WATER SUPPLY VERIFICATION

Mission Village
Vesting Tentative Tract Map No. 61105

Prepared for:

The County of Los Angeles
Department of Regional Planning

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1.0 INTRODUCTION

1.1 SB 221 WATER SUPPLY VERIFICATION

This Water Supply Verification (WV) is prepared for the Mission Village subdivision project (Project) by Valencia Water Company (VWC) pursuant to the requirements of Senate Bill 221 (Kuehl, Chap. 642, Stats. 2001, SB 221).[1] Effective January 1, 2002, both SB 221 and Senate Bill 610 (SB 610) were adopted as companion measures to improve the link between information on water supply availability and certain land use decisions made by cities and counties.[2] As explained below, VWC is the retail purveyor for the Project site, and Castaic Lake Water Agency (CLWA) is the wholesale water agency for the entire CLWA service area, which includes the service areas of VWC and three other retail purveyors.

Pursuant to SB 610 requirements, the Mission Village Draft EIR evaluated water service impacts associated with the Project and its alternatives, and included VWC's SB 610 Water Supply Assessment for the Project (WSA; July 2010). In the July 2010 WSA, VWC determined that its total projected water supplies will meet the projected water demands associated with the Project in combination with existing and other planned uses within VWC's service area. VWC's WSA also determined that both VWC and CLWA have committed sufficient capital resources and planned investments in various water programs and facilities to serve the existing and planned demand associated with the Project, in addition to existing and planned future uses, including agricultural and industrial uses, in the Santa Clarita Valley during variable years (normal, single-dry, and multiple-dry) over the next 25-year planning horizon.[3]

On October 25, 2011, the Los Angeles County (County) Board of Supervisors (Board) certified the Mission Village Final EIR, and adopted the CEQA Findings, Statement of Overriding Considerations, and Mitigation Monitoring Plan. At that time, the Board also indicated its intent to approve the Project, and directed County Counsel to return with the findings and conditions of approval. Thereafter, on May 15, 2012, the Board approved the Project (vesting tentative tract map and related approvals) and corresponding findings and conditions of approval. The Project applicant is The Newhall Land and Farming Company (Newhall).

An SB 221 water verification is required for any "subdivision," which is defined to mean a proposed residential development of more than 500 dwelling units. (Gov. Code §66473.7(a)(1).) The verification must be from the applicable "public water system," which is defined to mean the "water supplier that is, ... a public water system, as defined in section 10912 of the Water Code, that may supply water for a subdivision." (*Id*. §66473.7(a)(3).) Section 10912 of the Water

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[1] SB 221 was enacted in 2001, and it amended Business and Professions Code section 11010 and Government Code section 65867.5 (Subdivision Map Act), and added Government Code sections 66455.3 and 66473.7 (Subdivision Map Act).

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

[3] See VWC "Water Supply Assessment" prepared for the County's Department of Regional Planning (July 2010), a copy of which is appended to the Mission Village Draft EIR, Volume VII, Appendix 4.8ab.

Code defines a “public water system” to mean a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections.

The Mission Village project includes a residential development of more than 500 dwelling units; and, therefore, meets the definition of a “subdivision” that requires a SB 221 water supply verification. VWC’s current service area serves piped water to the public, including approximately 31,000 service connections in the Santa Clarita Valley. VWC’s service area includes Valencia, Stevenson Ranch, and portions of the City of Santa Clarita and the unincorporated communities of Newhall, Saugus, and Castaic. Thus, VWC operates a “public water system” as defined in section 10912 of the Water Code.

Consistent with Government Code section 66473.7(b)(1), in August 2014, Newhall requested that VWC prepare this WV in order to provide proof of the availability of a sufficient water supply to meet the demand associated with the Mission Village project, in addition to all existing and planned future uses within VWC’s service area in the Santa Clarita Valley. Currently, VWC’s service area includes portions of both the Newhall Ranch Specific Plan site and the Mission Village project site. Concurrently with this request, Newhall has applied to VWC to expand its service area to include water service to the entire Mission Village project site. Upon such approval, VWC would be the retail water purveyor for the approved Mission Village project.

1.2 PURPOSE OF THE WATER SUPPLY VERIFICATION

The purpose of SB 221 is to authorize the legislative body (or advisory agency) with tentative map approval authority to include as a condition in any tentative subdivision map a requirement that "a sufficient water supply . . . be available." (Gov. Code §66437.7(b)(1).) "Sufficient water supply" means the total water supplies available during normal, single-dry, and multiple-dry years within a 20-year projection that will meet the projected demand associated with the proposed subdivision, in addition to existing and planned future uses, including, but not limited to, agricultural and industrial uses. (Gov. Code §66437.7(a)(2).)

In determining "sufficient water supply" all of the following factors must be considered:

(a) the availability of water supplies over a historical record of at least 20 years;

(b) the applicability of an urban water shortage contingency analysis prepared pursuant to section 10632 of the Water Code;

(c) the reduction in water supply allocated to a specific water use sector pursuant to a resolution or ordinance adopted, or a contract entered into, by the public water system, as long as that resolution, ordinance, or contract does not conflict with section 354 of the Water Code; and

(d) the amount of water that the water supplier can reasonably rely on receiving from other water supply projects. (Gov. Code §66437.7 (a)(2)(A)-(D).)

If the subdivision relies on projected water supplies that are not currently available to the public water system, the WV must substantiate its reliance on such supplies using written contracts,

proof of valid rights, copies of capital outlay programs for delivery financing, securing of construction permits, and any