to the Valley floor and subsurface inflow. Additional recharge is from percolation of irrigation water applied to urban landscaping and reclaimed water discharged into the Santa Clara River from upstream WRPs.

Recharge to the Saugus Formation is primarily from infiltration of rainfall on the exposed formation and percolation of water from the overlying alluvium.[42] Discharge from the aquifer system is through pumping for municipal supply and agricultural irrigation purposes and outflow to the Santa Clara River in the western portion of the basin.[43]

Basin Yield. The groundwater basin's yield is based on the concept that pumping can vary from year-to-year within operational ranges that are based on long-term historic pumping records and groundwater modeling data. This operational yield allows for increased groundwater use in dry periods and increased recharge during locally wet periods, thereby collectively assuring that the basin is adequately replenished through various wet/dry cycles.

Initial analyses and reports supporting the basin yield were completed by Richard C. Slade, a consulting engineer with expertise in groundwater hydrology. In 2002, Slade completed the 2001 Update report,[44] which updated the analysis of the hydrogeologic conditions of the alluvial and Saugus Formation aquifer systems from his earlier reports.[45] The 2001 Update report included the following findings relative to groundwater supply:

(a) Analysis of historical groundwater levels and production indicates that there have been no conditions that would be illustrative of groundwater overdraft;

(b) The utilization of operational yield (as opposed to perennial yield) as a basis for managing groundwater production would be more applicable in

[42] DWR Bulletin 118.

[43] DWR Bulletin 118.

[44] Slade 2002.

[45] Slade 1986 (Alluvium); Slade 1988 (Saugus Formation).

this basin to reflect the fluctuating utilization of groundwater in conjunction with SWP and other imported water supplies;

(c) The operational yield of the alluvium would typically be 30,000 to 40,000 afy for wet and normal rainfall years, with an expected reduction into the range of 30,000 to 35,000 afy in dry years; and

(d) The operational yield of the Saugus Formation would typically be in the range of 7,500 to 15,000 afy on a long-term basis, with possible short-term increases during dry periods into a range of 15,000 to 25,000 afy, and up to 35,000 afy if dry conditions continue for multiple years.

Operating experience over the past 50 years has shown that pumping from the alluvium in the range of 30,000 to 40,000 AFY can be sustained without any long-term adverse effects on groundwater levels or storage. Modeled projections of alluvial groundwater response to the same range of pumping over a 78-year period of representative local hydrologic conditions (precipitation, streamflow, etc.) also show that such pumping can be sustained without any long-term adverse effects. Modeled projections of Saugus Formation response to pumping in the range of 7,500 to 15,000 AFY in most years, infrequently increased to 15,000 AF or 35,000 AF in multiple dry years, the latter to partially offset anticipated decreases in deliveries of imported water in such dry years, show that such pumping will cause short-term localized drawdown of groundwater levels during higher dry-year pumping, but that the basin will rapidly recover (recharge) during periods of normal (7,500 to 15,000 AFY) pumping

Groundwater Operating Plan. As noted above, neither SCWD nor the other purveyors have specific adjudicated groundwater rights or specific limitations on the amound of groundwater they respectively can produce from the basin. In practice, as discussed below, SCWD accesses the available groundwater supplies pursuant to appropriative rights and in accordance with a groundwater operating plan developed by SCWD, CLWA, and other retail water purveyors in the Santa Clarita Valley, which is supported by a numerical groundwater flow model of the basin.

The groundwater operating plan was developed by CLWA and the retail purveyors over the past 15 years to meet water demands (municipal, agricultural, and small domestic), while maintaining the basin in a sustainable condition (e.g., no long-term depletion of groundwater or interrelated surface water). As stated, the groundwater operating plan is based on the concept that pumping can vary from year-to-year to allow increased groundwater use in dry periods and increased recharge during wet periods. This assures that the groundwater basin is adequately replenished through various wet/dry cycles. The operating yield parameters have been quantified as ranges of annual pumping volumes to capture year-to-year pumping fluctuations in response to both hydrologic conditions and customer demand.

The on-going work of the groundwater operating plan has produced three important reports. The first report, dated April 2004, documents the construction and calibration of the groundwater

flow model for the Santa Clarita Valley.[46] The second report, dated August 2005, presents the modeling analysis of the CLWA/retail water purveyor groundwater operating plan for the Valley, and concludes that the plan will not cause detrimental short or long-term effects to the groundwater and surface water resources in the Valley and, therefore, the plan is a reliable, sustainable component of water supply for the Valley.[47] The most recent report[48], an updated analysis of the basin presents the modeling analysis of the current groundwater operating plan, including restoration of contaminated wells for municipal supply after treatment and also presents a range of potential impacts deriving from climate change considerations. All those results and an analysis of groundwater sustainability are reflected in the recent 2015 UWMP for the Santa Clarita Valley. The primary conclusion of the modeling analysis is that the groundwater operating plan will not cause detrimental short or long term effects to the groundwater and surface water resources in the Valley and is therefore sustainable. The Santa Clarita Valley's groundwater operating plan is summarized below in **Table 4**, Groundwater Operating Plan for the Santa Clarita Valley. The plan addresses both the alluvium and Saugus Formation.

Table 4
Groundwater Operating Plan for the Santa Clarita Valley

Aquifer	Groundwater Production (af)			
	Normal Years	**Dry Year 1**	**Dry Year 2**	**Dry Year 3**
Alluvium	30,000 to 40,000	30,000 to 35,000	30,000 to 35,000	30,000 to 35,000
Saugus	7,500 to 15,000	15,000 to 25,000	21,000 to 25,000	21,000 to 35,000
Total	**37,500 to 55,000**	**45,000 to 60,000**	**51,000 to 60,000**	**51,000 to 70,000**

Source: 2009 Basin Yield Update, 2015 UWMP (Table 3-5), 2015 Santa Clarita Valley Water Report (Table 3-1).

The opeating plan for the alluvial aquifer involve pumping in a given year, based on local hydrologic conditions in the eastern Santa Clara River watershed. Pumping ranges between 30,000 and 40,000 afy during normal/average and above-normal rainfall years. However, due to hydrogeologic constraints in the eastern part of the basin, pumping is reduced to between 30,000 and 35,000 afy after the first dry year and the multiple locally-dry years thereafter.

The total (municipal and agricultural) groundwater pumping amounts for the alluvial aquifer presented in **Table 5**, Historical Groundwater Production, slightly exceed the Operating Plan ranges for pumping in normal and dry years from 2010 through 2014. However, closer examination of the data indicates that the municipal component of alluvial pumping has been consistent with the Operating Plan for normal years (2010, 2011, and 2012 with an average of about 25,600 af compared to 25,850 af that was simulated for the normal year Operating Plan in the 2009 Basin Yield Report) and dry years (2013 and 2014 with an average of about 23,060 af

[46] CH2MHill, April 2004 & CH2MHill, August 2005.

[47] CH2MHill, et al., August 2005.

[48] Luhdorff and Scalmanini, et al. 2009.

compared to 23,025 af that was simulated for the dry year Operating Plan in the 2009 Basin Yield Report). The inclusion of alluvial pumping by agriculture and private pumpers, however, has resulted in alluvial pumping that slightly exceeded the upper end of the Operating Plan range by about 2,000 to 3,000 af from 2010 through 2013. The slight exceedance in the Operating Plan range, however, has not impacted the sustainable use of alluvial groundwater in the basin because the exceedance in alluvial pumping by agriculture is in the western portion of the basin where the alluvial aquifer is able to sustain higher levels of groundwater pumping without exhibiting any long term adverse impacts on groundwater levels. It is anticipated that pumping from the alluvial aquifer for agricultural purposes will decline over time and be more consistent with Operating Plan estimates. The operating plan for the Saugus Formation involves pumping in a given year and is tied directly to the availability of other water supplies, particularly from the SWP. During normal/average year conditions within the SWP system, Saugus pumping ranges between 7,500 and 15,000 afy. Planned dry-year pumping ranges between 15,000 and 25,000 afy during a drought year and can increase to between 21,000 and 25,000 afy if SWP deliveries are reduced for two consecutive years and between 21,000 and 35,000 afy if SWP deliveries are reduced for three or four consecutive years. Such pumping is followed by periods of reduced (average-year) pumping, at rates between 7,500 and 15,000 afy, to further enhance the effectiveness of natural recharge processes that cause groundwater levels and storage volumes to recover after the higher pumping during dry years. The 2015 UWMP provides historical and projected groundwater pumping broken down by retail water purveyor. The 2015 UWMP is the applicable and most current water management plan for the Santa Clarita Valley, and constitutes the best available water management planning data for the Santa Clarita Valley. Please refer to **Table 5**, Historical Groundwater Production, and **Table 6**, Projected Groundwater Production (Normal Year), for pertinent groundwater usage data based on the 2015 UWMP.

TABLE 5

RECENT HISTORICAL GROUNDWATER PRODUCTION (AF)[a]

Santa Clara River Valley East Subbasin

	2011	2012	2013	2014	2015
SCWD	12,979	13,148	10,370	6,723	7,558
Alluvium	10,195	10,192	7,262	4,220	4,597
Saugus Formation[b]	2,784	2,956	3,108	2,503	2,961
LACWWD 36	0	794	811	1238	973
Alluvium	0	0	0	0	0
Saugus Formation	0	794	811	1238	973
NCWD	7,605	6,712	5,240	5,232	4,828
Alluvium	3,216	2,631	1,405	1,383	1,131
Saugus Formation	4,389	4,081	3,835	3,849	3,697
VWC	13,040	13,072	13,358	21,419	16,534
Alluvium	12,775	12,770	12,764	19,080	13,605
Saugus Formation	265	302	594	2,339	2,929
Total Purveyor	**33,624**	**33,726**	**29,779**	**34,612**	**29,893**
Alluvium	**26,186**	**25,593**	**21,431**	**24,683**	**19,333**
Saugus Formation	**7,438**	**8,133**	**8,348**	**9,929**	**10,560**
Agricultural and Other[c]	15,550	16,032	16,151	12,885	12,079
Alluvium	14,562	15,108	15,461	12,213	11,359
Saugus Formation	988	924	690	672	720
Total Basin	**49,174**	**49,758**	**45,930**	**47,497**	**41,972**
Alluvium	**40,748**	**40,701**	**36,892**	**36,896**	**30,692**
Saugus Formation	**8,426**	**9,057**	**9,038**	**10,601**	**11,280**
Groundwater Fraction of Total Municipal Water Supply	**52%**	**48%**	**41%**	**51%**	**55%**

Source: 2015 UWMP Table 3-6

Notes:

(a) Data From 2014 Santa Clarita Valley Water report (June 2015) and recorded amounts for 2015.

(b) Represents pumping from Saugus 1 and Saugus 2 wells.

(c) Includes agricultural and other small private well pumping.

TABLE 6

PROJECTED GROUNDWATER PRODUCTION (NORMAL YEAR) (AF)[a]

Basin Name	**Groundwater Pumping (AF)**						
	2020	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
Santa Clara River Valley East Subbasin							
Purveyor							
Alluvium[b]	**26,100**	**28,100**	**29,100**	**31,100**	**31,100**	**31,100**	**31,100**
Saugus Formation	**10,675**	**10,675**	**10,675**	**10,675**	**10,675**	**10,675**	**10,675**
Total Purveyor	**36,775**	**38,775**	**39,775**	**41,775**	**41,775**	**41,775**	**41,775**
Agricultural and Other[c]							
Alluvium	12,500	10,500	9,500	7,500	7,500	7,500	7,500
Saugus Formation	1,800	1,800	1,800	1,800	1,800	1,800	1,800
Total Agricultural and Other	14,300	12,300	11,300	9,300	9,300	9,300	9,300
Basin							
Alluvium	**38,600**	**38,600**	**38,600**	**38,600**	**38,600**	**38,600**	**38,600**
Saugus Formation	**12,475**	**12,475**	**12,475**	**12,475**	**12,475**	**12,475**	**12,475**
Total Basin	**51,075**	**51,075**	**51,075**	**51,075**	**51,075**	**51,075**	**51,075**

Source: 2015 UWMP Table 3-7
Notes:

(a) Includes both existing and planned pumping. A breakdown of both existing and planned pumping by individual purveyors is shown in Appendix C. The distribution of pumping does not represent a formal allocation of water resources among the retail purveyors.

(b) Alluvium pumping by VWC assumes a portion of Newhall Land and Farming agricultural production is shifted to VWC. The total shift is 7,000 AFY, with 2,000 AFY occurring between 2015 and 2020 and the remaining 5,000 AFY occurring between 2020 and 2035.

(c) Agricultural and other small private well pumping, including Newhall Land, Robinson Ranch Golf Course, Wayside Honor Rancho, Valencia Golf Course, and Whittaker-Bermite.

Groundwater Management Plan. As part of legislation authorizing CLWA to provide retail water service to individual municipal customers, Assembly Bill (AB) 134 (2001) included a requirement that CLWA prepare a Groundwater Management Plan (GWMP) in accordance with the provisions of Water Code Section 10753, which was originally enacted by AB 3030. This legislation has since been superseded by the passage of the Sustainable Groundwater Management Act (SGMA) in 2014, however, the existing GWMP will be in effect until a Groundwater Sustainability Plan (GSP) or alternative plan is submitted to DWR by 2022. The implementation and compliance with the SGMA is currently being discussed among CLWA, the retail purveyors and other entities in the basin. The general contents of the GWMP were outlined in 2002, and a detailed plan was adopted in 2003 to satisfy the requirements of AB 134. The plan both complements and formalizes a number of existing water supply and water resource planning and management activities in CLWA's service area, which effectively encompasses the East Subbasin of the Santa Clara River Valley Groundwater Basin. Notably, the GWMP also includes a basin-wide monitoring program, the results of which provide input to annual reporting on water supplies and water resources in the Basin, as well as input to assessment of Basin yield for water supply as described herein. Groundwater level data from the existing groundwater monitoring program is reported to DWR as part of SBX7-6 implementation (California Statewide Groundwater Elevation Monitoring [CASGEM]). CLWA and the purveyors have executed an MOU to jointly perform as the monitoring entity for CASGEM for the basin. Available groundwater level data for the CASGEM program is submitted twice a year. CLWA and the water purveyors will continue to provide groundwater level data consistent with the CASGEM program.

The GWMP contains four management objectives, or goals, for the Basin including (1) development of an integrated surface water, groundwater and recycled water supply to meet existing and projected demands for municipal, agricultural and other water uses; (2) assessment of groundwater basin conditions to determine a range of operational yield values that use local groundwater conjunctively with supplemental SWP supplies and recycled water to avoid groundwater overdraft; (3) preservation of groundwater quality, including active characterization and resolution of any groundwater contamination problems and (4) preservation of interrelated surface water resources, which includes managing groundwater to not adversely impact surface and groundwater discharges or quality to downstream basin(s).

Prior to preparation and adoption of the GWMP, a local Memorandum of Understanding (MOU) process among CLWA, the retail water purveyors and United Water Conservation District (UWCD) in neighboring Ventura County, downstream of the East Subbasin of the Santa Clara River Valley, had produced the beginning of local groundwater management, now embodied in the GWMP. Prepared and implemented in 2001, the MOU was a collaborative and integrated approach to several of the aspects of water resource management included in the GWMP. As a result of the MOU, the cooperating agencies integrated their respective database management efforts and continued to monitor and report on the status of Basin conditions, as well as on geologic and hydrologic aspects of their respective parts of the overall stream-aquifer system.

Following adoption of the GWMP, the water suppliers developed and utilized a numerical groundwater flow model for analysis of groundwater basin yield and for analysis of extraction and containment of groundwater contamination. The results of those basin yield and contamination analyses, most recently updated in 2009 by Luhdorff and Scalmanini Consulting Engineers and GSI Water Solutions, Inc. (LSCE & GSI, 2009), are bases for the amounts and allocations of groundwater supplies in the 2015 UWMP and this WSA.

The adopted Groundwater Management Plan includes 14 elements intended to accomplish the basin management objectives listed above. In summary, the plan elements are:

- Monitoring of groundwater levels, quality, production and subsidence;
- Monitoring and management of surface water flows and quality;
- Determination of basin yield and avoidance of overdraft;
- Development of regular and dry-year emergency water supply;
- Continuation of conjunctive use operations;
- Long-term salinity management;
- Integration of recycled water;
- Identification and mitigation of soil and groundwater contamination, including involvement with other local agencies in investigation, cleanup, and closure;
- Development and continuation of local, state and federal agency relationships;
- Groundwater management reports;
- Continuation of public education and water conservation programs;
- Identification and management of recharge areas and wellhead protection areas;
- Identification of well construction, abandonment, and destruction policies; and
- Provisions to update the groundwater management plan.

Work on a number of the GWMP elements had been ongoing for some time prior to the formal adoption of the GWMP, and expanded work on implementation of the GWMP will continue on an ongoing basis and are anticipated to be included in the SGMA GSP or SGMA alternative plan. Subsequent analyses of the groundwater basin are reflected in the current 2015 UWMP. Another important aspect of the GWMP was completion of the 2005 Basin Yield Report. The primary determinations made in that report were that: (1) both the alluvial aquifer and the Saugus Formation are sustainable sources at production levels outlined in the operational plan; (2) the yields are not overstated and will not deplete or "dry up" the groundwater basin; and (3) there is no need to reduce the yields shown in the prior UWMP. Additionally, the 2005 Basin Yield Report concluded that neither the alluvial aquifer nor the Saugus Formation is in an overdraft condition, or projected to become overdrafted.

Basin Yield Update. In April 2009, the purveyors in Santa Clarita Valley determined that an updated analysis was needed to further assess groundwater development potential and possible augmentation of the CLWA/purveyor groundwater operating plan.

One objective of the 2009 Basin Yield Update was to evaluate the planned utilization of groundwater by the Santa Clarita Valley purveyors, while considering potential impacts on traditional supplemental water supplies from the SWP, and recognizing ongoing pumping by others for agricultural and other private water supply. This objective also included the sustainability of the groundwater resources and the physical ability to extract groundwater at desired rates. Another objective of the 2009 Basin Yield Update was to investigate and describe potential impacts of expected climate change on the groundwater basin and its yield.

The 2009 Basin Yield Update analyzed, with the numerical groundwater flow model, two groundwater operating plans: (a) 2008 Operating Plan to reflect currently envisioned pumping rates and distribution throughout the Valley, including fluctuations through wet/normal and dry years, to achieve a desired amount of water supply that, in combination with anticipated supplemental water supplies, can meet existing and projected water demands in the Valley; and (b) potential Operating Plan that envisions potentially increased utilization of groundwater during both wet/normal and dry years.

The 2009 Basin Yield Update determined that the 2008 Operating Plan would not cause detrimental short- or long-term effects to the groundwater and surface water resources in the Valley and, therefore, is sustainable. Consistent with actual operating experience and empirical observations of historical basin response to groundwater pumping, the modeling analysis indicated that the 2008 Operating Plan would be expected to have local difficulty in achieving the amount of alluvial pumping called for in the eastern end of the basin during locally dry periods. This condition is particularly evident if several decades of predominantly below-normal rainfall years were to occur in the future such as occurred during much of the five decades from the mid-1920s through the mid-1970s. In other words, while the basin as a whole can sustain the pumping encompassed in the 2008 Operating Plan, local conditions in the alluvium in the eastern end of the basin can be expected to repeat historical groundwater level declines during dry periods, necessitating a reduction in desired alluvial aquifer pumping due to decreased well yield and associated actual pumping capacity. The modeling analysis also indicated that reductions in pumping from the alluvial aquifer can be made up by redistributing pumping in an equivalent amount in other parts of the basin without disrupting basin-wide sustainability or local pumping capacity. For the Saugus Formation, the modeling analysis indicated that the aquifer can sustain the pumping encompassed in the 2008 Operating Plan.

Model simulations were conducted to validate alluvial aquifer pumping redistribution assumptions. Model simulations of the 2008 Operating Plan, with pumping redistribution, indicate that westerly redistribution of 1,600 afy of alluvial pumping from the eastern end of the basin would help during dry conditions. The model simulation also showed that affected pumping in the east end of the basin, about 4,500 afy, could be redistributed to other areas of the basin with minimal impact on groundwater levels. In this case, total alluvial pumping in the

basin could remain near the upper end of the 2008 Operating Plan range of 30,000 to 35,000 afy. Conversely, absent any additional efforts to redistribute pumping, the total alluvial pumping capacity during extended dry periods would likely fall toward the lower end of the 2008 Operating Plan range (toward 30,000 afy).

In summary, based on the combination of historical experience and modeled basin conditions, the groundwater operating plan for the local groundwater supply is to operate alluvial pumping in the 30,000 to 40,000 afy range through average/normal water year conditions. In recognition of local conditions that reduce well yields in the eastern end of the alluvium during dry conditions, the groundwater operating plan for the alluvium includes reducing pumping into the range of 30,000 to 35,000 afy in dry periods. The operating plan for the Saugus Formation is primarily to retain its significant storage for intermittent dry year supply; thus, the long-term operating plan is to retain pumping in the 7,500 afy to 15,000 afy range for most years, with increased pumping to 15,000 af in a single dry year, further increased to 25,000 afy or 35,000 afy when dry conditions continue through multiple dry years.

Factors Affecting Availability of Groundwater Supplies. Three primary factors affect the availability of groundwater supplies under the groundwater operating plan. They are: (1) sufficient source capacity (wells and pumps); (2) sustainability of the groundwater resource to meet pumping demand on a renewable basis; and (3) addressing impacted well capacity from known contamination, or provisions for treatment in the event of contamination. All three factors are discussed below, and are addressed in further detail in the 2015 UWMP, Section 5, Water Quality, and the 2015 UWMP, Appendix C.

2.5.2 Alluvial Aquifer

Based on a combination of historical operating experience and updated groundwater modeling analyses, the alluvial aquifer can supply groundwater on a long-term sustainable basis in the overall range of 30,000 to 40,000 afy, with a probable reduction in dry years to a range of 30,000 to 35,000 afy. Both of those ranges include about 15,000 afy of alluvial pumping for current agricultural and other non-municipal water uses. The dry year reduction is a result of practical constraints in the eastern part of the basin, where lowered groundwater levels in dry periods have the effect of reducing pumping capacities in that shallower portion of the aquifer. Over time, directly related to the rate of urban development and corresponding decrease in agricultural land use, the amount of alluvial pumping for agricultural water supply is expected to decrease, with an equivalent increase in the amount of alluvial pumping for municipal water supply. On an overall basis, alluvial pumping is intended to remain within the sustainable ranges in the groundwater operating plan.

Adequacy of Well Capacity and Supply. For municipal water supply, the three retail water purveyors with alluvial wells (NCWD, SCWD, and VWC) have a combined pumping capacity from active wells of nearly 42,000 gallons per minute (gpm), which translates into a current full-time alluvial source capacity of approximately 67,000 afy. Alluvial pumping capacity from all the active municipal supply wells is summarized in **Table 8**, Active Municipal Groundwater

Source Capacity — Alluvial Aquifer Wells. In terms of adequacy and availability, the combined active alluvial groundwater source capacity of municipal wells, approximately 67,000 afy is more than sufficient to meet the current and potential future municipal, or urban, component of groundwater supply from the alluvium, which in the near term is about 26,000 afy of the total planned alluvial pumping of 38,600 AFY which is within the 30,000 to 40,000 afy operating yield. The higher individual and cumulative pumping capacities are primarily for operational reasons (i.e., to meet daily and other fluctuations from average day to maximum day and peak hour system demands). The balance of alluvial pumping in the operating plan is for agricultural and other non-municipal uses including small, private pumping. In terms of adequacy and availability, the combined active Saugus groundwater source capacity of municipal wells of 30,000 AFY is more than sufficient to meet the planned use of Saugus groundwater in normal years of 7,500 to 15,000 AFY. This existing active capacity is also more than sufficient to meet near term dry-year water demands, in combination with other sources. In order to supplement long term dry-year supplies, additional Saugus Formation wells are planned to be operational within the next three years. With the restored capacity of VWC Well 201 (see discussion below) and the additional planned replacement and new Saugus wells, the total dry year combined capacity will increase from about 30,700 AFY to about 48,570 AFY. This combined capacity is more than sufficient to meet the multiple dry-year municipal production target of 34,000 AFY.

TABLE 7
ACTIVE MUNICIPAL GROUNDWATER SOURCE CAPACITY - ALLUVIAL AQUIFER WELLS

	Well	Pump Capacity (gpm)	Max. Annual Capacity (AF)	Simulated Basin Yield Analysis Usage[a] Normal Year (AF)	Dry Year (AF)
NCWD					
	Castaic 1	650	1,040	350	250
	Castaic 2	450	720	100	100
	Castaic 4	270	430	100	0
	Castaic 7	1,450	2,330	300	200
	Pinetree 1	300	480	150	0
	Pinetree 3	550	880	350	300
	Pinetree 4	400	640	300	200
	Pinetree 5	550	880	300	200
	NCWD Subtotal	*4,620*	*7,400*	*1,950*	*1,250*
SCWD					
	Clark	600	960	700	700
	Guida	1,000	1,610	1,300	1,200
	Honby	950	1,530	1,000	700
	Lost Canyon 2	850	1,370	300	0
	Lost Canyon 2A	825	1,330	300	0
	Mitchell 5A	950	1,530	500	200
	Mitchell 5B	700	1,120	800	300
	N. Oaks Central	1,275	2,050	850	700
	N. Oaks East	950	1,530	800	700
	N. Oaks West	1,300	2,290	800	700
	Sand Canyon	1,050	1,690	200	0
	Santa Clara	1,500	2,420	1,200	1,200
	Sierra	1,500	2,420	1,100	700
	Valley Center	1,200	1,930	1,200	1,200
	SCWD Subtotal	*14,650*	*23,780*	*11,050*	*8,300*
VWC[b]					
	Well D	1,050	1,690	880	880
	Well E-15	1,400	2,250	800	800
	Well N	1,250	2,010	650	650
	Well N7	2,500	4,030	1,160	1,160
	Well N8	2,500	4,030	1,160	1,160
	Well Q2	1,200	1,930	1,100	1,100
	Well S6	2,000	3,220	1,000	1,000
	Well S7	2,000	3,220	500	500
	Well S8	2,000	3,220	500	500
	Well T7	1,200	1,930	750	750
	Well U4	1,000	1,610	800	800
	Well U6	1,250	2,010	800	800
	Well W9	800	1,290	1,000	1,000
	Well W10	1,500	2,420	800	800
	Well W11	1,000	1,610	950	950
	VWC Subtotal	*22,650*	*36,470*	*12,850*	*12,850*
Total Purveyors		**41,920**	**67,650**	**25,850**	**22,400**

Source: 2015 UWMP Table 3-8

Notes:

(a) Usage amounts are simulated results from the updated Basin Yield analysis (LSCE & GSI, 2009) for Purveyors' existing wells.

(b) Does not include new or improved wells that may be required to accommodate the planned shift of pumping from existing agricultural use to municipal use.

Sustainability. Until 2003, the long-term renewability of alluvial groundwater was empirically determined based on approximately 60 years of pumping and groundwater level records. Generally, those long-term observations show stability in groundwater levels and storage, with some dry-period fluctuations in the eastern part of the basin. As discussed above, those empirical observations have been complemented by the development and application of a numerical groundwater flow model, which was used to simulate aquifer response to the planned operating ranges of pumping.

To examine the yield of the alluvium, or the sustainability of the alluvium on a renewable basis, the original groundwater flow model was used to examine the long-term projected response of the aquifer to pumping for municipal and agricultural uses in the 30,000 to 40,000 afy range under average/normal conditions and in the 30,000 to 35,000 afy range under locally dry conditions as documented in the 2005 Basin Yield Report.

To examine the response of the entire aquifer system, the original model also incorporated pumping from the Saugus Formation in accordance with the normal (7,500 to 15,000 afy) and dry year (15,000 to 35,000 afy) groundwater operating plan for that aquifer. The model was run over a 78-year hydrologic period, which was selected from actual historical precipitation to examine a number of hydrologic conditions expected to affect both groundwater pumping and groundwater recharge.

Simulated alluvial aquifer response to the range of hydrologic conditions and pumping stresses was essentially a long-term repeat of the historical conditions that have resulted from similar pumping over the last several decades. The resultant response included: (a) generally constant groundwater levels in the middle to western portion of the alluvium, and fluctuating groundwater levels in the eastern portion as a function of wet and dry hydrologic conditions; (b) variations in recharge that directly correlate with wet and dry hydrologic conditions; and (c) no long-term decline in groundwater levels or storage.

In 2008, an updated analysis was undertaken (2009 Basin Yield Update) to assess groundwater development potential and possible augmentation of the groundwater operating plan. In addition to extending the model's calibration, the updated analysis simulated the historical record of climate and incorporated SWP deliveries for those climatic conditions for an 86-year period from 1922 through 2007, in place of the original model's 78-year hydrologic period that had been developed prior to the availability of combined climate and SWP deliveries since 1922.

While the overall groundwater operating plan ranges in the updated basin yield analysis did not change from the original operating plan, prevailing land-use conditions and the specific distributions of pumping were found to produce the same kinds of resultant alluvial groundwater conditions as concluded to be sustainable in 2005: (a) no long-term declines in alluvial groundwater levels and storage; (b) multi-year periods of locally declining, or locally increasing, groundwater levels in response to cycles of below-normal and above-normal precipitation; and (c) short-term impacts on pumping capacities in eastern parts of the basin due to declining

groundwater levels during dry periods, addressed by some redistribution of pumping (reflected in pumping volumes included in the 2015 UWMP) and by conformance with the dry-period reduction in alluvial pumping in the groundwater operating plan.

Based on the results of the updated basin yield analysis (2009 Basin Yield Update), the groundwater operating plan is considered to reflect ongoing sustainable groundwater supply rates. In the alluvium, sustainability was found via explicit simulation of pumping in wet/normal years near the upper end of the groundwater operating plan range. In dry years, sustainability was found via explicit simulation of pumping throughout the dry-year groundwater operating plan range, with the additional consideration that some pumping redistribution (reflected in the 2015 UWMP) be implemented to achieve pumping rates near the upper end of the dry-period range.

2.5.3 Saugus Formation

Based on historical operating experience and updated groundwater modeling analyses, the Saugus Formation can supply water on a long-term sustainable basis in a normal range of 7,500 to 15,000 afy. Intermittent increases to 25,000 to 35,000 af in dry years has not been historically experienced operationally, however, investigations of the Saugus Formation, historical groundwater level monitoring data, and numerical modeling indicate that the Saugus Formation can be pumped sustainably at these higher rates, followed by reductions in pumping in wet to normal years. The dry-year increases, based on limited historical observation and modeled projections, demonstrate that the 25,000 to 35,000 AFY is a small amount of the large groundwater storage in the Saugus Formation and these amounts can be pumped over a relatively short (dry) period. This would be followed by recharge (replenishment) of that storage during a subsequent normal-to-wet period when the Saugus Formation pumping would be reduced to 7,500 to 15,000 AFY.

Adequacy of Well Capacity and Supply. For municipal water supply, the three retail water purveyors with Saugus wells (NCWD, SCWD, and VWC) have a combined pumping capacity from active wells of nearly 17,000 gpm, which translates into a full-time Saugus source capacity of about 27,000 afy. Additionally, LACWWD 36 completed a Saugus Well with a pumping capacity estimated at 2,000 gpm and an annual capacity of 3,220 AFY. Saugus pumping capacity from all the existing active municipal supply wells, as well as the restored, replacement, and planned new supply wells is summarized in **Table 8**, Municipal Groundwater Source Capacity — Existing, Restored, and Planned Saugus Formation Wells. The active wells include two Saugus wells contaminated by perchlorate (Saugus 1 and 2), which have been returned to service in 2010 with treatment facilities for use of the treated water for municipal supply under permit from the California Department of Public Health (DPH), now the DDW. The active wells also include the most recent replacement well, VWC's Well 207, in a non-impacted part of the basin. Also included in Table 7 is VWC Well 201 which was impacted by the detection of perchlorate and removed from service in 2010. VWC Well 201 is expected to be restored to service by 2017 with treatment facilities for use of the treated water for municipal supply under a permit from

DDW (formerly DPH), similar to the Saugus 1 and Saugus 2 wells. VWC Well 201 provides a total of 2,400 gpm of pumping capacity (for a dry-year production capacity of 3,775 AFY, and is shown in Table 7 under Restored Wells. Following the shutdown of VWC Well 201, VWC also reduced pumping from a nearby well (VWC 205) to minimize potential influences on perchlorate migration. VWC Well 205 was voluntarily removed from service in 2012 when perchlorate was detected at concentrations below reporting levels. VWC Well 205 will be returned to service with VWC Well 201. Because VWC Well 205 was voluntarily removed from service, it is considered an active existing well in Table 7.

Table 7 includes an adjusted operating scenario to account for anticipated pumping from the Saugus Aquifer Extraction Pilot Program. This system is currently being installed and is expected to be operational in 2017 with an annual extraction of 800 AFY from the Saugus Formation. The extracted groundwater will be treated for perchlorate removal and returned to the Santa Clara River pursuant to system-related permits. It is anticipated that a portion of the treated water may recharge the alluvium, especially in dry periods when there may be available vacated aquifer storage. Plans between CLWA, the retail purveyors, and Whittaker-Bermite to utilize the treated water for municipal purposes have not been fully explored at this time due to an absence of conveyance facilities to transport the treated water to the municipal distribution system.

TABLE 8
MUNICIPAL GROUNDWATER SOURCE CAPACITY - EXISTING, RESTORED, AND PLANNED SAUGUS FORMATION WELLS[a]

Well		Pump Capacity (gpm)	Max. Annual Capacity (AF)	Simulated Basin Yield Analysis Usage[b]		Adjusted Basin Yield Usage[c]	
				Normal Year (AF)	Dry Year (AF)	Normal Year (AF)	Dry Year (AF)
Existing Wells							
LACWWD36							
	Palmer	2,000	3,220	500	500	500	500
NCWD							
	12	2,400	3,870	1,762	2,488	1,587	2,488
	13	2,250	3,630	1,762	2,488	1,587	2,488
	NCWD Subtotal	*4,650*	*7,500*	*3,525*	*4,975*	*3,175*	*4,975*
VWC							
	159	500	800	50	50	25	50
	160	2,000	3,220	0	0	0	0
	205[d]	2,700	4,355	350	4,040	150	4,040
	206	2,500	4,030	260	3,500	145	3,500
	207	2,500	4,030	260	3,500	150	3,500
	VWC Subtotal	*10,200*	*16,435*	*920*	*11,090*	*470*	*11,090*
SCWD							
	Saugus 1	1,100	1,772	1,650	1,650	1,650	1,650
	Saugus 2	1,100	1,772	1,650	1,650	1,650	1,650
	SCWD Subtotal	*2,200*	*3,545*	*3,300*	*3,300*	*3,300*	*3,300*
	Total Existing	**19,050**	**30,700**	**8,245**	**19,865**	**7,445**	**19,865**
Restored Well							
	VWC 201[d]	2,400	3,870	3,230	3,775	3,230	3,775
Replacement Well							
	Future #1	2,500	4,000	0	4,000	0	4,000
Planned Wells							
	Future #2, #3, #4[e]	6,200	10,000	0	6,360	0	5,560
	Total Purveyors	**30,150**	**48,570**	**11,475**	**34,000**	**10,675**	**33,200**

Source: 2015 UWMP, Table 3-9

Notes:

(a) The quantities of groundwater extracted by existing or planned well capacity will vary depending on operating conditions experienced such as the quantity of an individual retailers existing capacity. This is illustrated in the more detailed supply and demand tables in Appendix C, which show differing mixes of pumping from existing and planned wells. However, overall pumping remains within the groundwater basin yields.

(b) Usage amounts are results from simulations in the updated Basin Yield analysis (LSCE & GSI, 2009) and from analysis conducted in 2014 for Well 201 restoration and

containment investigation. Dry-year production represents maximum dry year production (Dry Year 3 in Table 3-5).

(c) Simulated results adjusted to reduce Purveyor pumping by projected 800 AFY of Whittaker-Bermite pumping for perchlorate treatment.

(d) VWC Well 201 is planned to be returned to service by 2017 with treatment under a permit from the DDW. The operation of VWC Well 205 was temporarily suspended on a voluntary basis until Well 201 is returned to service.

(e) A portion of production from Future well #2 would be used to restore Saugus Formation well capacity lost due to perchlorate impacts, and the remainder for new additional dry year capacity.

In terms of adequacy and availability, the combined active Saugus groundwater source capacity of municipal wells of 27,000 afy is more than sufficient to meet the planned use of Saugus groundwater in normal years of 7,500 to 15,000 afy. This currently active capacity is more than sufficient to meet water demands, in combination with other sources.

In order to supplement near term dry-year supplies, VWC Well 201 could be brought back into service utilizing treatment technologies currently being used in the Santa Clarita Valley. In October 2005, VWC Well Q2 was restored to service, six months after perchlorate was detected in the well in April 2005. In addition, in 2005, initially there was no third-party funding available to pay for the cost of putting the well back into service; VWC negotiated a separate agreement with the Whittaker-Bermite property owners to pay for the cost. Also in May 2007, the perchlorate litigation settlement agreement was executed, which established a "Rapid Response Fund" to immediately treat any additional wells impacted by perchlorate.

With the restored capacity of VWC Well 201, the Saugus Formation groundwater source capacity of municipal wells would be increased to about 31,000 afy. To accommodate longer-term dry-year needs, additional Saugus wells are planned by 2020 and expect to have a combined capacity of 10,000 afy, increasing the Saugus Formation dry-year production capacity to approximately 41,000 afy.

Sustainability. Historically (and continuing to the present), pumping from the Saugus Formation has been fairly low in most years, with one four-year period of increased pumping up to about 15,000 afy that had short-term water level impacts but produced no long-term depletion of the substantial groundwater storage in the Saugus. As discussed above, those empirical observations have been complemented by the development and application of the numerical groundwater flow model, which has been used to examine aquifer response to the groundwater operating plan for pumping from both the alluvium and the Saugus, and to examine the effectiveness of pumping for both contaminant extraction and control of contaminant migration within the Saugus Formation. Some of the production capacity that was previously impaired by contamination has been restored and that pumping is reflected in the 2015 UWMP as part of the Saugus groundwater operating plan and pumping distribution.

To examine the yield of the Saugus Formation, or its sustainability on a renewable basis, the original groundwater flow model was used to examine long-term projected response to pumping from both the alluvium and the Saugus over the 78-year period of hydrologic conditions that incorporated alternating wet and dry periods as have historically occurred (see 2005 Basin Yield Report). For the Saugus Formation, simulated pumping included the then-planned restoration of historic pumping from the perchlorate-impacted wells.

The originally simulated Saugus Formation response to the ranges of operating plan pumping under assumed recurrent historical hydrologic conditions was consistent with actual experience under smaller pumping rates: (a) short-term declines in groundwater levels and storage near pumped wells during dry-period pumping; (b) recovery of groundwater levels and storage after

reduction of dry-period pumping; and (c) no long-term decreases or depletion of groundwater levels or storage. The combination of actual experience with Saugus recharge and pumping up to about 15,000 afy, complemented by modeled projections of aquifer response that showed long-term utility of the Saugus at 7,500 to 15,000 afy in normal years and rapid recovery from higher pumping rates during intermittent dry periods, was the basis for concluding that the Saugus Formation could be considered a sustainable water supply source to meet the Saugus portion of the groundwater operating plan.

As stated above, in 2008, an updated basin yield analysis was undertaken to assess groundwater development potential and possible augmentation of the groundwater operating plan (see 2009 Basin Yield Update). After extended and updated model calibration and incorporation of extended historical records, the overall groundwater operating plan and specific distribution of Saugus pumping were found to produce the same kinds of resultant Saugus groundwater conditions as concluded to be sustainable in 2005: (a) long-term stability of groundwater levels, with no sustained declines; (b) groundwater levels slightly below historic Saugus levels, in response to greater long-term utilization of the Saugus; and (c) maintenance of sufficiently high Saugus groundwater levels to ensure achievement of planned individual pumping capacities. Thus, the groundwater operating plan for the Saugus, with fairly low pumping in wet/normal years and increased pumping through dry periods, is concluded to reflect sustainable groundwater supply rates.

2.5.4 Existing and Planned Groundwater Pumping

Impacted Well Capacity. Groundwater produced by SCWD consistently meets groundwater standards set by USEPA and the DDW. However, the 2015 UWMP explains that perchlorate has been a constituent of concern with respect to the groundwater quality since it was detected in four wells in the eastern part of the Saugus Formation in 1997.

The 2015 UWMP also discusses organic compounds, specifically Volatile Organic Compounds (VOCs) [Trichloroethylene (TCE) and Tetrachloroethylene (PCE)] that have been found in low levels below the Maximum Contaminant Level (MCL) in groundwater in the Santa Clarita Valley. As discussed in Section 5.2.7 of the 2015 UWMP, low levels (below MCL) of TCE and PCE have been found in groundwater in the Santa Clarita Valley including Wells Saugus 1 and 2.

The retail purveyors operate their groundwater supply wells under operating permits from the DDW. These operating permits include operational goals for water quality constituents in drinking water. In the case of TCE and PCE, the operational goal is at or below the Detection Limit for Purposes of Reporting (DLR), which is less than the State drinking water MCL for these constituents. These constituents have been occasionally detected at concentrations above the DLR, but there have never been any detections above the regulatory standard MCL. Therefore, the retail water purveyors are in compliance with the Safe Drinking Water Act and the DDW-issued operating permits. In addition, groundwater pumped from supply wells is put into the Valley-wide drinking water pipeline system which blends groundwater with imported water

supplies. Mixing of the groundwater with imported water supplies further reduces the concentration of any TCE and PCE in the water provided to users. Based on the low levels of detection and blending practices, VOCs are not anticipated to impact groundwater supply availability or reliability.

As discussed in Section 5.2.1 of the 2015 UWMP, certain municipal wells were impacted by perchlorate and thus represented a temporary loss of well capacity within the CLWA service area. Six wells were ultimately taken out of service upon the detection of perchlorate including four Saugus wells and two alluvial wells. All have been either: (a) abandoned and replaced; (b) returned or returning to service with the addition of treatment facilities that allow the wells to be used for municipal water supply as part of the overall water supply systems permitted by the DDW; or (c) will be replaced under an existing perchlorate litigation settlement agreement. The restored wells (two Saugus wells and one alluvial well), one Saugus well which is currently being restored, and the replacement wells (one Saugus and one alluvial well), which collectively restore much of the temporarily lost well capacity, are now included as parts of the active municipal groundwater source capacities delineated in **Tables 7** and 8, above. Also discussed in the 2015 UWMP, additional wells will be drilled to fully restore the impacted well capacity, thus restoring the operational flexibility that existed prior to the perchlorate being discovered.

In August 2010, VWC's Well 201, located downgradient from the former Whittaker-Bermite site and downgradient from the initially impacted Saugus 1, Saugus 2, and V157 wells, had detectable concentrations of perchlorate and the well was taken out of service.

VWC already has completed significant updated groundwater modeling analysis of the Saugus Formation, and is currently working with expert consultants to restore Well 201 as a drinking water source through installation of wellhead treatment. In addition, a process with DDW already is underway to add wellhead treatment to Well 201 so it can be returned to service. VWC currently plans to complete installation of wellhead treatment so that Well 201 is operable by 2017, and DDW is working with VWC to accomplish this goal.

In addition, VWC's updated groundwater modeling analysis has shown that returning Well 201 to service is an important component of the strategy to contain perchlorate in the Saugus Formation. In particular, pumping Well 201 on a sustained, continuous basis at close to its full capacity (up to 2,400 gallons per minute), with an allowance for routine maintenance down-time each year, can provide hydraulic containment of perchlorate present in the Saugus Formation groundwater west of the Whittaker-Bermite site, and provide protection of downgradient production wells that currently are not impacted by perchlorate.

Alluvial Aquifer. In terms of adequacy and availability, the combined active alluvial groundwater source capacity of municipal wells, approximately 67,000 afy, are more than sufficient to meet the current and potential future municipal, or urban, component of the groundwater supply from the alluvium, which in the near-term is about 26,000 AFY of the total planned alluvial pumping of 38,600 AFY which is within the 30,000 to 40,000 AFY basin yield. The higher individual and cumulative pumping capacities are primarily for operational reasons

(i.e., to meet daily and other fluctuations from average day to maximum day and peak hour system demands).

Saugus Formation. In terms of adequacy and availability, the combined active Saugus groundwater source municipal well capacity of 30,000 AFY is more than sufficient to meet the planned use of Saugus groundwater in normal years of 7,500 to 15,000 afy. This existing active capacity is also more than sufficient to meet near term dry-year water demands, in combination with other sources. In order to supplement long term dry-year supplies, additional Saugus Formation wells are planned to be operational within the next three years.

With the restored capacity of VWC Well 201 and the additional planned replacement and new Saugus wells, the total dry year combined capacity will increase from about 30,700 AFY to about 48,570 AFY. This combined capacity is more than sufficient to meet the multiple dry-year municipal production target of 34,000 AFY.

2.5.5 Private and Agricultural Groundwater Pumping

The 2015 UWMP and the groundwater operating plan recognize ongoing alluvial pumping for both municipal and agricultural water supply, as well as other small private domestic and related pumping.

In addition to private agricultural production, the 2015 Santa Clarita Valley Water Report indicates that total small private pumping is likely well within the 500 AFY estimates in recent annual Santa Clarita Valley Water Reports, or about 1 percent of typical alluvial aquifer pumping by the purveyors and other known private well owners (*e.g.*, agricultural pumpers) combined. Thus, small private wells create a pumping demand that is essentially negligible at the scale of the regional model.

The 2015 UWMP provides estimates of the projected groundwater use by each of the retail purveyors during normal year scenarios. (See 2015 UWMP, Table 3-7.) As discussed above and in the 2015 UWMP, CLWA and the purveyors recognize that these estimates of projected groundwater use are subject to adjustment based on various factors and conditions occurring from time-to-time, and do not constitute an allocation of groundwater from the local basin.

Written Contracts or Other Proof of Supplies

The following is a list of major reports, studies, agreements, and other actions pertinent to the establishment of groundwater supplies in the Santa Clarita Valley. The documents show the absence of existing or projected overdraft in both the alluvial aquifer and Saugus Formation.

- 2015 Regional Urban Water Management Plan for the Santa Clarita Valley, June 2016.
- 2015 Santa Clarita Valley Water Report, June 2016.
- Analysis of Groundwater Supplies and Groundwater Basin Yield, Upper Santa Clara River Groundwater Basin, East Subbasin, Los Angeles County, California, August 2009
- Calibration Update of the Regional Groundwater Flow Model for the Santa Clarita Valley, Santa Clarita, California, August 2005.
- Analysis of Near-Term Groundwater Capture Areas for Production Wells Located Near the Whittaker-Bermite Property (Santa Clarita, California) December 21, 2004.
- Analysis of Perchlorate Containment in Groundwater near the Whittaker-Bermite Property, Santa Clarita, California, December 2004.
- Regional Groundwater Flow Model for the Santa Clarita Valley: Model Development and Calibration, April 2004.
- Groundwater Management Plan - Santa Clara River Valley Groundwater Basin, East Subbasin, December 2003.
- California's Groundwater, Bulletin 118 - Update 2003, October 2003.

Permits/Approvals or Other Necessary Regulatory Approvals

The primary groundwater-related documents that have received local approval are listed below:

- 2015 UWMP, June 2016. The 2015 UWMP was adopted by CLWA, SCWD, VWC, and NCWD in June 2016 and filed with DWR in accordance with the UWMP Act. The resolutions and other actions memorializing adoption of the 2015 UWMP are on file with the respective agencies and incorporated by reference.
- Groundwater Management Plan - Santa Clara River Valley Groundwater Basin, East Subbasin, December 2003. CLWA adopted the Groundwater Management Plan in December 2003. The resolutions and other actions memorializing adoption of the Groundwater Management Plan by CLWA are on file with CLWA and incorporated by reference.
- CDPH. Water Supply Permit Amendment (CLWA-Saugus Perchlorate Treatment Facility), December 30, 2010.

2.5.6 SB 610 Groundwater Requirements

Water Code section 10910(f) requires a WSA to include specific information describing groundwater resources if the water supply for a proposed project includes groundwater. As discussed above, the Santa Clarita Valley water suppliers have committed to a groundwater operating plan that includes municipal, agricultural, and other smaller uses while maintaining the local groundwater basin in a sustainable condition (e.g., no long term depletion of groundwater or interrelated surface water).In addition to other information and analyses provided in this WSA, the following discussion addresses specific provisions of Water Code section 10910(f).

2.5.6.1 Water Code section 10910(f)(1).

Review of relevant information contained in the Urban Water Management Plan.

The discussion above, along with Section 3 of the 2015 UWMP, Water Resources, and the CLWA Groundwater Management Plan, provide a comprehensive description and analysis of the local alluvial and Saugus Formation aquifer systems, their respective yields, and historical and projected production consistent with the groundwater operating plan. As authorized by SB 610, these descriptions, analyses, and conclusions are incorporated herein by reference.

2.5.6.2 Water Code section 10910(f)(2)

Description of any groundwater basin or basins from which the proposed project will be supplied, including information concerning adjudication and overdraft.

As explained above, the Santa Clarita Valley Basin (containing the alluvial aquifer and Saugus Formation) is about 22 miles long east to west and 13 miles wide. The alluvial aquifer has an estimated storage capacity of about 161,000 af of water and approximately 1.65 million af of potentially usable groundwater is present from depths of 300 to 2,500 feet in the Saugus Formation (Slade 2002).

The groundwater basin is unadjudicated, meaning that neither SCWD nor the other purveyors have specific adjudicated water rights or specific limitations that dictate their water supply. However, in practice, and as further discussed in this WSA, SCWD accesses the available

groundwater supplies pursuant to its appropriative rights and in accordance with a groundwater operating plan developed by CLWA, SCWD, and other retail water purveyors in the Santa Clarita Valley, and complemented by 2005 and 2009 basin yield analyses based on a numerical groundwater flow model of the basin. These studies have concluded that neither aquifer system is in overdraft and that the purveyor's groundwater operating plan as described in the Groundwater Management Plan is sustainable.[49]

The groundwater operating plan was developed by CLWA and the retail purveyors over the past 15 years to meet water demands (municipal, agricultural, and small domestic), while maintaining the basin in a sustainable condition (e.g., no long-term depletion of groundwater or interrelated surface water). As stated, the groundwater operating plan is based on the concept that pumping can vary from year-to-year to allow increased groundwater use in dry periods and increased recharge during wet periods. This assures that the groundwater basin is adequately replenished through various wet/dry cycles. The operating yield concept has been quantified as ranges of annual pumping volumes to capture year-to-year pumping fluctuations in response to both hydrologic conditions and customer demand.

The 2015 UWMP also contains an extensive description and analysis of the groundwater basin in the Santa Clarita Valley. Refer to Section 3 of the 2015 UWMP and the CLWA Groundwater Management Plan, and Appendix I, which are incorporated herein by reference.

2.5.6.3 Water Code section 10910(f)(3).

Description and analysis of the amount and location of groundwater pumped by the public water system for the past five years from any groundwater basin from which the proposed project will be supplied.

The 2015 UWMP provides historical groundwater pumping for the past five years, broken down by retail water purveyor and by aquifer. Please refer to Table 5, above, Recent Historical Groundwater Production for a summary of the recent historical production for the past five years for SCWD and all municipal purveyors. SCWD's pumping ranged from 4,220 AF (2014) to 10,195 AF (2011) from the alluvial aquifer, and 2,503 AF (2014) to 3,108 AF (2013) from the Saugus Formation during the past five years.

During the past five years, total pumping from the alluvial aquifer from municipal, agricultural and other pumping ranged from 30,692 AF (2015) to 40,748 AF (2011) with an average of 37,185 AFY, which is within the 30,000 to 40,000 AFY basin yield. During the past five years, total pumping from the Saugus Formation from municipal, agricultural and other pumping ranged from 8,426 AF (2011) to 11,280 AF (2015) with an average of 9,680 AFY, which is within the long-term sustainable pumping range of 7,500 to 15,000 AFY.

[49] See, e.g., Basin Yield Update, 2009.

2.5.6.4 Water Code section 10910(f)(4).

Description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system from any basin from which the proposed project will be supplied.

Refer to Table 3-7 in the 2015 UWMP for a summary of the range of the projected groundwater production by SCWD and the other Santa Clarita Valley retail water purveyors. (Also refer to **Table 6**, above, for the same information.) The tables depict groundwater pumping from the Alluvium and Saugus Formation from 2020 through 2050. Please also refer to Figure 3-2 and Figure 3-3 of the 2015 UWMP for the alluvial and Saugus well locations within the basin. All such referenced information from the 2015 UWMP is incorporated herein by reference.

As described in detail throughout this WSA, to ensure sustainability of the basin and groundwater resources, the purveyors have committed that the annual use of groundwater pumped collectively in any given year will not exceed the CLWA/purveyors' groundwater operating plan as described in the updated Basin Yield Study (August 2009), the 2015 UWMP, and as reported annually in the Santa Clarita Valley water reports. A portion of the Project's potable water demand of 389 afy to be met by groundwater produced from the alluvial and Saugus aquifers will be mixed for operations purposes by SCWD.

2.5.6.5 Water Code section 10910(f)(5).

Analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project.

SCWD has determined that the sufficiency of groundwater as part of the combined water supply portfolio necessary to meet the initial and projected water demand associated with the Project was addressed in the 2015 UWMP; therefore, as provided in Water Code section 10910(f)(5), SCWD incorporates by reference the 2015 UWMP's information, analyses, and conclusions concerning the sufficiency of supply in the alluvium in Section 2.5.2; and the sufficiency of supply in the Saugus Formation in Section 2.5.3.

In addition, **Section 2.5**, Groundwater, of this WSA provides information and analyses confirming the sufficiency of the groundwater supply from both the alluvial aquifer and the Saugus Formation. **Subsection 2.5.4**, Existing and Planned Groundwater Pumping, of this WSA also evaluates existing and planned groundwater pumping, including impacted well capacity as a result of the detection of perchlorate within the CLWA service area. Based on that analysis, SCWD has determined that non-impacted groundwater supply as part of its combined water supply portfolio will be sufficient to meet the projected demands associated with the Project in addition to existing and projected demands for groundwater within the CLWA service area during normal, single-dry, and multiple-dry year periods throughout the long-term planning horizon reflected in the 2015 UWMP.

2.5.6.6 Sustainability of Existing Groundwater Supplies and Projected Supplies

Groundwater supplies were evaluated in the Basin Yield Study (August 2009) and reviewed in the 2015 UWMP to determine whether supply projections were realistic and sustainable over varying hydrologic conditions over the long-term projection. The review made the following findings:

1. The alluvial aquifer and the Saugus Formation are reasonable and sustainable sources at the yields represented in the 2015 UWMP over the next 35 years;
2. The yields are not overstated and will not deplete or "dry up" the groundwater basin; and
3. Under the 2015 UWMP, there is no need to reduce the yields for planning purposes.

Additionally, the 2015 UWMP and Basin Yield Study (August 2009) concluded that both aquifers are in good operating condition (not in a condition of overdraft) and are not projected to become overdrafted.

3.0 WATER CONSERVATION

The 2015 UWMP summarizes SCWD's and the other retail purveyors' projected water demands through 2050. The summary includes water demands without conservation, based on the retail purveyors' projected water demands shown in Table 2-2 of the 2015 UWMP, and with conservation, using the requirements described in Senate Bill 7 of Special Extended Session 7 (SBX7-7). SBX7-7 applies to retail water suppliers, and is intended to increase water use efficiency, and meet a 20% per capita reduction in urban water use statewide by 2020.

Table 2-28 of the 2015 UWMP summarizes the retail purveyors' normal year SBX7-7 water demand calculations with and without conservation within the CLWA service area from 2015 through 2050. The demand reductions reflected in Table 2-28 may be achieved through a combination of water conservation measures and the use of recycled water. Note the potable water demand reductions shown in Table 2-22 exceed the requirements of SBX7-7.[50]

In addition, Section 7 of the 2015 UWMP describes the water demand management (conservation) measures implemented by CLWA, SCWD, and the other retail purveyors as part of the effort to reduce water demand in the Santa Clarita Valley. As part of Section 7, SCWD provides a detailed description of its conservation programs, water conservation best management practices, and water demand management measures. Further, the 2015 Santa Clarita Valley Water Report summarizes the water conservation efforts of CLWA and the four retail purveyors in the Santa Clarita Valley. This summary is found in Section 5 of the 2015 Santa Clarita Valley Water Report at pages 45 through 50. All such information is incorporated herein by reference.

Refer to **Section 4.0**, Water Shortage Contingency Planning Analysis, of this WSA for further information with regard to extraordinary drought conditions that have persisted throughout California over the last several years.

[50] Refer to 2015 UWMP , Section 2.7 and Table 2-22.

4.0 WATER SHORTAGE CONTINGENCY PLANNING ANALYSIS

Water supplies may be interrupted or reduced due to a number of factors, such as a drought which limits supplies, an earthquake which damages water delivery or storage facilities, a regional power outage, or a toxic spill that affects water quality. The 2015 UWMP, Section 8, describes how CLWA and the retail water purveyors plan to respond to such water supply outages, reductions, and other emergencies so that customer needs are met adequately, promptly and equitably. To date, CLWA and the retail purveyors have completed Water Shortage Contingency Plans. In addition, prohibitions, penalties, and financial impacts of shortages have been developed by CLWA, SCWD, and the other retail purveyors in the Santa Clarita Valley, and are summarized in Section 8 of the 2015 UWMP.

In preparing this WSA, SCWD has considered the urban water shortage contingency planning analysis set forth in the 2015 UWMP, Section 8, in determining the sufficiency of water supplies for the proposed Project, in addition to all existing and planned future uses in SCWD's service area within the Santa Clarita Valley.

On April 1, 2015, in response to persistent drought conditions and record low snowpack in the Sierra Nevada Mountains, Governor Jerry Brown issued Executive Order B-29-15. The Order directed the State Water Resources Control Board (State Board) to impose restrictions on urban water suppliers to achieve a statewide 25 percent reduction in potable urban water usage through February 2016.

On May 5, 2015, in response to Executive Order B-29-15, the State Board adopted an emergency water conservation regulation requiring urban retail water suppliers to reduce their water production by certain percentages through February 2016 in comparison to 2013 levels.

The State Board established eight tiers for required water use reduction ranging from 8 percent for agencies with low per capita water use to 36 percent for agencies with high per capita water usage. SCWD's required reduction was 32%. CLWA and the retail purveyors increased conservation outreach and programs in order to meet the requirements of emergency regulation.

On February 2, 2016, due to continued drought conditions, the State Board adopted extended and revised emergency regulations to ensure that urban water conservation continues in 2016. The revised regulation also provided credits for certain factors that affect water use such as hotter-than-average climates, population growth, and significant investments in new local drought resilient water sources such as recycled water reuse.

On May 9, 2016, the Governor issued an Executive Order that directed the State Board to adjust and extend its emergency water conservation regulations through the end of January 2017 in recognition of the differing water supply conditions for many communities. On May 31, 2016, the State Board adopted a new Emergency Regulation which is proposed to remain in effect until the end of January 2017. Among other things, the regulation requires urban each urban retail

water supplier to either (1) develop and report an individualized water conservation and reduction standard according to prescribed methodologies, or (2) reduce its total potable water production by the percentage identified as its conservation standard under the previous emergency regulation, subject to potential adjustments. The alternative conservation standard is calculated by comparing the average annual customer demand from 2013 and 2014 to the available supplies in 2017, 2018, and 2019 assuming the three-year hydrology of 2013, 2014, and 2015. Urban retailers must self-certify and file their alternative conservation standards with the State Board. SCWD completed this self-certification and filed it with the State Board on June 22, 2016. The self-certification identified sufficient supply to meet demands, assuming three additional drought years as required by the State Board's regulations. Accordingly, SCWD's Board has rescinded Ordinance No. 43 and adopted a new conservation Ordinance No. 44.[51]

The adopted 2015 UWMP, Section 8, describes how CLWA and the retail purveyors can respond to continuing drought conditions. The reliability planning provisions of the adopted 2015 UWMP, Section 6, also assist CLWA and the retail purveyors in responding to drought conditions, including the severe drought conditions that currently exist.

[51] For further water conservation information, please refer to the 2015 Santa Clarita Valley Water Report (June 2016), Section 5.

5.0 RELIABILITY PLANNING

CLWA, SCWD, and the other retail purveyors in the Santa Clarita Valley have implemented a number of projects that are part of an overall program to provide the facilities needed to ensure reliable imported and local water supplies during dry years. The program involves water conservation, surface and groundwater storage, water transfers and exchanges, water recycling, additional short-term pumping from the Saugus Formation, and increasing CLWA's imported supply. This overall strategy is designed to meet increasing water demands while assuring a reasonable degree of supply reliability. Part of the overall water supply strategy is to provide a blend of groundwater and imported water to area residents to ensure consistent quality and reliability of service. The actual blend of imported water and groundwater in any given year and location in the Santa Clarita Valley is an operational decision and varies over time due to source availability and operational capacity of purveyor and CLWA facilities. The goal is to conjunctively use available water resources so that the overall reliability of water supply is maximized while utilizing local groundwater at a sustainable rate.

The available water supplies and demands for CLWA's service area were analyzed in the 2015 UWMP to assess the region's ability to satisfy demands during the following variable periods: (1) an average water year; (2) single-dry year; and (3) multiple-dry years, which included an assessment of two different multiple-dry year periods: a four-year dry period, and a three-year dry period. The 2015 UWMP summary tables (shown in **Section 6.0**, below) demonstrate that existing and planned supplies are available to meet existing and projected demand under all such conditions for the projected planning period through 2050.

While many of the Santa Clarita Valley's available supply sources have some variability, the variability in SWP supplies has the largest effect on overall supply reliability. In any given year, SWP supplies may be reduced due to dry weather conditions, regulatory restrictions, or other factors. As discussed above, during such an occurrence, the remaining water demands in the CLWA service area are planned to be met by a combination of alternate supplies such as return water from CLWA's accounts in the Semitropic Groundwater Storage Program and the Rosedale–Rio Bravo Water Banking and Exchange Program, deliveries from CLWA's flexible storage account in Castaic Lake Reservoir, local groundwater pumping, short-term water exchanges, and participation in DWR's dry-year water purchase programs.

As stated in the 2015 UWMP, water supply reliability for CLWA, and in turn SCWD and the other retail purveyors within the Santa Clarita Valley, has improved significantly with the development of conjunctive use and groundwater banking. Conjunctive use is the coordinated operation of multiple water supplies to achieve improved supply reliability. During dry periods, or when imported water supply availability is reduced, banked water can be recovered from groundwater storage to replace, or firm up, the imported water supply deliveries. CLWA and the purveyors have been conjunctively utilizing local groundwater and imported water since SWP water was imported to the Santa Clarita Valley beginning in 1980. SWP and other imported

water supplies have supplemented the overall supply of the Santa Clarita Valley, which previously depended solely on local groundwater supplies.

Drought periods may affect available water supplies in any single year and even for a duration that spans multiple consecutive years. Hydrologic conditions vary from region to region throughout the state. Dry conditions in northern California affecting SWP supply may not affect local groundwater and other supplies in southern California, and the reverse situation can also occur (as it did in 2002 and 2003). For this reason, CLWA and the purveyors have emphasized developing a water supply portfolio that is diverse, especially in dry years. Diversity of supply is considered a key element of reliability planning, giving CLWA and the purveyors the ability to draw on multiple sources of supply to ensure reliable service during dry years, as well as during average wet years.[52]

As described above, CLWA has entered into groundwater banking and water exchange programs and has, in aggregate, approximately 140,000 af of recoverable water outside the local groundwater basin, which is available during drought conditions. The CLWA and purveyor reliability planning associated with each water source is discussed in further detail in Chapter 6 of the 2015 UWMP. As discussed above, CLWA and the purveyors have assessed the impact of DWR's 2015 SWP Delivery Capability Report on the CLWA/purveyor water supply, and have determined that current and projected supplies are sufficient to meet the projected demands of the proposed Project in addition to existing and planned future uses through the year 2050 consistent with the 2015 UWMP.

[52] 2015 Santa Clarita Valley Water Report (June 2016), Section ES-6. .

6.0 WATER SUPPLY ASSESSMENT

As discussed above, the projected total water demand for the Project is 389 afy in an average/normal year. Projected water demand is estimated to increase by approximately 10% in a dry year to a total of approximately 428 afy. In accordance with the information and analyses provided throughout this WSA, the water source to be used by SCWD to meet Project demand would be a mix of local groundwater and imported supplies from CLWA.

As discussed in greater detail above, the alluvial aquifer, and the underlying Saugus Formation, are not in overdraft (historically or currently). Based on the 2015 UWMP and the 2015 Santa Clarita Valley Water Report (June 2016), perchlorate in local groundwater supplies does not substantially affect the reliability of the alluvial aquifer or the Saugus Formation. Thus, groundwater remains an available and reliable component of SCWD's water supplies, which will be blended with imported supplies to meet the water demand associated with existing and other planned future land uses within SCWD's service area. As stated previously, SCWD has already accounted for the Sand Canyon Plaza Project's potable water demand as part of its planned future uses in the 2015 UWMP.

To support proposed development, the Sand Canyon Project would be required to construct the necessary infrastructure improvements to accommodate the Project's water demand, in accordance with the City's conditions, County Fire Department and SCWD design requirements. The water system infrastructure would include fire hydrants of the type and location (both on-site and off-site) as determined by the County Fire Department. In addition, the water mains would be sized to accommodate the total domestic and fire flows. The construction of new potable water lines and service connections would be scheduled to minimize water service interruptions to other properties.

A short-term demand for water would occur during the Sand Canyon Plaza Project construction, primarily in association with dust control, concrete mixing, cleaning of equipment, and other related construction activities. These activities would occur incrementally through Project build-out and be temporary in nature. The SCWD would provide water through a construction-metered connection from existing potable lines adjacent to the Project site, and water tankers would deliver water for dust control to the development areas throughout Project construction as needed. In accordance with the information and analyses contained throughout this WSA, SCWD has determined that a sufficient supply of water would be available during Project construction.

6.1 Water Demand

Table 9, Summary of Projected Water Demands, below, summarizes the retail purveyors' projected water demands through 2050. The demands reflected in **Table 9** are from the most recently adopted 2015 UWMP. These demands reflect existing and planned water demands of the four retail purveyors in the Santa Clarita Valley. The demands also account for the water needed to serve the Sand Canyon Plaza Project because, as stated above, SCWD included the

Sand Canyon Plaza Project demand in SCWD's projected water deliveries data provided as part of the adopted 2015 UWMP.

TABLE 9
SUMMARY OF PROJECTED WATER DEMANDS (AF) [(a)(b)(c)(d)(e)]

	2020	2025	2030	2035	2040	2045	2050	Annual Increase
Water Demands								
LACWWD 36[(f)]	2,300	2,700	3,100	3,500	3,900	4,300	4,700	2.5%
NCWD	10,100	10,700	11,200	11,800	12,600	13,400	14,200	1.2%
SCWD	28,400	29,100	29,900	30,800	32,400	33,900	36,000	0.8%
VWC[(g)]	28,100	32,100	36,600	40,000	39,600	39,300	39,000	1.1%
Total Demand	68,900	74,600	80,800	86,100	88,500	90,900	93,900	1.1%

Source: 2015 UWMP, Table 2-2

Notes:

(a) Values rounded to the nearest hundred.

(b) From MWM 2016.

(c) Reflects existing and projected demands in CLWA service area only. CLWA's Annexation Policy requires annexing parties to provide additional fully reliable supplies.

(d) Demands exclude non-purveyor demands. Similarly, supplies evaluated in this UWMP exclude non-purveyor supplies.

(e) Demands include savings from plumbing code and standards and active conservation as assumed in the 2015 WUESP.

(f) LACWWD 36 future demand was based on a growth projection factor and not on land use as was done for the three other purveyors. LACWWD 36 is included for purposes of providing regional completeness; however, it is not required to prepare an UWMP.

(g) Refer to GSI 2016 for detail on specific future developments included in the analysis.

Table 10, SCWD Past, Current, and Projected Metered Water Deliveries (by customer type), below, presents the past, current, and projected water deliveries by customer type for SCWD through 2050.

TABLE 10
SCWD CURRENT AND PROJECTED WATER DELIVERIES BY CUSTOMER TYPE[(a)(b)]

Year	Water Use Sectors	Single-Family Residential	Multi-Family Residential	Commercial	Industrial	Institutional	Irrigation[(c)]	Other	Non-Revenue Water[(d)]	Total
	No. of accounts	23,132	4,713	708	19	111	994	387	-	30,064
2015	Deliveries (AF)	11,978	2,579	974	87	579	3,328	413	1,845	21,783
	No. of accounts	22,900	5,400	1,500	0	100	1,100	300	-	31,300
2020	Deliveries (AF)	12,500	3,600	1,600	400	400	7,800	0	2,100	28,400
	No. of accounts	24,000	5,900	1,700	0	100	1,200	400	-	33,300
2025	Deliveries (AF)	12,300	3,700	1,700	400	400	8,400	0	2,200	29,100
	No. of accounts	25,100	6,500	1,900	0	100	1,300	400	-	35,300
2030	Deliveries (AF)	12,100	3,900	1,900	500	400	8,800	0	2,300	29,900
	No. of accounts	26,200	7,000	2,200	0	200	1,500	400	-	37,500
2035	Deliveries (AF)	12,000	4,100	2,100	500	400	9,300	0	2,400	30,800
	No. of accounts	27,300	7,600	2,400	0	200	1,600	400	-	39,500
2040	Deliveries (AF)	12,100	4,300	2,300	500	500	10,000	0	2,700	32,400
	No. of accounts	28,400	8,200	2,600	100	200	1,700	400	-	41,600
2045	Deliveries (AF)	12,200	4,600	2,500	600	500	10,800	0	2,700	33,900
	No. of accounts	29,600	8,700	2,800	100	200	1,800	500	-	43,700
2050	Deliveries (AF)	12,900	4,900	2,700	600	500	11,500	0	2,900	36,000

Source: 2015 UWMP, Table 2-5

Notes:

(a) Values rounded to the nearest hundred.

(b) 2015 values based on actual use. Projections for 2020 to 2050 from MWM 2016.

(c) A portion of future irrigation demands are projected to be met with recycled water to the extent recycled water supplies are available. (See the discussion in the 2015 UWMP Section 4 and Table 4-3).

(d) NRW may include unbilled authorized consumption as well as water that is "lost" before it reaches the customer. Losses can be real losses (through leaks, sometimes also referred to as physical losses) or apparent losses (for example through theft or metering inaccuracies).

6.2 Water Supplies — Historic and Existing Sources

The SCWD, in conjunction with CLWA, has existing water entitlements, rights, and contracts to meet demand as needed over a 20-year horizon and beyond, and has committed sufficient capital resources and planned investments in various water programs and facilities to serve all of its existing and planned customers. As discussed herein, SCWD also has identified an operational strategy combined with a prudent and flexible management approach to ensure water supply reliability.

In 2015, SCWD's service area-wide demands were 21,783 af, and the total municipal demand for water in the CLWA service area was 54,491af. Based on SCWD's water demand factors, SCWD has estimated that the water demand for the Sand Canyon Plaza Projects 389 afy at build-out in an average/normal year. Projected water demand is estimated to increase by approximately 10% in a dry year to a total of approximately 428 afy.

In addition to the most recently adopted Regional 2015 UWMP, the 2015 Santa Clarita Valley Water Report (June 2016) provides a detailed summary of the local and imported water supplies that have been used to meet water demands in the Santa Clarita Valley over the previous 35-year horizon (1980-2015). The 2015 SCV Water Report also analyzes the historical availability and use of water by each retail purveyor (SCWD, VWC, District #36, and NCWD), and for all agricultural, industrial and other users in the Valley, for the same 35-year horizon.

As shown in **Table 11**, Total Water Supply Utilization from Municipal, Agricultural, and Other Uses (af), since inception of the importation of SWP supplies to the Santa Clarita Valley in 1980, the total annual water demand has increased from about 37,000 af in 1980 to the mid-80,000 afy range through 2005, with a short-term peak of about 92,000 af in 2007, followed by a steady decline in water demand to 66,570 afy in 2015.

Table 11
Total Water Supply Utilization from Municipal, Agricultural, and Other Uses (AF)

Year	Purchased from CLWA		Local Production		Other	Total
	Imported Water[1]	***Treated Groundwater***[2]	***Alluvium***	***Saugus Formation***	***Recycled Water***	
1980	1,126	-	31,463	4,589	-	**37,178**
1981	5,817	-	30,790	4,970	-	**41,577**
1982	9,659	-	21,868	4,090	-	**35,617**
1983	9,185	-	20,286	3,852	-	**33,323**
1984	10,996	-	27,318	4,449	-	**42,763**
1985	11,823	-	25,347	4,715	-	**41,885**
1986	13,759	-	24,205	5,485	-	**43,449**
1987	16,285	-	22,642	5,561	-	**44,488**
1988	19,033	-	21,648	6,928	-	**47,609**
1989	21,618	-	23,721	7,759	-	**53,098**
1990	21,613	-	23,876	8,861	-	**54,350**
1991	7,968	-	27,187	14,917	-	**50,072**
1992	14,898	-	27,591	10,924	-	**53,413**
1993	13,836	-	30,126	10,610	-	**54,572**
1994	14,700	-	33,133	12,025	-	**59,858**
1995	17,002	-	34,464	8,560	-	**60,026**
1996	18,873	-	38,438	8,186	-	**65,497**
1997	23,215	-	39,599	7,745	-	**70,559**
1998	20,266	-	36,648	5,555	-	**62,469**
1999	27,302	-	43,406	3,716	-	**74,424**
2000	32,582	-	39,937	4,080	-	**76,599**
2001	35,369	-	37,589	4,140	-	**77,098**
2002	41,763	-	38,276	5,160	-	**85,199**
2003	44,416	-	33,599	4,207	50	**82,273**
2004	47,205	-	33,757	6,503	420	**87,885**
2005	37,997	-	38,648	6,453	418	**83,516**
2006	40,048	-	43,061	7,312	419	**90,840**
2007	45,151	-	38,773	7,685	470	**92,079**
2008	41,705	-	41,716	6,918	311	**90,650**
2009	38,546	-	39,986	7,678	328	**86,538**
2010	30,578	-	41,159	8,092	336	**80,165**
2011	30,808	2,784	40,748	5,531	373	**80,244**
2012	35,558	2,956	40,701	5,763	428	**85,406**
2013	43,281	3,108	36,892	5,930	400	**89,611**
2014	33,092	2,503	36,896	8,098	474	**81,063**
2015	24,148	2,961	30,692	8,319	450	**66,570**

Source: 2015 Santa Clarita Valley Water Report, Table 2-3

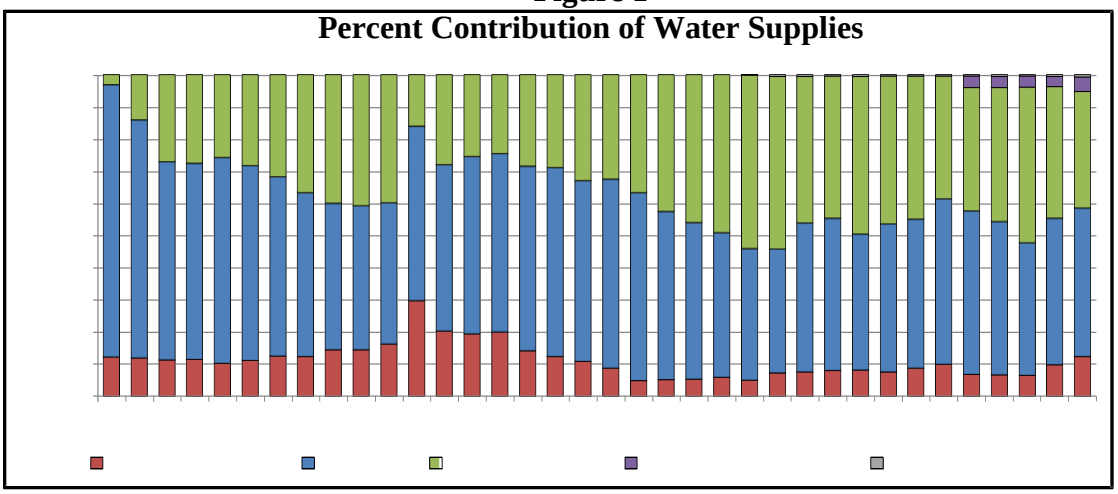
Notes:

[1] *Reflects State Water Project through 2006; includes imported water from State Water Project and Buena Vista WSD Agreement beginning in 2007.*

[2] *In January 2011, CLWA began operation of its Saugus Formation groundwater containment project. After treatment for perchlorate removal, that water was blended with treated imported water and delivered to the Purveyors through the CLWA distribution system.*

Figure 1 graphically illustrates the trends in the utilization of local groundwater and imported water, complimented by the recent addition of recycled water, in the Santa Clarita Valley.

Figure 1
Percent Contribution of Water Supplies



Source: 2015 Santa Clarita Valley Water Report, Table 2-3

1. Reflects State Water Project through 2006; includes imported water from State Water Project and Buena Vista WSD Agreement beginning 2007.

2. In January 2011, CLWA began operation of its Saugus Formation groundwater containment project. After treatment for perchlorate removal, that water was blended with treatment imported water and delivered to the Purveyors through the CLWA distribution system.

Provided below is a summary of water supply and demand projections presented in the 2015 UWMP that also address certain information required under SB 610 for the proposed Sand Canyon Plaza Project. The analyses presented in the following tables verify the availability of water supply for the Sand Canyon Plaza Project, in addition to all existing and planned future uses in the SCWD service area over a 35-year horizon (even though SB 610 only requires a 20-year evaluation) in average/normal years, a dry-year, and in multiple-dry years. Furthermore, while not required by SB 610, as a conservative measure this WSA demonstrates that sufficient water supplies will be available to meet the projected water demands associated with the proposed Project during normal, single-dry, and multiple-dry years over a 35-year horizon, in addition to existing and planned future uses (including agricultural, manufacturing, and industrial uses) throughout the entire Santa Clarita Valley. In addition, while not required by SB 610, as a conservative measure, this WSA includes an assessment of two different multiple-dry year periods: a four-year dry period and a three-year dry period.

6.2.1 Water Supplies — Current and Planned

Table 12 below, summarizes the current and planned water supplies available to the retail purveyors in the Santa Clarita Valley. This table is not intended to be an operational plan for how supplies would be used in a particular year, but rather identifies the complete range of water supplies available under a range of hydrologic conditions. Diversity of supply allows SCWD and the other retail purveyors the option of drawing on multiple sources of supply in response to

changing conditions such as varying climatic conditions (average/normal years, single dry years, multiple dry years), natural disasters, and contamination with substances such as perchlorate.

It is the stated goal of SCWD, CLWA, and the other retail water purveyors to deliver a reliable and high quality water supply for their customers, even during dry periods. Based on conservative water supply and demand assumptions over the next 35 years in combination with conservation of non-essential demand during certain dry years, the water supply plan described in the 2015 UWMP successfully achieves this goal.

The subject of perchlorate contamination and its impact on groundwater supplies is discussed in detail above and extensively addressed in the 2015 UWMP. The source of the contamination is the former Whittaker-Bermite property located in the center of the Santa Clarita Valley and used as a munitions manufacturing facility for over 50 years. Significant progress has been made toward characterizing the extent of perchlorate contamination, along with implementing necessary measures for on-site and off-site containment and treatment. This WSA takes into account the impact of perchlorate on water supply operations in the Santa Clarita Valley, while the planning, design, and construction of perchlorate treatment, containment, and other restoration activities are implemented. For additional information on this topic, please refer to the 2015 Santa Clarita Valley Water Report, dated June 2016, Section 3.5, and the 2015 UWMP, Chapters 3 and 5, all of which discuss the relationship between available water supplies and groundwater quality issues.

TABLE 12
SUMMARY OF CURRENT AND PLANNED WATER SUPPLIES AND BANKING PROGRAMS (AF)[a]

	2015	2020	2025	2030	2035	2040	2045	2050
Existing Supplies								
Existing Groundwater[b]								
Alluvial Aquifer	24,100	24,100	24,100	24,100	24,100	24,100	24,100	24,100
Saugus Formation	7,445	7,445	7,445	7,445	7,445	7,445	7,445	7,445
Total Groundwater	**31,545**	**31,545**	**31,545**	**31,545**	**31,545**	**31,545**	**31,545**	**31,545**
Recycled Water[c]								
Total Recycled	**450**	**450**	**450**	**450**	**450**	**450**	**450**	**450**
Imported Water								
State Water Project[d]	59,000	58,800	58,500	58,300	58,100	58,100	58,100	58,100
Flexible Storage Accounts[e]	6,060	6,060	6,060	4,680	4,680	4,680	4,680	4,680
Buena Vista-Rosedale[f]	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000
Nickel Water - Newhall Land[g]	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607
Yuba Accord Water[h]	1,000	1,000	1,000	-	-	-	-	-
Total Imported	**78,667**	**78,467**	**78,167**	**75,587**	**75,387**	**75,387**	**75,387**	**75,387**
Existing Banking and Exchange Programs								
Rosedale Rio-Bravo Bank[i]	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Semitropic Bank[i]	5,000	5,000	5,000	5,000	5,000	5,000	5,000	-
Semitropic – Newhall Land Bank[i][j]	4,950	4,950	4,950	4,950	4,950	4,950	4,950	4,950
Rosedale Rio-Bravo Exchange[k]	9,500	9,500	-	-	-	-	-	-
West Kern Exchange[k]	500	500	-	-	-	-	-	-
Total Bank/Exchange	**22,950**	**22,950**	**12,950**	**12,950**	**12,950**	**12,950**	**12,950**	**7,950**
Total Existing Supplies	**134,412**	**133,412**	**123,112**	**120,532**	**120,332**	**120,332**	**120,332**	**115,332**
Planned Supplies								
Future Groundwater[l]								
Alluvial Aquifer[m]	-	2,000	4,000	5,000	7,000	7,000	7,000	7,000
Saugus Formation (Restored)[n]	-	3,230	3,230	3,230	3,230	3,230	3,230	3,230
Saugus Formation (New)[o]	-	-	-	-	-	-	-	-
Total Groundwater	**-**	**5,230**	**7,230**	**8,230**	**10,230**	**10,230**	**10,230**	**10,230**
Recycled Water[p]								
Total Recycled	**-**	**565**	**5,156**	**7,627**	**9,604**	**9,604**	**9,604**	**9,604**
Planned Banking Programs								
Rosedale Rio-Bravo Bank[q]	-	7,000	7,000	17,000	17,000	17,000	17,000	17,000
Additional Bank[r]	-	-	-	-	-	-	-	5,000
Total Banking	**-**	**7,000**	**7,000**	**17,000**	**17,000**	**17,000**	**17,000**	**22,000**
Total Planned Supplies	**-**	**12,795**	**19,386**	**32,857**	**36,834**	**36,834**	**36,834**	**41,834**

Source: 2015 UWMP, Table 3-1

Notes:

(a) The values shown under "Existing Supplies" and "Planned Supplies" are projected to be available in average/normal years to CLWA and the retail water purveyors. The values shown under "Existing Banking and Exchange Programs" and "Planned Banking Programs" are the maximum capacity of program withdrawals, and would typically be used only during dry years.

(b) Existing groundwater supplies represent the quantity of groundwater anticipated to be pumped with existing wells. As indicated in Tables 7 and 8, and in Tables 3-4 and 3-5 of the 2009 Groundwater Basin Yield Analysis, individual purveyors may have well capacity in excess of quantities shown in this table. As indicated in 2015 UWMP Table 3-10, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 4.

(c) Existing recycled water is actual use in 2015. CLWA currently has 1,600 AFY under contract.

(d) SWP supplies are based on average deliveries from DWR's 2015 DCR.

(e) Includes both CLWA and Ventura County entities flexible storage accounts. Extended term of agreement with Ventura County entities expires after 2025.

(f) Distribution of Buena Vista Supply reflects (1) 500 AF of supply dedicated to the pending Tesoro Del Valle annexation into CLWA and NCWD beginning in 2020, and (2) 2,500 AF dedicated to the pending Legacy Village annexation into CLWA and VWX beginning 2035. Prior to these demands developing the entire 11,000 AF of this supply would be available to the entire CLWA service area. Should these developments not occur, the water would continue to be available to the entire CLWA service e area. If these developments occur but do not use all of the amounts reserved for them in any year or years, the remaining supply would be available to the entire CLWA service area.

(g) Existing Newhall Land supply committed under approved Newhall Ranch Specific Plan. Assumed to be transferred to CLWA or VWC during Newhall Ranch development, and available for annual purchase prior to that.

(h) Supply shown is amount available in dry periods, after delivery losses. This supply would typically be used only during dry years and is available through 2025.

(i) Supplies shown are annual amounts that can be withdrawn using existing firm withdrawal capacity and would typically be used only during dry years.

(j) Existing Newhall Land supply. Assumed to be transferred to CLWA or VWC during Newhall Ranch development, with firm withdrawal capacity made available to CLWA prior to that.

(k) Supplies shown are totals recoverable under the exchange and would typically be recovered only during dry years.

(l) Planned groundwater supplies represent new groundwater well capacity that may be required by an individual purveyor's production objectives in the Alluvial Aquifer and the Saugus Formation. When combined with existing purveyor and non-purveyor groundwater supplies, total groundwater production remains within the sustainable ranges identified in Table 3-8 of 2009 Groundwater Basin Yield Analysis. As indicated in Table 3-10, existing and planned groundwater pumping remain within the basin operating plan shown on Table 4.

(m) Represents a shift in current agricultural pumping by Newhall Land and Farming to VWC due to the development of Newhall Ranch.

(n) VWC Well 201 is planned to be returned to service by 2017 with treatment under a permit from the DDW.

(o) Up to four new and replacement wells are planned to provide additional dry-year supply and would typically be used only during dry years.

(p) Planned recycled water is total projected recycled water demand from 2015 UWMP Table 4-3 less existing use. Recycled water demand projection is based on implementation of complete build-out system described in the RWMP Update and reflects demands that can cost-effectively be served. Refer to 2015 UWMP Section 4, including Section 4.4, for further discussion and information regarding factors having the potential to affect the reliability of recycled water supplies.

(q) Firm withdrawal capacity under existing Rosedale Rio-Bravo Banking Program to be expanded by 7,000 AFY by 2017 (for a combined total of 10,000 AFY) and an additional 10,000 AFY by 2030.

(r) Additional banking program with firm withdrawal capacity of 5,000 AFY by 2050.

6.2.2 Average/Normal Year Supplies and Demand

Table 13, Projected Average/Normal Year Supplies and Demands, summarizes the water supplies available to meet demands over the 35-year planning period studied in the 2015 UWMP during an average/normal water year. As presented, water supplies are broken down into existing and planned water supply sources, including wholesale SWP water, local supplies, transfers, banking, and other imported water supply programs, and development of additional recycled water supplies. The demands shown in Table 13 include reductions from projected passive conservation savings, both with and without active conservation savings. As shown in **Table 13**, CLWA and the retail purveyors have adequate supplies to meet all service area existing and projected demands during an average/normal year through 2050.

Note also Appendix C of the 2015 UWMP provided additional "retail purveyor" tables reflecting available supply and water demand broken down by each retail purveyor during the same weather conditions (average, single-dry, and three-year and four-year dry periods) and same planning horizon as used in the adopted 2015 UWMP.

Specifically, Appendix C of the 2015 UWMP, Tables C-1 and C-2 respectively reflect the average/normal year existing and planned total water supplies broken down by retail purveyor, and Table C-3 compares average/normal year demands to total supplies by retail purveyor, and shows that in an average year, SCWD's total existing and planned supplies exceed demand from 2020 through 2050. These tables are reproduced in **Appendix 1** to this WSA — with the SCWD demand and supplies yellow highlighted.

TABLE 13
PROJECTED AVERAGE/NORMAL YEAR SUPPLIES AND DEMANDS (AF)

	2020	2025	2030	2035	2040	2045	2050
Existing Supplies							
Existing Groundwater[a]							
Alluvial Aquifer	24,100	24,100	24,100	24,100	24,100	24,100	24,100
Saugus Formation	7,445	7,445	7,445	7,445	7,445	7,445	7,445
Total Groundwater	**31,545**	**31,545**	**31,545**	**31,545**	**31,545**	**31,545**	**31,545**
Recycled Water[b]							
Total Recycled	**450**	**450**	**450**	**450**	**450**	**450**	**450**
Imported Water							
State Water Project[c]	58,800	58,500	58,300	58,100	58,100	58,100	58,100
Flexible Storage Accounts[d]	-	-	-	-	-	-	-
Buena Vista-Rosedale[e]	11,000	11,000	11,000	11,000	11,000	11,000	11,000
Nickel Water - Newhall Land[f]	1,607	1,607	1,607	1,607	1,607	1,607	1,607
Yuba Accord[g]	-	-	-	-	-	-	-
Total Imported	**71,407**	**71,107**	**70,907**	**70,707**	**70,707**	**70,707**	**70,707**
Banking and Exchange Programs[e]							
Rosedale Rio-Bravo Bank	-	-	-	-	-	-	-
Semitropic Bank	-	-	-	-	-	-	-
Semitropic - Newhall Land Bank	-	-	-	-	-	-	-
Rosedale Rio-Bravo Exchange	-	-	-	-	-	-	-
West Kern Exchange	-	-	-	-	-	-	-
Total Bank/Exchange	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total Existing Supplies	**103,402**	**103,102**	**102,902**	**102,702**	**102,702**	**102,702**	**102,702**
Planned Supplies							
Future Groundwater[g]							
Alluvial Aquifer[h]	2,000	4,000	5,000	7,000	7,000	7,000	7,000
Saugus Formation (Restored)[i]	3,230	3,230	3,230	3,230	3,230	3,230	3,230
Saugus Formation (New)[j]	-	-	-	-	-	-	-
Total Groundwater	**5,230**	**7,230**	**8,230**	**10,230**	**10,230**	**10,230**	**10,230**
Recycled Water[j]							
Total Recycled	**565**	**5,156**	**7,627**	**9,604**	**9,604**	**9,604**	**9,604**

Planned Banking Programs[e]							
Rosedale Rio-Bravo Bank	-	-	-	-	-	-	-
Additional Bank	-	-	-	-	-	-	-
Total Banking	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total Planned Supplies	**5,795**	**12,386**	**15,857**	**19,834**	**19,834**	**19,834**	**19,834**
Total Existing and Planned Supplies	**109,197**	**115,488**	**118,759**	**122,536**	**122,536**	**122,536**	**122,536**
Demands[l]							
Demand w/ Plumbing Code Savings	76,700	84,800	92,700	100,000	103,400	106,800	110,400
Demand w/ Plumbing Code savings and Active Conservation	**68,900**	**74,600**	**80,800**	**86,100**	**88,500**	**90,900**	**93,900**

Source: UWMP, Table 6-2

Notes:

(a) Existing groundwater supplies represent the quantity of groundwater anticipated to be pumped with existing wells. As indicated in Tables 7 and 8, and in Tables 3-4 and 3-5 of the 2009 Groundwater Basin Yield Analysis, individual purveyors may have well capacity in excess of quantities shown in this table. As indicated in 2015 UWMP Table 3-10, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 4.

(b) Existing recycled water is actual use in 2015.

(c) SWP supplies from Table 2, based on average deliveries from 2015 DCR.

(d) Not needed in average/normal years.

(e) Distribution of Buena Vista Supply reflects (1) 500 AF of supply dedicated to the pending Tesoro Del Valle annexation into CLWA and NCWD beginning in 2020, and (2) 2,500 AF dedicated to the pending Legacy Village annexation into CLWA and VWX beginning 2035. Prior to these demands developing the entire 11,000 AF of this supply would be available to the entire CLWA service area. Should these developments not occur, the water would continue to be available to the entire CLWA service e area. If these developments occur but do not use all of the amounts reserved for them in any year or years, the remaining supply would be available to the entire CLWA service area.

(f) Existing Newhall Land supply committed under approved Newhall Ranch Specific Plan. Assumed to be transferred to CLWA or VWC during Newhall Ranch development, and available for annual purchase prior to that.

(g) Planned groundwater supplies represent new groundwater well capacity that may be required by an individual purveyor's production objectives in the Alluvial Aquifer and the Saugus Formation. As indicated in 2015 UWMP Table 3-10, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 4.

(h) Represents a shift in current agricultural pumping by Newhall Land and Farming to VWC due to the development of Newhall Ranch.

(i) VWC Well 201 is planned to be returned to service by 2017 with treatment under a permit from the DDW.

(j) Up to four new and replacement wells are planned to provide additional dry-year supply and would typically be used only during dry years.

(k) Planned recycled water is total projected recycled water demand from 2015 UWMP Table 4-3 less existing use. Refer to 2015 UWMP Section 4, including Section 4.4, for further discussion and information regarding factors having the potential to affect the availability of recycled water supplies.

(l) Demands are Regional Summary demands from 2015 UWMP Table 2-28.

6.2.3 Single Dry-Year Supplies and Demand

The water supplies and demand over the 2015 UWMP 35-year planning horizon were analyzed in the event of a single-dry year, similar to the drought that occurred in California in 1977. **Table 14**, Projected Single-Dry Year Supplies and Demands, summarizes the existing and planned supplies available to meet demand during a single-dry year. The demand during dry years was assumed to increase by 10 percent. The demands include reductions from projected passive conservation savings, and both with and without active conservation savings. As shown in **Table 14**, CLWA and the retail purveyors have adequate supplies to meet all service area existing and projected demands during a single-dry year through 2050.

In addition, please see Appendix C to the 2015 UWMP for the breakdown by retail purveyor of supplies available to meet demand over the 2015 UWMP 35-year planning horizon during a single-dry year. This information responds to the County DMS criteria for determining an acceptable level of water supply by retail purveyors in a single-dry year.

Specifically, Appendix C of the 2015 UWMP, Tables C-4 and C-5 respectively reflect the single-dry year existing and planned total water supplies broken down by retail purveyor, and Table C-6 compares single-dry year demands to total supplies by retail purveyor, and shows that in a single-dry year, SCWD's total existing and planned supplies exceed demand from 2020 through 2050. These tables are reproduced in **Appendix 2** to this WSA — with the SCWD demand and supplies yellow highlighted.

TABLE 14
PROJECTED SINGLE-DRY YEAR SUPPLIES AND DEMANDS (AF)

	2020	2025	2030	2035	2040	2045	2050
Existing Supplies							
Existing Groundwater[a]							
Alluvial Aquifer	20,350	20,350	20,350	20,350	20,350	20,350	20,350
Saugus Formation	19,865	19,865	19,865	19,865	19,865	19,865	19,865
Total Groundwater	**40,215**	**40,215**	**40,215**	**40,215**	**40,215**	**40,215**	**40,215**
Recycled Water[b]							
Total Recycled	**450**	**450**	**450**	**450**	**450**	**450**	**450**
Imported Water							
State Water Project[c]	4,800	4,800	4,800	4,800	4,800	4,800	4,800
Flexible Storage Accounts[d]	6,060	6,060	4,680	4,680	4,680	4,680	4,680
Buena Vista-Rosedale[e]	11,000	11,000	11,000	11,000	11,000	11,000	11,000
Nickel Water - Newhall Land[f]	1,607	1,607	1,607	1,607	1,607	1,607	1,607
Yuba Accord[g]	-	-	-	-	-	-	-
Total Imported	**23,467**	**23,467**	**22,087**	**22,087**	**22,087**	**22,087**	**22,087**
Banking and Exchange Programs							
Rosedale Rio-Bravo Bank[h]	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Semitropic Bank[i]	5,000	5,000	5,000	5,000	5,000	5,000	-
Semitropic - Newhall Land Bank[j]	4,950	4,950	4,950	4,950	4,950	4,950	4,950
Rosedale Rio-Bravo Exchange[k]	-	-	-	-	-	-	-
West Kern Exchange[k]	-	-	-	-	-	-	-
Total Bank/Exchange	**12,950**	**12,950**	**12,950**	**12,950**	**12,950**	**12,950**	**7,950**
Total Existing Supplies	**77,082**	**77,082**	**75,702**	**75,702**	**75,702**	**75,702**	**70,702**
Planned Supplies							
Future Groundwater[l]							
Alluvial Aquifer[m]	2,000	4,000	5,000	7,000	7,000	7,000	7,000
Saugus Formation (Restored)[n]	3,775	3,775	3,775	3,775	3,775	3,775	3,775
Saugus Formation (New)[o]	9,560	9,560	9,560	9,560	9,560	9,560	9,560
Total Groundwater	**15,335**	**17,335**	**18,335**	**20,335**	**20,335**	**20,335**	**20,335**
Recycled Water[p]							
Total Recycled	**565**	**5,156**	**7,627**	**9,604**	**9,604**	**9,604**	**9,604**
Planned Banking Programs							

Rosedale Rio-Bravo Bank[q]	7,000	7,000	17,000	17,000	17,000	17,000	17,000
Additional Bank[r]	-	-	-	-	-	-	5,000
Total Banking	**7,000**	**7,000**	**17,000**	**17,000**	**17,000**	**17,000**	**22,000**
Total Planned Supplies	**22,900**	**29,491**	**42,962**	**46,939**	**46,939**	**46,939**	**51,939**
Total Existing and Planned Supplies	**99,982**	**106,573**	**118,664**	**122,641**	**122,641**	**122,641**	**122,641**
Demands[s]							
Demand w/ Plumbing Code Savings	84,400	93,300	102,000	110,000	113,700	117,500	121,400
Demand w/ Plumbing Code Savings and Active Conservation	**75,800**	**82,100**	**88,900**	**94,700**	**97,400**	**100,000**	**103,300**

Source: 2015 UWMP, Table 6-3

Notes:

(a) Existing groundwater supplies represent the quantity of groundwater anticipated to be pumped with existing wells. As indicated in Tables 7 and 8 and Tables 3-4 and 3-5 of the 2009 Groundwater Basin Yield Analysis, individual purveyors may have well capacity in excess of quantities shown in this table. As indicated in 2015 UWMP Table 3-11, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 4.

(b) Existing recycled water is actual use in 2015.

(c) SWP supplies from Table 2, based on worst case actual allocation of 2014.

(d) Includes both CLWA and Ventura County entities flexible storage accounts. Extended term of agreement with Ventura County entities expires after 2025.

(e) Distribution of Buena Vista Supply reflects (1) 500 AF of supply dedicated to the pending Tesoro Del Valle annexation into CLWA and NCWD beginning in 2020, and (2) 2,500 AF dedicated to the pending Legacy Village annexation into CLWA and VWX beginning 2035. Prior to these demands developing the entire 11,000 AF of this supply would be available to the entire CLWA service area. Should these developments not occur, the water would continue to be available to the entire CLWA service e area. If these developments occur but do not use all of the amounts reserved for them in any year or years, the remaining supply would be available to the entire CLWA service area.

(f) Existing Newhall Land supply committed under approved Newhall Ranch Specific Plan. Assumed to be transferred to CLWA or VWC during Newhall Ranch development, and available for annual purchase prior to that.

(g) For single dry year, it was assumed that no water would be available under Yuba Accord.

(h) CLWA has an existing firm withdrawal capacity of 3,000 AFY and a storage capacity of 100,000 AF. There is currently 94,178 AF of recoverable water in storage.

(i) CLWA has a maximum firm withdrawal capacity of 5,000 AFY and a storage capacity of 15,000 AF. Additionally, CLWA has 35,970 AF of recoverable water stored which may be recovered using this withdrawal capacity.

(j) Newhall Land has a maximum withdrawal capacity of 4,950 AFY and a storage capacity of 55,000 AF. At the end of 2015 there was 32,507 AF of recoverable water. This is an existing Newhall Land supply, assumed to be transferred to CLWA or VWC during Newhall Ranch development, with firm withdrawal capacity made available to CLWA prior to that. Delivery of stored water from this program is assumed available to VWC.

(k) Exchange recovery assumed to be unavailable in single dry year. Term of exchange program is through 2021.

(l) Planned groundwater supplies represent supplies from new groundwater wells that may be required by an individual purveyor's production objectives in the Alluvial Aquifer and the Saugus Formation, including 3,775 AFY of restored production from VWC Well 201 and approximately 9,560 AFY from replacement and new Saugus Formation wells. When combined with existing purveyor and non-purveyor groundwater supplies, total groundwater production is consistent with the 1977 single dry-year levels identified in Table 3-8 of the 2009 Groundwater Basin Yield Analysis. As indicated in 2015 UWMP Table 3-11, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 4.

(m) Represents a shift in current agricultural pumping by Newhall Land and Farming to VWC due to the development of Newhall Ranch.

(n) VWC Well 201 is planned to be returned to service by 2017 with treatment under a permit from the DDW.

(o) Up to four new and replacement wells are planned to provide additional dry-year supply and would typically be used only during dry years.

(p) Planned recycled water is total projected recycled water demand from 2015 UWMP Table 4-3 less existing use. Refer to 2015 UWMP Section 4, including Section 4.4, for further discussion and information regarding factors having the potential to affect the availability of recycled water supplies.

(q) Firm withdrawal capacity under existing Rosedale Rio-Bravo Banking Program to be expanded by 7,000 AFY by 2017 (for a total of 10,000 AFY) and an additional 10,000 AFY by 2030.

(r) Additional banking program with firm withdrawal capacity of 5,000 AFY by 2050.
(s) Demands are Regional Summary demands from 205 UWMP Table 2-28. Includes a 10 percent increase in demand during dry years.

6.2.4 Multiple Dry-Year Supplies and Demand

The water supplies and demands for the Santa Clarita water suppliers were analyzed over the 35-year planning period in the event that a four-year dry period occurs, similar to the drought that occurred during the years 1931 through 1934, as well as a three-year dry period, similar to the drought that occurred during the years 1990 through 1992. Tables 15 and 16, below, summarize the existing and planned water supplies available to CLWA, SCWD, and the other retail water purveyors to meet demands during a four-year dry period and a three-year dry period, respectively. The demands during dry years was assumed to increase by ten percent. During prolonged dry periods, experience indicates that a reduction in demand of ten percent is achievable through implementation of conservation best management practices. The demands shown include reductions from projected passive conservation savings, and both with and without active conservation savings. As shown in Tables 15 and 16, CLWA and the retail purveyors have adequate supplies to meet all service area existing and projected demands during multiple-dry years through 2050.

In addition, please see Appendix C to the 2015 UWMP for the breakdown by retail purveyor of supplies available to meet demand over the 2015 UWMP 35-year planning horizon during multiple-dry years. This information responds to the County DMS criteria for determining an acceptable level of water supply by retail purveyors in multiple-dry years.

Specifically, Appendix C of the 2015 UWMP, Tables C-7A and C-7B reflect the existing water supplies for four-year and three-year dry periods, respectively, broken down by retail purveyor. Tables C-8A and C-8B reflect the planned and total water supplies for four-year and three-year dry periods, respectively, broken down by retail purveyor. Tables C-9A and C-9B compares the four-year and three-year dry periods demands to total supplies by retail purveyor, respectively. Tables C-9A and C-9B show that in a multiple-dry years, SCWD's total existing and planned supplies exceed demand from 2020 through 2050. These tables are reproduced in **Appendix 3** to this WSA — with the SCWD demand and supplies yellow highlighted.

TABLE 15
PROJECTED FOUR-YEAR DRY PERIOD SUPPLIES AND DEMANDS (AF)

	2020	2025	2030	2035	2040	2045	2050
Existing Supplies							
Existing Groundwater[a]							
Alluvial Aquifer	20,350	20,350	20,350	20,350	20,350	20,350	20,350
Saugus Formation	15,825	15,825	15,825	15,825	15,825	15,825	15,825
Total Groundwater	**36,175**	**36,175**	**36,175**	**36,175**	**36,175**	**36,175**	**36,175**
Recycled Water[b]							
Total Recycled	**450**	**450**	**450**	**450**	**450**	**450**	**450**
Imported Water							
State Water Project[c]	31,400	31,400	31,400	31,400	31,400	31,400	31,400
Flexible Storage Accounts[d]	1,515	1,515	1,170	1,170	1,170	1,170	1,170
Buena Vista-Rosedale[e]	11,000	11,000	11,000	11,000	11,000	11,000	11,000
Nickel Water - Newhall Land[f]	1,607	1,607	1,607	1,607	1,607	1,607	1,607
Yuba Accord[g]	1,000	1,000	-	-	-	-	-
Total Imported	**46,522**	**46,522**	**45,177**	**45,177**	**45,177**	**45,177**	**45,177**
Banking and Exchange Programs							
Rosedale Rio-Bravo Bank[h]	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Semitropic Bank[i]	5,000	5,000	5,000	5,000	5,000	5,000	-
Semitropic - Newhall Land Bank[j]	4,950	4,950	4,950	4,950	4,950	4,950	4,950
Rosedale Rio-Bravo Exchange[k]	2,375	-	-	-	-	-	-
West Kern Exchange[l]	125	-	-	-	-	-	-
Total Bank/Exchange	**15,450**	**12,950**	**12,950**	**12,950**	**12,950**	**12,950**	**7,950**
Total Existing Supplies	**98,597**	**96,097**	**94,752**	**94,752**	**94,752**	**94,752**	**89,752**
Planned Supplies							
Future Groundwater[l]							
Alluvial Aquifer[m]	2,000	4,000	5,000	7,000	7,000	7,000	7,000
Saugus Formation (Restored)[n]	3,775	3,775	3,775	3,775	3,775	3,775	3,775
Saugus Formation (New)[o]	11,100	11,100	11,100	11,100	11,100	11,100	11,100
Total Groundwater	**16,875**	**18,875**	**19,875**	**21,875**	**21,875**	**21,875**	**21,875**
Recycled Water[p]							
Total Recycled	**565**	**5,156**	**7,627**	**9,604**	**9,604**	**9,604**	**9,604**
Planned Banking Programs							

Rosedale Rio-Bravo Bank[q]	7,000	7,000	17,000	17,000	17,000	17,000	17,000
Additional Bank[r]	-	-	-	-	-	-	5,000
Total Banking	**7,000**	**7,000**	**17,000**	**17,000**	**17,000**	**17,000**	**22,000**
Total Planned Supplies	**24,440**	**31,031**	**44,502**	**48,479**	**48,479**	**48,479**	**53,479**
Total Existing and Planned Supplies	**123,037**	**127,128**	**139,254**	**143,231**	**143,231**	**143,231**	**143,231**
Demands[s]							
Demand w/ Plumbing Code Savings	84,400	93,300	102,000	110,000	113,700	117,500	121,400
Demand w/ Plumbing Code Savings and Active Conservation	**75,800**	**82,100**	**88,900**	**94,700**	**97,400**	**100,000**	**103,300**

Source: 2015 UWMP, Table 6-4A

Notes:

(a) Existing groundwater supplies represent the quantity of groundwater anticipated to be pumped with existing wells. As indicated in Tables 7 and 8, and in Tables 3-4 and 3-5 of the 2009 Groundwater Basin Yield Analysis, individual purveyors may have well capacity in excess of quantities shown in this table. As indicated in 2015 UWMP Table 3-12A, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 4.

(b) Existing recycled water is actual use in 2015.

(c) SWP supplies from Table 2, based on 1931-1934 supplies from 2015 DCR.

(d) Includes both CLWA and Ventura County entities flexible storage accounts. Extended term of agreement with Ventura County entities expires after 2025.

(e) Distribution of Buena Vista Supply reflects (1) 500 AF of supply dedicated to the pending Tesoro Del Valle annexation into CLWA and NCWD beginning in 2020, and (2) 2,500 AF dedicated to the pending Legacy Village annexation into CLWA and VWX beginning 2035. Prior to these demands developing the entire 11,000 AF of this supply would be available to the entire CLWA service area. Should these developments not occur, the water would continue to be available to the entire CLWA service e area. If these developments occur but do not use all of the amounts reserved for them in any year or years, the remaining supply would be available to the entire CLWA service area.

(f) Existing Newhall Land supply committed under approved Newhall Ranch Specific Plan. Assumed to be transferred to CLWA or VWC during Newhall Ranch development, and available for annual purchase prior to that.

(g) For the multiple-dry year period, it was assumed that CLWA would purchase the maximum it could, an estimated average of 1,000 AFY (after losses) during the four-year period, through 2025.

(h) CLWA has an existing firm withdrawal capacity of 3,000 AFY and a storage capacity of 100,000 AF. There is currently 94,178 AF of recoverable water in storage.

(i) CLWA has a maximum firm withdrawal capacity of 5,000 AFY and a storage capacity of 15,000 AF. Additionally, CLWA has 35,970 AF of recoverable water stored which may be recovered using this withdrawal capacity.

(j) Newhall Land has a maximum withdrawal capacity of 4,950 AFY and a storage capacity of 55,000 AF. At the end of 2015 there was 32,507 AF of recoverable water. This is an existing Newhall Land supply, assumed to be transferred to CLWA or VWC during Newhall Ranch development, with firm withdrawal capacity made available to CLWA prior to that. Delivery of stored water from this program is assumed available to VWC.

(k) Exchange recovery was assumed to occur sometime during the four-year dry period, for an average annual supply of one-fourth of the total recoverable water available (total recoverable is 9,509 AF from Rosedale-Rio Bravo and 500 AF from West Kern exchange programs).

(l) Planned groundwater supplies represent supplies from new groundwater wells that may be required by an individual purveyor's production objectives in the Alluvial Aquifer and the Saugus Formation, including 3,775 AFY of restored production from VWC Well 201 and approximately 11,100 AFY from replacement and new Saugus Formation wells. When combined with existing purveyor and non-purveyor groundwater supplies, total groundwater production is consistent with the 1931-1934 multiple dry-year levels identified in Table 3-8 of the 2009 Groundwater Basin Yield Analysis. As indicated in 2015 UWMP Table 3-12A, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 4.

(m) Represents a shift in current agricultural pumping by Newhall Land and Farming to VWC due to the development of Newhall Ranch.

(n) VWC Well 201 is planned to be returned to service by 2017 with treatment under a permit from the DDW.

(o) Up to four new and replacement wells are planned to provide additional dry-year supply and would typically be used only during dry years.

(p) Planned recycled water is total projected recycled water demand from 2015 UWMP Table 4-3 less existing use. Refer to 2015 UWMP Section 4, including Section 4.4, for further discussion and information regarding factors having the potential to affect the availability of recycled water supplies.

(q) Firm withdrawal capacity under existing Rosedale Rio-Bravo Banking Program to be expanded by 7,000 AFY by 2017 (for a total of 10,000 AFY) and an additional 10,000 AFY by 2030.
(r) Additional banking program with firm withdrawal capacity of 5,000 AFY by 2050.
(s) Demands are Regional Summary demands from 2015 UWMP Table 2-28. Includes a 10 percent increase in demand during dry years.

TABLE 16
PROJECTED THREE-YEAR DRY PERIOD SUPPLIES AND DEMANDS (AF)

	2020	2025	2030	2035	2040	2045	2050
Existing Supplies							
Existing Groundwater[a]							
Alluvial Aquifer	20,350	20,350	20,350	20,350	20,350	20,350	20,350
Saugus Formation	15,525	15,525	15,525	15,525	15,525	15,525	15,525
Total Groundwater	**35,875**	**35,875**	**35,875**	**35,875**	**35,875**	**35,875**	**35,875**
Recycled Water[b]							
Total Recycled	**450**	**450**	**450**	**450**	**450**	**450**	**450**
Imported Water							
State Water Project[c]	19,800	19,500	19,300	19,000	19,000	19,000	19,000
Flexible Storage Accounts[d]	2,020	2,020	1,560	1,560	1,560	1,560	1,560
Buena Vista-Rosedale[e]	11,000	11,000	11,000	11,000	11,000	11,000	11,000
Nickel Water - Newhall Land[f]	1,607	1,607	1,607	1,607	1,607	1,607	1,607
Yuba Accord[g]	1,000	1,000	-	-	-	-	-
Total Imported	**35,427**	**35,127**	**33,467**	**33,167**	**33,167**	**33,167**	**33,167**
Banking and Exchange Programs							
Rosedale Rio-Bravo Bank[h]	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Semitropic Bank[i]	5,000	5,000	5,000	5,000	5,000	5,000	-
Semitropic - Newhall Land Bank[j]	4,950	4,950	4,950	4,950	4,950	4,950	4,950
Rosedale Rio-Bravo Exchange[k]	3,167	-	-	-	-	-	-
West Kern Exchange[k]	167	-	-	-	-	-	-
Total Bank/Exchange	**16,284**	**12,950**	**12,950**	**12,950**	**12,950**	**12,950**	**7,950**
Total Existing Supplies	**88,036**	**84,402**	**82,742**	**82,442**	**82,442**	**82,442**	**77,442**
Planned Supplies							
Future Groundwater[l]							
Alluvial Aquifer[m]	2,000	4,000	5,000	7,000	7,000	7,000	7,000
Saugus Formation (Restored)[n]	3,775	3,775	3,775	3,775	3,775	3,775	3,775
Saugus Formation (New)[o]	10,550	10,550	10,550	10,550	10,550	10,550	10,550
Total Groundwater	**16,325**	**18,325**	**19,325**	**21,325**	**21,325**	**21,325**	**21,325**
Recycled Water[p]							
Total Recycled	**565**	**5,156**	**7,627**	**9,604**	**9,604**	**9,604**	**9,604**
Planned Banking Programs							

Rosedale Rio-Bravo Bank[q]	7,000	7,000	17,000	17,000	17,000	17,000	17,000
Additional Bank[r]	-	-	-	-	-	-	5,000
Total Banking	**7,000**	**7,000**	**17,000**	**17,000**	**17,000**	**17,000**	**22,000**
Total Planned Supplies	**23,890**	**30,481**	**43,952**	**47,929**	**47,929**	**47,929**	**52,929**
Total Existing and Planned Supplies	**111,926**	**114,883**	**126,694**	**130,371**	**130,371**	**130,371**	**130,371**
Demands[s]							
Demand w/ Plumbing Code Savings	84,400	93,300	102,000	110,000	113,700	117,500	121,400
Demand w/ Plumbing Code Savings and Active Conservation	**75,800**	**82,100**	**88,900**	**94,700**	**97,400**	**100,000**	**103,300**

Source: 2015 UWMP, Table 6-4B

Notes:

(a) Existing groundwater supplies represent the quantity of groundwater anticipated to be pumped with existing wells. As indicated in Tables 7 and 8, and in Tables 3-4 and 3-5 of the 2009 Groundwater Basin Yield Analysis, individual purveyors may have well capacity in excess of quantities shown in this table. As indicated in 2015 UWMP Table 3-12B, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 4.

(b) Existing recycled water is actual use in 2015.

(c) SWP supplies from Table 2, based on 1990-1992 supplies from 2015 DCR.

(d) Includes both CLWA and Ventura County entities flexible storage accounts. Extended term of agreement with Ventura County entities expires after 2025.

(e) Distribution of Buena Vista Supply reflects (1) 500 AF of supply dedicated to the pending Tesoro Del Valle annexation into CLWA and NCWD beginning in 2020, and (2) 2,500 AF dedicated to the pending Legacy Village annexation into CLWA and VWX beginning 2035. Prior to these demands developing the entire 11,000 AF of this supply would be available to the entire CLWA service area. Should these developments not occur, the water would continue to be available to the entire CLWA service e area. If these developments occur but do not use all of the amounts reserved for them in any year or years, the remaining supply would be available to the entire CLWA service area.

(f) Existing Newhall Land supply committed under approved Newhall Ranch Specific Plan. Assumed to be transferred to CLWA or VWC during Newhall Ranch development, and available for annual purchase prior to that.

(g) For the multiple-dry year period, it was assumed that CLWA would purchase the maximum it could, an estimated average of 1,000 AFY (after losses) during the four-year period, through 2025.

(h) CLWA has an existing firm withdrawal capacity of 3,000 AFY and a storage capacity of 100,000 AF. There is currently 94,178 AF of recoverable water in storage.

(i) CLWA has a maximum firm withdrawal capacity of 5,000 AFY and a storage capacity of 15,000 AF. Additionally, CLWA has 35,970 AF of recoverable water stored which may be recovered using this withdrawal capacity.

(j) Newhall Land has a maximum withdrawal capacity of 4,950 AFY and a storage capacity of 55,000 AF. At the end of 2015 there was 32,507 AF of recoverable water. This is an existing Newhall Land supply, assumed to be transferred to CLWA or VWC during Newhall Ranch development, with firm withdrawal capacity made available to CLWA prior to that. Delivery of stored water from this program is assumed available to VWC.

(k) Exchange recovery was assumed to occur sometime during the three-year dry period, for an average annual supply of one-third of the total recoverable water available (total recoverable is 9,509 AF from Rosedale-Rio Bravo and 500 AF from West Kern exchange programs).

(l) Planned groundwater supplies represent supplies from new groundwater wells that may be required by an individual purveyor's production objectives in the Alluvial Aquifer and the Saugus Formation, including 3,775 AFY of restored production from VWC Well 201 and approximately 10,550 AFY from replacement and new Saugus Formation wells. When combined with existing purveyor and non-purveyor groundwater supplies, total groundwater production is consistent with the 1931-1934 multiple dry-year levels identified in Table 3-8 of the 2009 Groundwater Basin Yield Analysis. As indicated in 2015 UWMP Table 3-12B, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 4.

(m) Represents a shift in current agricultural pumping by Newhall Land and Farming to VWC due to the development of Newhall Ranch.

(n) VWC Well 201 is planned to be returned to service by 2017 with treatment under a permit from the DDW.

(o) Up to four new and replacement wells are planned to provide additional dry-year supply and would typically be used only during dry years.

(p) Planned recycled water is total projected recycled water demand from 2015 UWMP Table 4-3 less existing use. Refer to 2015 UWMP Section 4, including Section 4.4, for further discussion and information regarding factors having the potential to affect the availability of recycled water supplies.

(q) Firm withdrawal capacity under existing Rosedale Rio-Bravo Banking Program to be expanded by 7,000 AFY by 2017 (for a total of 10,000 AFY) and an additional 10,000 AFY by 2030.
(r) Additional banking program with firm withdrawal capacity of 5,000 AFY by 2050.
(s) Demands are Regional Summary demands from 2015 UWMP Table 2-28. Includes a 10 percent increase in demand during dry years.

7.0 CONCLUSION

Based on the preceding information and analysis, this WSA concludes that the total water supplies projected to be available to SCWD during average/normal, single-dry, and multiple-dry years within a 20-year projection are sufficient to meet the projected demand associated with the Sand Canyon Plaza Project, in addition to existing and planned future uses, including agricultural, manufacturing, and industrial uses within the SCWD service area.

Consistent with the provisions of SB 610, neither this WSA nor its approval shall be construed to create a right or entitlement to water service or any specific level of water service, and shall not impose, expand, or limit any duty concerning the obligation of SCWD to provide certain service to its existing customers or to any future potential customers. The WSA does not constitute a will-serve, plan of service, or agreement to provide water service to the Project, and does not entitle the Project, Project Applicant, or any other person or entity to any right, priority or allocation in any supply, capacity or facility. To receive water service, the Project will be subject to an agreement with SCWD, together with any and all applicable fees, charges, plans and specifications, conditions, and any and all other applicable SCWD requirements in place and as amended from time to time. Nor does anything in this WSA prevent or otherwise interfere with SCWD's discretionary authority to declare a water shortage emergency in accordance with Water Code section 350 et seq. and to take any and all related and other actions authorized by law.

[This page intentionally left blank.]

APPENDIX

[This page intentionally left blank.]

TABLE C-1
AVERAGE/NORMAL YEAR: EXISTING WATER SUPPLIES

Existing Supplies	2020	2025	2030	2035	2040	2045	2050
Existing Supplies[a][b]							
Existing Groundwater[c]							
Alluvial Aquifer							
LACWWD 36							
NCWD	1825	1825	1825	1825	1825	1825	1825
SCWD	10,550	10,550	10,550	10,550	10,550	10,550	10,550
VWC	11,725	11,725	11,725	11,725	11,725	11,725	11,725
Total	*24,100*	*24,100*	*24,100*	*24,100*	*24,100*	*24,100*	*24,100*
Saugus Formation							
LACWWD 36	500	500	500	500	500	500	500
NCWD	3,175	3,175	3,175	3,175	3,175	3,175	3,175
SCWD	3,300	3,300	3,300	3,300	3,300	3,300	3,300
VWC	470	470	470	470	470	470	470
Total	*7,445*	*7,445*	*7,445*	*7,445*	*7,445*	*7,445*	*7,445*
Recycled Water							
LACWWD 36							
NCWD							
SCWD							
VWC	450	450	450	450	450	450	450
Total	*450*	*450*	*450*	*450*	*450*	*450*	*450*
Imported Water							
SWP Table A Amount[d]							
LACWWD 36	3,402	4,259	4,601	5,086	5,387	5,651	5,800
NCWD	9,639	10,552	10,530	11,106	11,647	12,121	12,361
SCWD	26,933	28,508	27,473	27,847	28,560	29,036	29,865
VWC	18,825	15,181	15,697	14,061	12,507	11,293	10,073
Total	*58,800*	*58,500*	*58,300*	*58,100*	*58,100*	*58,100*	*58,100*
SWP Flexible Storage Accounts[e]							
LACWWD 36	0	0	0	0	0	0	0
NCWD	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0
VWC	0	0	0	0	0	0	0

Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Buena Vista-Rosedale [g]							
LACWWD 36	671	846	913	982	1,004	1,026	1,027
NCWD	1,902	2,096	2,089	2,144	2,171	2,201	2,188
SCWD	5,313	5,661	5,449	5,375	5,324	5,273	5,286
VWC	3,114	2,397	2,550	2,500	2,500	2,500	2,500
Total	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*
Nickel Water - Newhall Land[f]							
VWC	1,607	1,607	1,607	1,607	1,607	1,607	1,607
Total	*1,607*	*1,607*	*1,607*	*1,607*	*1,607*	*1,607*	*1,607*
Yuba Accord[e]							
LACWWD 36	0	0	0	0	0	0	0
NCWD	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0
VWC	0	0	0	0	0	0	0
Total							
Banking and Exchange Programs[e]							
Rosedale Rio-Bravo Bank							
LACWWD 36	0	0	0	0	0	0	0
NCWD	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0
VWC	0	0	0	0	0	0	0
Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Semitropic Bank							
LACWWD 36	0	0	0	0	0	0	0
NCWD	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0
VWC	0	0	0	0	0	0	0
Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Semitropic - Newhall Land Bank							
VWC	0	0	0	0	0	0	0
Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Rosedale Rio-Bravo Exchange							
LACWWD 36	0	0	0	0	0	0	0
NCWD	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0
VWC	0	0	0	0	0	0	0

Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*
West Kern Exchange							
LACWWD 36	0	0	0	0	0	0	0
NCWD	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0
VWC	0	0	0	0	0	0	0
Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Existing Supplies							
LACWWD 36	4,573	5,605	6,013	6,568	6,891	7,177	7,327
NCWD	16,541	17,648	17,619	18,250	18,818	19,322	19,549
SCWD	46,096	48,019	46,772	47,072	47,734	48,159	49,001
VWC	36,191	31,830	32,498	30,813	29,259	28,045	26,825
Total	**103,402**	**103,102**	**102,902**	**102,702**	**102,702**	**102,702**	**102,702**

Source: 2015 UWMP, Table C1

Notes:

(a) The distribution of existing and planned supplies does not represent a formal allocation of water supplies.

(b) LACWWD 36 included for purposes of providing regional completeness; however, it is not required to prepare an UWMP.

(c) Existing supplies represent the quantity of groundwater anticipated to be pumped with existing wells. As indicated in Tables 7 and 8, and in Tables 3-4 and 3-5 of the 2009 Groundwater Basin Yield Analysis, individual purveyors may have well capacity in excess of quantities shown in this table. As indicated in 2015 UWMP Table 3-10, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 4.

(d) SWP supplies from Table 2, based on average deliveries from 2015 DCR.

(e) Not needed in average/normal years.

(f) Existing Newhall Land supply committed under approved Newhall Ranch Specific Plan. Assumed to be transferred to CLWA or VWC during Newhall Ranch development, and available for annual purchase prior to that.

(g) Distribution of Buena Vista Supply reflects (1) 500 AF of supply dedicated to the pending Tesoro Del Valle annexation into CLWA and NCWD beginning in 2020, and (2) 2,500 AF dedicated to the pending Legacy Village annexation into CLWA and VWX beginning 2035. Prior to these demands developing the entire 11,000 AF of this supply would be available to the entire CLWA service area.

TABLE C-2
AVERAGE/NORMAL YEAR: PLANNED AND TOTAL WATER SUPPLIES

Planned Supplies	2020	2025	2030	2035	2040	2045	2050
Planned Supplies							
Future Groundwater[a][b]							
Alluvial Aquifer							
LACWWD 36							
NCWD	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0
VWC[c]	2,000	4,000	5,000	7,000	7,000	7,000	7,000
Total	*2,000*	*4,000*	*5,000*	*7,000*	*7,000*	*7,000*	*7,000*
Saugus Formation[d]							
LACWWD 36	0	0	0	0	0	0	0
NCWD	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0
VWC	0	0	0	0	0	0	0
VWC (Restored Well)[e]	3,230	3,230	3,230	3,230	3,230	3,230	3,230
Total	*3,230*	*3,230*	*3,230*	*3,230*	*3,230*	*3,230*	*3,230*
Recycled Water[f]							
LACWWD 36	0	0	0	0	0	0	0
NCWD	0	249	249	249	249	249	249
SCWD	300	524	524	524	524	524	524
VWC	265	4,383	6,854	8,831	8,831	8,831	8,831
Total	*565*	*5,156*	*7,627*	*9,604*	*9,604*	*9,604*	*9,604*
Banking Programs[g]							
LACWWD 36	0	0	0	0	0	0	0
NCWD	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0
VWC	0	0	0	0	0	0	0
Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Planned Supplies							
LACWWD 36	0	0	0	0	0	0	0
NCWD	0	249	249	249	249	249	249
SCWD	300	524	524	524	524	524	524
VWC	5,495	11,613	15,084	19,061	19,061	19,061	19,061

Total	*5,795*	*12,386*	*15,857*	*19,834*	*19,834*	*19,834*	*19,834*
Total Existing and Planned Supplies							
LACWWD 36	4,573	5,605	6,013	6,596	6,953	7,266	7,442
NCWD	16,541	17,897	17,868	18,561	19,202	19,763	20,044
SCWD	46,396	48,543	47,296	47,753	48,589	49,143	50,118
VWC	41,686	43,443	47,582	49,626	47,792	46,363	44,932
Total	**109,197**	**115,488**	**118,759**	**122,536**	**122,536**	**122,536**	**122,536**

Source: 2015 UWMP, Table C2

Notes:

(a) The distribution of existing and planned supplies does not represent a formal allocation of water supplies.

(b) Planned groundwater supplies represent new groundwater well capacity that may be required by an individual purveyor's production objectives in the Alluvial Aquifer and the Saugus Formation. When combined with existing purveyor and non-purveyor groundwater supplies, total groundwater production remains within the sustainable ranges identified in Table 3-7 of 2009 Groundwater Basin Yield Analysis. As indicated in 2015 UWMP Table 3-10, existing and planned groundwater pumping remain within the basin operating plan shown on Table 4.

(c) Conversion of Newhall Land agricultural groundwater supplies to VWC M&I supplies.

(d) Up to four new and replacement wells are planned to provide additional dry-year supply and would typically be used only during dry years.

(e) VWC Well 201 is planned to be returned to service by 2017 with treatment under a permit from the DDW.

(f) Planned recycled water is the total projected recycled water demand from 2015 UWMP Table 4-3 less existing use. Refer to 2015 UWMP Section 4, including Section 4.4, for further discussion and information regarding factors having the potential to affect the availability of recycled water supplies.

(g) Not needed in average/normal years.

TABLE C-3
AVERAGE/NORMAL YEAR: DEMAND COMPARISON TO TOTAL SUPPLIES

	2020	2025	2030	2035	2040	2045	2050
Water Demands [(a)]							
LACWWD 36[(c)]							
Demand w/out Plumbing Code Savings	2,500	3,000	3,500	4,000	4,500	5,000	5,500
Demand w/ Plumbing Code Savings	2,400	2,900	3,300	3,700	4,200	4,600	5,100
Demand w/ Plumbing Code Savings and Active Conservation	2,300	2,700	3,100	3,500	3,900	4,300	4,700
Existing and Planned Supplies	*4,573*	*5,605*	*6,013*	*6,568*	*6,891*	*7,177*	*7,327*
NCWD							
Demand w/out Plumbing Code Savings	11,500	13,200	14,400	15,600	16,800	18,000	19,200
Demand w/ Plumbing Code Savings	11,500	12,400	13,200	14,100	15,100	16,100	17,100
Demand w/ Plumbing Code Savings and Active Conservation	10,100	10,700	11,200	11,800	12,600	13,400	14,200
Existing and Planned Supplies	*16,541*	*17,897*	*17,868*	*18,499*	*19,067*	*19,571*	*19,798*
SCWD							
Demand w/out Plumbing Code Savings	32,500	35,200	37,900	40,600	43,300	46,000	48,700
Demand w/ Plumbing Code Savings	31,500	33,400	35,300	37,400	39,500	41,700	43,900
Demand w/ Plumbing Code Savings and Active Conservation	28,400	29,100	29,900	30,800	32,400	33,900	36,000
Existing and Planned Supplies	*46,396*	*48,543*	*47,296*	*47,596*	*48,258*	*48,683*	*49,525*
VWC							
Demand w/out Plumbing Code Savings	32,900	38,700	44,600	49,300	49,300	49,300	49,300
Demand w/ Plumbing Code Savings	31,300	36,100	40,900	44,800	44,600	44,400	44,300
Demand w/ Plumbing Code Savings and Active Conservation	28,100	32,100	36,600	40,000	39,600	39,300	39,000
Existing and Planned Supplies	*41,686*	*43,443*	*47,582*	*49,874*	*48,320*	*47,106*	*45,886*
Regional Summary							
Demand w/out Plumbing Code Savings	79,400	90,100	100,400	109,500	113,900	118,300	122,700
Demand w/ Plumbing Code Savings	76,700	84,800	92,700	100,000	103,400	106,800	110,400

Demand w/ Plumbing Code Savings and Active Conservation	68,900	74,600	80,800	86,100	88,500	90,900	93,900
Total Existing and Planned Supplies	**109,197**	**115,488**	**118,759**	**122,536**	**122,536**	**122,536**	**122,536**

Source: 2015 UWMP, C-3

Notes:

(a) From 2015 UWMP Table 2-28 (source: MWM 2016).

(b) LACWWD 36 included for purposes of providing regional completeness; however, it is not required to prepare an UWMP.

[This page intentionally left blank.]

APPENDIX 2

[This page intentionally left blank]

TABLE C-4
SINGLE DRY YEAR: EXISTING WATER SUPPLIES

Existing Supplies	2020	2025	2030	2035	2040	2045	2050
Existing Supplies[a][b]							
Existing Groundwater[c]							
Alluvial Aquifer							
LACWWD 36							
NCWD	1,150	1,150	1,175	1,175	1,175	1,175	1,175
SCWD	8,150	8,150	8,150	8,150	8,150	8,150	8,150
VWC	10,800	10,725	10,675	10,600	10,600	10,600	10,600
Total	*20,100*	*20,025*	*20,000*	*19,925*	*19,925*	*19,925*	*19,925*
Saugus Formation							
LACWWD 36	500	500	500	500	500	500	500
NCWD	4,975	4,975	4,975	4,975	4,975	4,975	4,975
SCWD	3,300	3,300	3,300	3,300	3,300	3,300	3,300
VWC	11,090	11,090	11,090	11,090	11,090	11,090	11,090
Total	*19,865*	*19,865*	*19,865*	*19,865*	*19,865*	*19,865*	*19,865*
Recycled Water							
LACWWD 36	0	0	0	0	0	0	0
NCWD	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0
VWC	450	450	450	450	450	450	450
Total	*450*	*450*	*450*	*450*	*450*	*450*	*450*
Imported Water							
SWP Table A Amount[d]							
LACWWD 36	319	409	442	509	525	539	542
NCWD	843	935	939	1,043	1,073	1,101	1,106
SCWD	3,009	3,233	3,101	3,247	3,203	3,160	3,151
VWC	629	223	318	0	0	0	0
Total	*4,800*	*4,800*	*4,800*	*4,800*	*4,800*	*4,800*	*4,800*
SWP Flexible Storage Accounts[e]							
LACWWD 36	403	517	431	497	511	525	529
NCWD	1,064	1,181	916	1,017	1,046	1,073	1,079
SCWD	3,799	4,081	3,023	3,166	3,123	3,081	3,072
VWC	794	281	311	0	0	0	0
Total	*6,060*	*6,060*	*4,680*	*4,680*	*4,680*	*4,680*	*4,680*
Buena Vista-Rosedale[j]							

LACWWD 36	732	938	1,013	902	929	954	961
NCWD	1,931	2,143	2,152	1,848	1,900	1,949	1,959
SCWD	6,896	7,408	7,106	5,751	5,671	5,597	5,580
VWC	1,442	510	730	2,500	2,500	2,500	2,500
Total	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*
Nickel Water - Newhall Land[f]							
VWC	1,607	1,607	1,607	1,607	1,607	1,607	1,607
Total	*1,607*	*1,607*	*1,607*	*1,607*	*1,607*	*1,607*	*1,607*
Yuba Accord							
LACWWD 36	0	0	0	0	0	0	0
NCWD	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0
VWC	0	0	0	0	0	0	0
Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Banking and Exchange Programs							
Rosedale Rio-Bravo Bank[g]							
LACWWD 36	200	256	276	318	328	337	339
NCWD	527	584	587	652	671	688	692
SCWD	1,881	2,020	1,936	2,030	2,002	1,975	1,969
VWC	393	139	199	0	0	0	0
Total	*3,000*	*3,000*	*3,000*	*3,000*	*3,000*	*3,000*	*3,000*
Semitropic Bank[h]							
LACWWD 36	333	427	460	530	546	561	
NCWD	878	974	978	1,087	1,118	1,147	
SCWD	3,134	3,367	3,230	3,383	3,336	3,292	
VWC	655	232	332	0	0	0	
Total	*5,000*	*5000*	*5000*	*5000*	*5000*	*5000*	*0*
Semitropic - Newhall Land Bank[i]							
VWC	4,950	4,950	4,950	4,950	4,950	4,950	4,950
Total	*4,950*	*4,950*	*4,950*	*4,950*	*4,950*	*4,950*	*4,950*
Rosedale Rio-Bravo Exchange							
LACWWD 36	-	-	-	-	-	-	-
NCWD	-	-	-	-	-	-	-
SCWD	-	-	-	-	-	-	-
VWC	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-
West Kern Exchange							
LACWWD 36	-	-	-	-	-	-	-

NCWD	-	-	-	-	-	-	-
SCWD	-	-	-	-	-	-	-
VWC	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-
Total Existing Supplies							
LACWWD 36	2,486	3,047	3,122	3,256	3,339	3,417	2,871
NCWD	11,366	11,942	11,722	11,797	11,957	12,107	10,986
SCWD	30,168	31,561	29,847	29,027	28,784	28,556	25,223
VWC	32,811	30,207	30,662	31,197	31,197	31,197	31,197
Total	**76,832**	**76,757**	**75,352**	**75,277**	**75,277**	**75,277**	**70,277**

Source: 2015 UWMP, Table C-4

Notes:

(a) The distribution of existing and planned supplies does not represent a formal allocation of water supplies.

(b) LACWWD 36 included for purposes of providing regional completeness; however, it is not required to prepare an UWMP.

(c) Existing supplies represent the quantity of groundwater anticipated to be pumped with existing wells. As indicated in Tables 7 and 8, and in Tables 3-4 and 3-5 of the 2009 Groundwater Basin Yield Analysis, individual purveyors may have well capacity in excess of quantities shown above. Existing pumping is consistent with Table 3-8 of the 2009 Groundwater Basin Yield Analysis for the 1977 single-dry year. As indicated in 2015 UWMP Table 3-11, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 4.

(d) SWP supplies from Table 2, based on worst case actual allocation of 2014.

(e) Includes both CLWA and Ventura County entities flexible storage accounts. Extended term of agreement with Ventura County expires at the end of 2025.

(f) Existing Newhall Land supply committed under approved Newhall Ranch Specific Plan. Assumed to be transferred to CLWA or VWC during Newhall Ranch development, and available for annual purchase prior to that.

(g) CLWA has an existing firm withdrawal capacity of 3,000 AFY and a storage capacity of 100,000 AF. There is currently 94,178 AF of recoverable water in storage.

(h) CLWA has a maximum firm withdrawal capacity of 5,000 AFY and a storage capacity of 15,000 AF. Additionally, CLWA has 35,970 AF of recoverable water stored that may be recovered using this withdrawal capacity.

(i) Newhall Land has a maximum withdrawal capacity of 4,950 AFY and a storage capacity of 55,000 AF. Newhall Land had 32,507 AF of recoverable water as of 1/1/16. This is an existing Newhall Land supply, assumed to be transferred to CLWA or VWC during Newhall Ranch development, with firm withdrawal capacity made available to CLWA prior to that. Delivery of stored water from this program is assumed available to VWC.

(j) Distribution of Buena Vista Supply reflects (1) 500 AF of supply dedicated to the pending Tesoro Del Valle annexation into CLWA and NCWD beginning in 2020, and (2) 2,500 AF dedicated to the pending Legacy Village annexation into CLWA and VWX beginning 2035. Prior to these demands developing the entire 11,000 AF of this supply would be available to the entire CLWA service area.

TABLE C-5
SINGLE DRY YEAR: PLANNED AND TOTAL WATER SUPPLIES

Planned Supplies	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
Planned Supplies							
Future Groundwater[a][b]							
Alluvial Aquifer							
LACWWD 36							
NCWD	0	0	0	0	0	0	0
SCWD	250	325	350	425	425	425	425
VWC[c]	2,000	4,000	5,000	7,000	7,000	7,000	7,000
Total	*2,250*	*4,325*	*5,350*	*7,425*	*7,425*	*7,425*	*7,425*
Saugus Formation[d]							
LACWWD 36	751	857	862	891	942	986	1,011
NCWD	1,611	1,713	1,567	1,543	1,636	1,717	1,758
SCWD	7,188	6,979	6,191	5,799	5,851	5,871	5,946
VWC (Restored Well)[e]	3,775	3,775	3,775	3,775	3,775	3,775	3,775
VWC (New Wells)	10	10	939	1,327	1,132	986	844
Total	*13,335*	*13,335*	*13,335*	*13,335*	*13,335*	*13,335*	*13,335*
Recycled Water[f]							
LACWWD 36	0	0	0	0	0	0	0
NCWD	0	249	249	249	249	249	249
SCWD	300	524	524	524	524	524	524
VWC	265	4,383	6,854	8,831	8,831	8,831	8,831
Total	*565*	*5,156*	*7,627*	*9,604*	*9,604*	*9,604*	*9,604*
Banking Programs							
Rosedale Rio-Bravo Bank [g]							
LACWD 36	466	597	1,565	1,804	1,858	1,909	1,921
NCWD	1,229	1,364	3,326	3,695	3,800	3,898	3,919
SCWD	4,388	4,714	10,981	11,501	11,343	11,193	11,160
VWC	918	325	1,128	0	0	0	0
Total	*7,000*	*7,000*	*17,000*	*17,000*	*17,000*	*17,000*	*17,000*
Future Additional Bank[h]							
LACWWD 36	0	0	0	0	0	0	565
NCWD	0	0	0	0	0	0	1,153
SCWD	0	0	0	0	0	0	3,282
VWC	0	0	0	0	0	0	0
Total	-	-	-	-	-	-	*5,000*
Total Planned Supplies							

LACWD 36	1,217	1,455	2,426	2,694	2,800	2,895	3,497
NCWD	2,839	3,326	5,142	5,487	5,684	5,864	7,078
SCWD	12,126	12,543	18,047	18,249	18,143	18,013	21,338
VWC	6,968	12,493	17,696	20,933	20,738	20,592	20,450
Total	*23,150*	*29,816*	*43,312*	*47,364*	*47,364*	*47,364*	*52,364*
Total Existing and Planned Supplies							
LACWWD 36	3,703	4,502	5,548	5,951	6,139	6,312	6,368
NCWD	14,205	15,268	16,864	17,284	17,641	17,971	18,064
SCWD	42,295	44,103	47,894	47,276	46,927	46,569	46,561
VWC	39,779	42,700	48,358	52,130	51,935	51,789	51,647
Total	**99,982**	**106,573**	**118,664**	**122,641**	**122,641**	**122,641**	**122,641**

Source: 2015 UWMP, Table C-5

Notes:

(a) The distribution of existing and planned supplies does not represent a formal allocation of water supplies.

(b) Planned groundwater supplies represent new groundwater well capacity that may be required by an individual purveyor's production objectives in the Alluvial Aquifer and the Saugus Formation, including 3,775 AFY of restored production from VWC Well 201 and approximately 9,560 AFY from replacement and new Saugus Formation wells. When combined with existing purveyor and non-purveyor groundwater supplies, total groundwater production is consistent with the 1977 single dry-year levels identified in Table 3-8 of the 2009 Groundwater Basin Yield Analysis. As indicated in 2015 UWMP Table 3-11, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 4.

(c) Conversion of Newhall Land agricultural groundwater supplies to VWC M&I supplies.

(d) Up to four new and replacement wells are planned to provide additional dry-year supply and would typically be used only during dry years.

(e) VWC Well 201 is planned to be returned to service by 2017 with treatment under a permit form the DDW.

(f) Planned recycled water is the total projected recycled water demand from Table 205 UWMP 4-3 less existing use. Refer to 2015 UWMP Section 4, including Section 4.4, for further discussion and information regarding factors having the potential to affect the availability of recycled water supplies.

(g) Firm withdrawal capacity under existing Rosedale Rio-Bravo Banking Program to be expanded by 7,000 AFY by 2017 (for a total of existing and planned supply of 10,000 AFY). An additional expansion of 10,000 AF is anticipated by 2030.

(h) Additional banking program with firm withdrawal capacity of 5,000 AFY after 2045 when Semitropic Bank contract expires.

TABLE C-6
SINGLE DRY YEAR: DEMAND COMPARISON TO TOTAL SUPPLIES

	2020	2025	2030	2035	2040	2045	2050
Water Demands [a][b]							
LACWWD 36[c]							
Demand w/out Plumbing Code Savings	2,750	3,300	3,850	4,400	4,950	5,500	6,050
Demand w/ Plumbing Code Savings	2,640	3,190	3,630	4,070	4,620	5,060	5,610
Demand w/ Plumbing Code Savings and Active Conservation	2,530	2,970	3,410	3,850	4,290	4,730	5,170
Existing and Planned Supplies	*3,703*	*4,502*	*5,548*	*5,951*	*6,139*	*6,312*	*6,368*
NCWD							
Demand w/out Plumbing Code Savings	12,650	14,520	15,840	17,160	18,480	19,800	21,120
Demand w/ Plumbing Code Savings	12,650	13,640	14,520	15,510	16,610	17,710	18,810
Demand w/ Plumbing Code Savings and Active Conservation	11,110	11,770	12,320	12,980	13,860	14,740	15,620
Existing and Planned Supplies	*14,255*	*15,268*	*16,864*	*17,284*	*17,641*	*17,971*	*18,064*
SCWD							
Demand w/out Plumbing Code Savings	35,750	38,720	41,690	44,660	47,630	50,600	53,570
Demand w/ Plumbing Code Savings	34,650	36,740	38,830	41,140	43,450	45,870	48,290
Demand w/ Plumbing Code Savings and Active Conservation	31,240	32,010	32,890	33,880	35,640	37,290	39,600
Existing and Planned Supplies	*42,295*	*44,103*	*47,894*	*47,276*	*46,927*	*46,569*	*46,561*
VWC							
Demand w/out Plumbing Code Savings	36,190	42,570	49,060	54,230	54,230	54,230	54,230
Demand w/ Plumbing Code Savings	34,430	39,710	44,990	49,280	49,060	48,840	48,730
Demand w/ Plumbing Code Savings and Active Conservation	30,910	35,310	40,260	44,000	43,560	43,230	42,900
Existing and Planned Supplies	*39,779*	*42,700*	*48,358*	*52,130*	*51,935*	*51,789*	*51,647*
Regional Summary							
Demand w/out Plumbing Code Savings	87,340	99,110	110,440	120,450	125,290	130,130	134,970
Demand w/ Plumbing Code Savings	84,370	93,280	101,970	110,000	113,740	117,480	121,440
Demand w/ Plumbing Code Savings and Active Conservation	75,790	82,060	88,880	94,710	97,350	99,990	103,290
Total Existing and Planned Supplies	**99,982**	**106,573**	**118,664**	**122,641**	**122,641**	**122,641**	**122,641**

Source: 2015 UWMP, Table C-6

Notes:

(a) From 2015 UWMP Table 2-28 (source: MWM 2016).

(b) Includes a 10 percent increase in demand during dry years.
(c) LACWWD 36 included for purposes of providing regional completeness; however, it is not required to prepare an UWMP.

[This page intentionally left blank.]

APPENDIX 3

[This page intentionally left blank.]

TABLE C-7A
FOUR-YEAR DRY PERIOD: EXISTING WATER SUPPLIES

Existing Supplies	2020	2025	2030	2035	2040	2045	2050
Existing Supplies[a][b]							
Existing Groundwater[c]							
Alluvial Aquifer							
LACWWD 36							
NCWD	1,125	1,125	1,125	1,125	1,125	1,125	1,125
SCWD	7,675	7,700	7,725	7,775	7,775	7,775	7,775
VWC	11,550	11,525	11,500	11,450	11,450	11,450	11,450
Total	*20,350*	*20,350*	*20,350*	*20,350*	*20,350*	*20,350*	*20,350*
Saugus Formation							
LACWWD 36	500	500	500	500	500	500	500
NCWD	4,975	4,975	4,975	4,975	4,975	4,975	4,975
SCWD	3,300	3,300	3,300	3,300	3,300	3,300	3,300
VWC	6,103	6,689	7,397	7,579	7,372	7,210	7,046
Total	*14,878*	*15,464*	*16,172*	*16,354*	*16,147*	*15,985*	*15,821*
Recycled Water							
LACWWD 36	-	-	-	-	-	-	-
NCWD	-	-	-	-	-	-	-
SCWD	-	-	-	-	-	-	-
VWC	450	450	450	450	450	450	450
Total	*450*	*450*	*450*	*450*	*450*	*450*	*450*
Imported Water							
SWP Table A Amount[d]							
LACWWD 36	2,005	2,651	2,872	3,165	3,311	3,437	3,491
NCWD	2,577	3,146	3,455	3,941	4,417	4,827	5,101
SCWD	17,038	19,019	18,370	18,493	18,646	18,691	18,929
VWC	9,780	6,584	6,703	5,801	5,027	4,445	3,880
Total	*31,400*	*31,400*	*31,400*	*31,400*	*31,400*	*31,400*	*31,400*
SWP Flexible Storage Accounts[e]							
LACWWD 36	97	128	107	118	123	128	130
NCWD	124	152	129	147	165	180	190
SCWD	822	918	684	689	695	696	705
VWC	472	318	250	216	187	166	145

Total	*1,515*	*1,515*	*1,170*	*1,170*	*1,170*	*1,170*	*1,170*
Buena Vista-Rosedale[k]							
LACWWD 36	702	929	1,006	1,051	1,067	1,084	1,078
NCWD	903	1,102	1,210	1,309	1,424	1,522	1,576
SCWD	5,969	6,663	6,435	6,141	6,009	5,894	5,846
VWC	3,426	2,307	2,348	2,500	2,500	2,500	2,500
Total	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*
Nickel Water - Newhall Land[f]							
VWC	1,607	1,607	1,607	1,607	1,607	1,607	1,607
Total	*1,607*	*1,607*	*1,607*	*1,607*	*1,607*	*1,607*	*1,607*
Yuba Accord							
LACWWD 36	64	84	0	0	0	0	0
NCWD	82	100	0	0	0	0	0
SCWD	543	606	0	0	0	0	0
VWC	311	210	0	0	0	0	0
Total	*1,000*	*1,000*	-	-	-	-	-
Banking and Exchange Programs							
Rosedale Rio-Bravo Bank[g]							
LACWWD 36	192	253	274	302	316	328	333
NCWD	246	301	330	377	422	461	487
SCWD	1,628	1,817	1,755	1,767	1,781	1,786	1,808
VWC	934	629	640	554	480	425	371
Total	*3,000*	*3,000*	*3,000*	*3,000*	*3,000*	*3,000*	*3,000*
Semitropic Bank[h]							
LACWWD 36	319	422	457	504	527	547	
NCWD	410	501	550	628	703	769	
SCWD	2,713	3,028	2,925	2,945	2,969	2,976	
VWC	1,557	1,048	1,067	924	800	708	
Total	*5,000*	*5,000*	*5,000*	*5,000*	*5,000*	*5,000*	-
Semitropic - Newhall Land Bank[i]							
VWC	4,950	4,950	4,950	4,950	4,950	4,950	4,950
Total	*4,950*	*4,950*	*4,950*	*4,950*	*4,950*	*4,950*	*4,950*
Rosedale Rio-Bravo Exchange[j]							
LACWWD 36	152	0	0	0	0	0	0
NCWD	195	0	0	0	0	0	0
SCWD	1,289	0	0	0	0	0	0
VWC	740	0	0	0	0	0	0

Total	*2,375*	-	-	-	-	-	-
West Kern Exchange[(j)]							
LACWWD 36	8	0	0	0	0	0	0
NCWD	10	0	0	0	0	0	0
SCWD	68	0	0	0	0	0	0
VWC	39	0	0	0	0	0	0
Total	*125*	-	-	-	-	-	-
Total Existing Supplies							
LACWWD 36	4,038	4,968	5,216	5,640	5,844	6,024	5,532
NCWD	10,647	11,401	11,775	12,501	13,230	13,858	13,454
SCWD	41,045	43,050	41,196	41,110	41,176	41,119	38,364
VWC	41,920	36,317	36,913	36,031	34,824	33,910	32,398
Total	**97,650**	**95,736**	**95,099**	**95,281**	**95,074**	**94,912**	**89,748**

Source: 2015 UWMP, Table C-7A

Notes:

(a) The distribution of existing and planned supplies does not represent a formal allocation of water supplies.

(b) LACWWD 36 included for purposes of providing regional completeness; however, it is not required to prepare an UWMP.

(c) Existing supplies represent the quantity of groundwater anticipated to be pumped with existing wells. As indicated in Tables 7 and 8, and in Tables 3-4 and 3-5 of the 2009 Groundwater Basin Yield Analysis, individual purveyors may have well capacity in excess of quantities shown above. As indicated in 2015 UWMP Table 3-12A, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 4.

(d) SWP supplies from Table 2, based on 1931-1934 supplies from 2015 DCR.

(e) Includes both CLWA and Ventura County entities flexible storage accounts. Extended term of agreement with Ventura County expires at the end of 2025.

(f) Existing Newhall Land supply committed under approved Newhall Ranch Specific Plan. Assumed to be transferred to CLWA or VWC during Newhall Ranch development, and available for annual purchase prior to that.

(g) CLWA has an existing firm withdrawal capacity of 3,000 AFY and a storage capacity of 100,000 AF. There is currently 94,178 AF of recoverable water in storage.

(h) CLWA has a maximum firm withdrawal capacity of 5,000 AFY and a storage capacity of 15,000 AF. Additionally, CLWA has 35,970 AF of recoverable water stored that may be recovered using this withdrawal capacity.

(i) Newhall Land has a maximum withdrawal capacity of 4,950 AFY and a storage capacity of 55,000 AF. Newhall Land had 32,507 AF of recoverable water as of 1/1/16. This is an existing Newhall Land supply, assumed to be transferred to CLWA or VWC during Newhall Ranch development, with firm withdrawal capacity made available to CLWA prior to that. Delivery of stored water from this program is assumed available to VWC.

(j) Exchange recovery assumed to occur sometime during the four-year dry period, for an average annual supply of one-forth of the total recoverable water available.

(k) Distribution of Buena Vista Supply reflects (1) 500 AF of supply dedicated to the pending Tesoro Del Valle annexation into CLWA and NCWD beginning in 2020, and (2) 2,500 AF dedicated to the pending Legacy Village annexation into CLWA and VWX beginning 2035. Prior to these demands developing the entire 11,000 AF of this supply would be available to the entire CLWA service area.

TABLE C-7B

THREE-YEAR DRY PERIOD: EXISTING WATER SUPPLIES

Existing Supplies	2020	2025	2030	2035	2040	2045	2050
Existing Supplies[a][b]							
Existing Groundwater[c]							
Alluvial Aquifer							
LACWWD 36							
NCWD	1,125	1,125	1,125	1,125	1,125	1,125	1,125
SCWD	7,675	7,700	7,725	7,775	7,775	7,775	7,775
VWC	11,550	11,525	11,500	11,450	11,450	11,450	11,450
Total	*20,350*	*20,350*	*20,350*	*20,350*	*20,350*	*20,350*	*20,350*
Saugus Formation							
LACWWD 36	500	500	500	500	500	500	500
NCWD	4,975	4,975	4,975	4,975	4,975	4,975	4,975
SCWD	3,300	3,300	3,300	3,300	3,300	3,300	3,300
VWC	5,846	6,400	7,081	7,255	7,051	6,890	6,727
Total	*14,621*	*15,175*	*15,856*	*16,030*	*15,826*	*15,665*	*15,502*
Recycled Water							
LACWWD 36	-	-	-	-	-	-	-
NCWD	-	-	-	-	-	-	-
SCWD	-	-	-	-	-	-	-
VWC	450	450	450	450	450	450	450
Total	*450*	*450*	*450*	*450*	*450*	*450*	*450*
Imported Water							
SWP Table A Amount[d]							
LACWWD 36	1,236	1,601	1,718	1,866	1,956	2,034	2,070
NCWD	1,756	2,080	2,231	2,478	2,752	2,989	3,147
SCWD	10,647	11,634	11,129	11,031	11,133	11,171	11,323
VWC	6,161	4,186	4,222	3,625	3,159	2,806	2,460
Total	*19,800*	*19,500*	*19,300*	*19,000*	*19,000*	*19,000*	*19,000*
SWP Flexible Storage Accounts[e]							
LACWWD 36	126	166	139	153	161	167	170
NCWD	179	215	180	203	226	245	258
SCWD	1,086	1,205	900	906	914	917	930
VWC	629	434	341	298	259	230	202
Total	*2,020*	*2,020*	*1,560*	*1,560*	*1,560*	*1,560*	*1,560*

Buena Vista-Rosedale [k]							
LACWWD 36	687	903	979	1,032	1,049	1,068	1,064
NCWD	976	1,173	1,272	1,370	1,477	1,569	1,617
SCWD	5,915	6,563	6,343	6,099	5,974	5,863	5,819
VWC	3,423	2,361	2,406	2,500	2,500	2,500	2,500
Total	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*
Nickel Water - Newhall Land[f]							
VWC	1,607	1,607	1,607	1,607	1,607	1,607	1,607
Total	*1,607*	*1,607*	*1,607*	*1,607*	*1,607*	*1,607*	*1,607*
Yuba Accord							
LACWWD 36	62	82	0	0	0	0	0
NCWD	89	107	0	0	0	0	0
SCWD	538	597	0	0	0	0	0
VWC	311	215	0	0	0	0	0
Total	*1,000*	*1,000*	-	-	-	-	-
Banking and Exchange Programs							
Rosedale Rio-Bravo Bank[g]							
LACWWD 36	187	246	267	295	309	321	327
NCWD	266	320	347	391	435	472	497
SCWD	1,613	1,790	1,730	1,742	1,758	1,764	1,788
VWC	933	644	656	572	499	443	388
Total	*3,000*	*3,000*	*3,000*	*3,000*	*3,000*	*3,000*	*3,000*
Semitropic Bank[h]							
LACWWD 36	312	410	445	491	515	535	
NCWD	443	533	578	652	724	787	
SCWD	2,689	2,983	2,883	2,903	2,930	2,940	
VWC	1,556	1,073	1,094	954	831	738	
Total	*5,000*	*5,000*	*5,000*	*5,000*	*5,000*	*5,000*	-
Semitropic - Newhall Land Bank[i]							
VWC	4,950	4,950	4,950	4,950	4,950	4,950	4,950
Total	*4,950*	*4,950*	*4,950*	*4,950*	*4,950*	*4,950*	*4,950*
Rosedale Rio-Bravo Exchange[j]							
LACWWD 36	198	0	0	0	0	0	0
NCWD	281	0	0	0	0	0	0
SCWD	1,703	0	0	0	0	0	0
VWC	985	0	0	0	0	0	0
Total	*3,167*	-	-	-	-	-	-

West Kern Exchange[j]							
LACWWD 36	10	0	0	0	0	0	0
NCWD	15	0	0	0	0	0	0
SCWD	90	0	0	0	0	0	0
VWC	52	0	0	0	0	0	0
Total	*167*	-	-	-	-	-	-
Total Existing Supplies							
LACWWD 36	3,319	3,908	4,049	4,336	4,489	4,625	4,130
NCWD	10,105	10,529	10,708	11,194	11,713	12,162	11,619
SCWD	35,254	35,771	34,009	33,755	33,784	33,730	30,935
VWC	38,452	33,845	34,307	33,662	32,756	32,064	30,735
Total	**87,131**	**84,052**	**83,073**	**82,947**	**82,743**	**82,582**	**77,419**

Source: 2015 UWMP, Table C-7B

Notes:

(a) The distribution of existing and planned supplies does not represent a formal allocation of water supplies.

(b) LACWWD 36 included for purposes of providing regional completeness; however, it is not required to prepare an UWMP.

(c) Existing supplies represent the quantity of groundwater anticipated to be pumped with existing wells. As indicated in Tables 7 and 8, and in Tables 3-4 and 3-5 of the 2009 Groundwater Basin Yield Analysis, individual purveyors may have well capacity in excess of quantities shown above. As indicated in 2015 UWMP Table 3-12B, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 4.

(d) SWP supplies from Table 2, based on 1990-92 supplies from 2015 DCR.

(e) Includes both CLWA and Ventura County entities flexible storage accounts. Extended term of agreement with Ventura County expires at the end of 2025.

(f) Existing Newhall Land supply committed under approved Newhall Ranch Specific Plan. Assumed to be transferred to CLWA or VWC during Newhall Ranch development, and available for annual purchase prior to that.

(g) CLWA has an existing firm withdrawal capacity of 3,000 AFY and a storage capacity of 100,000 AF. There is currently 94,178 AF of recoverable water in storage.

(h) CLWA has a maximum firm withdrawal capacity of 5,000 AFY and a storage capacity of 15,000 AF. Additionally, CLWA has 35,970 AF of recoverable water stored that may be recovered using this withdrawal capacity.

(i) Newhall Land has a maximum withdrawal capacity of 4,950 AFY and a storage capacity of 55,000 AF. Newhall Land had 32,507 AF of recoverable water as of 1/1/16. This is an existing Newhall Land supply, assumed to be transferred to CLWA or VWC during Newhall Ranch development, with firm withdrawal capacity made available to CLWA prior to that. Delivery of stored water from this program is assumed available to VWC.

(j) Exchange recovery assumed to occur sometime during the three-year dry period, for an average annual supply of one-third of the total recoverable water available.

(k) Distribution of Buena Vista Supply reflects (1) 500 AF of supply dedicated to the pending Tesoro Del Valle annexation into CLWA and NCWD beginning in 2020, and (2) 2,500 AF dedicated to the pending Legacy Village annexation into CLWA and VWX beginning 2035. Prior to these demands developing the entire 11,000 AF of this supply would be available to the entire CLWA service area.

TABLE C-8A
FOUR-YEAR DRY PERIOD: PLANNED AND TOTAL WATER SUPPLIES

Planned Supplies	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
Planned Supplies							
Future Groundwater[a][b]							
Alluvial Aquifer							
LACWWD 36							
NCWD	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0
VWC[c]	2,000	4,000	5,000	7,000	7,000	7,000	7,000
Total	*2,000*	*4,000*	*5,000*	*7,000*	*7,000*	*7,000*	*7,000*
Saugus Formation[d]							
LACWWD 36	643	663	646	668	707	740	759
NCWD	3,227	3,277	3,247	3,292	3,397	3,490	3,555
SCWD	8,176	7,522	6,859	6,611	6,674	6,711	6,790
VWC (Restored Well) [e]	3,775	3,775	3,775	3,775	3,775	3,775	3,775
VWC (New Wells)	0	0	0	0	0	0	0
Total	*15,822*	*15,236*	*14,528*	*14,346*	*14,553*	*14,715*	*14,879*
Recycled Water[f]							
LACWWD 36	0	0	0	0	0	0	0
NCWD	0	249	249	249	249	249	249
SCWD	300	524	524	524	524	524	524
VWC	265	4,383	6,854	8,831	8,831	8,831	8,831
Total	*565*	*5,156*	*7,627*	*9,604*	*9,604*	*9,604*	*9,604*
Banking Programs							
Rosedale Rio-Bravo Bank[g]							
LACWD 36	447	591	1,555	1,713	1,792	1,861	1,890
NCWD	574	701	1,871	2,134	2,391	2,613	2,762
SCWD	3,798	4,240	9,946	10,012	10,095	10,119	10,248
VWC	2,180	1,468	3,629	3,141	2,722	2,407	2,101
Total	*7,000*	*7,000*	*17,000*	*17,000*	*17,000*	*17,000*	*17,000*
Future Additonal Bank[h]							
LACWWD 36	0	0	0	0	0	0	556
NCWD	0	0	0	0	0	0	812
SCWD	0	0	0	0	0	0	3,014
VWC	0	0	0	0	0	0	618

Total	-	-	-	-	-	-	*5,000*
Total Planned Supplies							
LACWWD 36	1,090	1,254	2,201	2,382	2,499	2,601	3,204
NCWD	3,802	4,227	5,367	5,674	6,037	6,352	7,378
SCWD	12,275	12,286	17,329	17,147	17,293	17,354	20,576
VWC	8,220	13,626	19,258	22,747	22,328	22,013	22,324
Total	*25,387*	*31,392*	*44,155*	*47,950*	*48,157*	*48,319*	*53,483*
Total Existing and Planned Supplies							
LACWWD 36	5,128	6,222	7,417	8,022	8,343	8,625	8,736
NCWD	14,449	15,628	17,142	18,175	19,268	20,210	20,832
SCWD	53,319	55,336	58,525	58,257	58,469	58,473	58,940
VWC	50,141	49,942	56,171	58,777	57,151	55,923	54,723
Total	**123,037**	**127,128**	**139,254**	**143,231**	**143,231**	**143,231**	**143,231**

Source: 2015 UWMP, Table C-8A

Notes:

(a) The distribution of existing and planned supplies does not represent a formal allocation of water supplies.

(b) Planned groundwater supplies represent new groundwater well capacity that may be required by an individual purveyor's production objectives in the Alluvial Aquifer and the Saugus Formation, including 3,775 AFY of restored production from VWC Well 201 and approximately 11,100 AFY from replacement and new Saugus Formation wells. When combined with existing purveyor and non-purveyor groundwater supplies, total groundwater production is consistent with the 1931-1934 multiple dry-year levels identified in Table 3-8 of the 2009 Groundwater Basin Yield Analysis. As indicated in 2015 UWMP Table 3-12A, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 4.

(c) Conversion of Newhall Land agricultural groundwater supplies to VWC M&I supplies.

(d) Up to four new and replacement wells are planned to provide additional dry-year supply and would typically be used only during dry years.

(e) VWC Well 201 is planned to be returned to service by 2017 with treatment under a permit form the DDW.

(f) Planned recycled water is the total projected recycled water demand from 2015 UWMP Table 4-3 less existing use. Refer to 2015 UWMP Section 4, including Section 4.4, for further discussion and information regarding factors having the potential to affect the availability of recycled water supplies.

(g) Firm withdrawal capacity under existing Rosedale Rio-Bravo Banking Program to be expanded by 7,000 AFY by 2017 (for a total of existing and planned supply of 10,000 AFY). An additional expansion of 10,000 AF is anticipated by 2030.

(h) Additional banking program with firm withdrawal capacity of 5,000 AFY after 2045 when Semitropic Bank contract expires.

TABLE C-8B
THREE-YEAR DRY PERIOD: PLANNED AND TOTAL WATER SUPPLIES

Planned Supplies	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
Planned Supplies							
Future Groundwater[a][b]							
Alluvial Aquifer							
LACWWD 36							
NCWD	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0
VWC[c]	2,000	4,000	5,000	7,000	7,000	7,000	7,000
Total	*2,000*	*4,000*	*5,000*	*7,000*	*7,000*	*7,000*	*7,000*
Saugus Formation[d]							
LACWWD 36	621	643	630	654	692	726	745
NCWD	3,008	3,047	3,011	3,051	3,152	3,241	3,303
SCWD	7,826	7,209	6,578	6,341	6,406	6,444	6,525
VWC (Restored Well) [e]	3,775	3,775	3,775	3,775	3,775	3,775	3,775
VWC (New Wells)	0	0	0	0	0	0	0
Total	*15,229*	*14,675*	*13,994*	*13,820*	*14,024*	*14,185*	*14,348*
Recycled Water[f]							
LACWWD 36	0	0	0	0	0	0	0
NCWD	0	249	249	249	249	249	249
SCWD	300	524	524	524	524	524	524
VWC	265	4,383	6,854	8,831	8,831	8,831	8,831
Total	*565*	*5,156*	*7,627*	*9,604*	*9,604*	*9,604*	*9,604*
Banking Programs							
Rosedale Rio-Bravo Bank[g]							
LACWD 36	437	575	1,514	1,670	1,750	1,820	1,852
NCWD	621	747	1,965	2,217	2,462	2,675	2,816
SCWD	3,764	4,176	9,802	9,870	9,962	9,995	10,131
VWC	2,178	1,503	3,719	3,244	2,826	2,510	2,201
Total	*7,000*	*7,000*	*17,000*	*17,000*	*17,000*	*17,000*	*17,000*
Future Additonal Bank[h]							
LACWWD 36	0	0	0	0	0	0	545
NCWD	0	0	0	0	0	0	828
SCWD	0	0	0	0	0	0	2,980
VWC	0	0	0	0	0	0	647

Total	-	-	-	-	-	-	*5,000*
Total Planned Supplies							
LACWWD 36	1,058	1,218	2,144	2,323	2,442	2,545	3,141
NCWD	3,629	4,043	5,225	5,516	5,863	6,164	7,195
SCWD	11,890	11,910	16,904	16,735	16,891	16,963	20,160
VWC	8,218	13,661	19,348	22,850	22,432	22,116	22,455
Total	*24,794*	*30,831*	*43,621*	*47,424*	*47,628*	*47,789*	*52,952*
Total Existing and Planned Supplies							
LACWWD 36	4,377	5,126	6,193	6,660	6,931	7,170	7,271
NCWD	13,733	14,572	15,934	16,711	17,577	18,327	18,815
SCWD	47,145	47,680	50,913	50,489	50,675	50,693	51,095
VWC	46,671	47,505	53,654	56,511	55,188	54,181	53,190
Total	**111,925**	**114,883**	**126,694**	**130,371**	**130,371**	**130,371**	**130,371**

Source: 2015 UWMP, Table C-8B

Notes:

(a) The distribution of existing and planned supplies does not represent a formal allocation of water supplies.

(b) Planned groundwater supplies represent new groundwater well capacity that may be required by an individual purveyor's production objectives in the Alluvial Aquifer and the Saugus Formation, including 3,775 AFY of restored production from VWC Well 201 and approximately 10,550 AFY from replacement and new Saugus Formation wells. When combined with existing purveyor and non-purveyor groundwater supplies, total groundwater production is consistent with the 1990-1992 multiple dry-year levels identified in Table 3-8 of the 2009 Groundwater Basin Yield Analysis. As indicated in 2015 UWMP Table 3-12B, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 4.

(c) Conversion of Newhall Land agricultural groundwater supplies to VWC M&I supplies.

(d) Up to four new and replacement wells are planned to provide additional dry-year supply and would typically be used only during dry years.

(e) VWC Well 201 is planned to be returned to service by 2017 with treatment under a permit form the DDW.

(f) Planned recycled water is the total projected recycled water demand from 2015 UWMP Table 4-3 less existing use. Refer to 2015 UWMP Section 4, including Section 4.4, for further discussion and information regarding factors having the potential to affect the availability of recycled water supplies.

(g) Firm withdrawal capacity under existing Rosedale Rio-Bravo Banking Program to be expanded by 7,000 AFY by 2017 (for a total of existing and planned supply of 10,000 AFY). An additional expansion of 10,000 AF is anticipated by 2030.

(h) Additional banking program with firm withdrawal capacity of 5,000 AFY after 2045 when Semitropic Bank contract expires.

TABLE C-9A
FOUR-YEAR DRY PERIOD: DEMAND COMPARISON TO TOTAL SUPPLIES

	2020	2025	2030	2035	2040	2045	2050
Water Demands [a][b]							
LACWWD 36[c]							
Demand w/out Plumbing Code Savings	2,750	3,300	3,850	4,400	4,950	5,500	6,050
Demand w/ Plumbing Code Savings	2,640	3,190	3,630	4,070	4,620	5,060	5,610
Demand w/ Plumbing Code Savings and Active Conservation	2,530	2,970	3,410	3,850	4,290	4,730	5,170
Existing and Planned Supplies	*5,128*	*6,222*	*7,417*	*8,022*	*8,343*	*8,625*	*8,736*
NCWD							
Demand w/out Plumbing Code Savings	12,650	14,520	15,840	17,160	18,480	19,800	21,120
Demand w/ Plumbing Code Savings	12,650	13,640	14,520	15,510	16,610	17,710	18,810
Demand w/ Plumbing Code Savings and Active Conservation	11,110	11,770	12,320	12,980	13,860	14,740	15,620
Existing and Planned Supplies	*14,449*	*15,628*	*17,142*	*18,175*	*19,268*	*20,210*	*20,832*
SCWD							
Demand w/out Plumbing Code Savings	35,750	38,720	41,690	44,660	47,630	50,600	53,570
Demand w/ Plumbing Code Savings	34,650	36,740	38,830	41,140	43,450	45,870	48,290
Demand w/ Plumbing Code Savings and Active Conservation	31,240	32,010	32,890	33,880	35,640	37,290	39,600
Existing and Planned Supplies	*53,319*	*55,336*	*58,525*	*58,257*	*58,469*	*58,473*	*58,940*
VWC							
Demand w/out Plumbing Code Savings	36,190	42,570	49,060	54,230	54,230	54,230	54,230
Demand w/ Plumbing Code Savings	34,430	39,710	44,990	49,280	49,060	48,840	48,730
Demand w/ Plumbing Code Savings and Active Conservation	30,910	35,310	40,260	44,000	43,560	43,230	42,900
Existing and Planned Supplies	*50,141*	*49,942*	*56,171*	*58,777*	*57,151*	*55,923*	*54,723*
Regional Summary							
Demand w/out Plumbing Code Savings	87,340	99,110	110,440	120,450	125,290	130,130	134,970
Demand w/ Plumbing Code Savings	84,370	93,280	101,970	110,000	113,740	117,480	121,440
Demand w/ Plumbing Code Savings and Active Conservation	75,790	82,060	88,880	94,710	97,350	99,990	103,290
Total Existing and Planned Supplies	**123,037**	**127,128**	**139,254**	**143,231**	**143,231**	**143,231**	**143,231**

Source: 2015 UWMP, Table C-9A
Notes:

(a) From 2015 UWMP Table 2-28 (MWM 2016).

(b) Includes a 10 percent increase in demand during dry years.

(c) LACWWD 36 included for purposes of providing regional completeness; however, it is not required to prepare an UWMP.

TABLE C-9B

THREE-YEAR DRY PERIOD: DEMAND COMPARISON TO TOTAL SUPPLIES

	2020	2025	2030	2035	2040	2045	2050
Water Demands [a][b]							
LACWWD 36[c]							
Demand w/out Plumbing Code Savings	2,750	3,300	3,850	4,400	4,950	5,500	6,050
Demand w/ Plumbing Code Savings	2,640	3,190	3,630	4,070	4,620	5,060	5,610
Demand w/ Plumbing Code Savings and Active Conservation	2,530	2,970	3,410	3,850	4,290	4,730	5,170
Existing and Planned Supplies	*4,377*	*5,126*	*6,193*	*6,660*	*6,931*	*7,170*	*7,271*
NCWD							
Demand w/out Plumbing Code Savings	12,650	14,520	15,840	17,160	18,480	19,800	21,120
Demand w/ Plumbing Code Savings	12,650	13,640	14,520	15,510	16,610	17,710	18,810
Demand w/ Plumbing Code Savings and Active Conservation	11,110	11,770	12,320	12,980	13,860	14,740	15,620
Existing and Planned Supplies	*13,733*	*14,572*	*15,934*	*16,711*	*17,577*	*18,327*	*18,815*
SCWD							
Demand w/out Plumbing Code Savings	35,750	38,720	41,690	44,660	47,630	50,600	53,570
Demand w/ Plumbing Code Savings	34,650	36,740	38,830	41,140	43,450	45,870	48,290
Demand w/ Plumbing Code Savings and Active Conservation	31,240	32,010	32,890	33,880	35,640	37,290	39,600
Existing and Planned Supplies	*47,145*	*47,680*	*50,913*	*50,489*	*50,675*	*50,693*	*51,095*
VWC							
Demand w/out Plumbing Code Savings	36,190	42,570	49,060	54,230	54,230	54,230	54,230
Demand w/ Plumbing Code Savings	34,430	39,710	44,990	49,280	49,060	48,840	48,730
Demand w/ Plumbing Code Savings and Active Conservation	30,910	35,310	40,260	44,000	43,560	43,230	42,900
Existing and Planned Supplies	*46,671*	*47,505*	*53,654*	*56,511*	*55,188*	*54,181*	*53,190*
Regional Summary							
Demand w/out Plumbing Code Savings	87,340	99,110	110,440	120,450	125,290	130,130	134,970
Demand w/ Plumbing Code Savings	84,370	93,280	101,970	110,000	113,740	117,480	121,440
Demand w/ Plumbing Code Savings and Active Conservation	75,790	82,060	88,880	94,710	97,350	99,990	103,290
Total Existing and Planned Supplies	**111,925**	**114,883**	**126,694**	**130,371**	**130,371**	**130,371**	**130,371**

Source: 2015 UWMP, Table C-9B

Notes:

(a) From 2015 UWMP Table 2-28 (MWM 2016).

(b) Includes a 10 percent increase in demand during dry years.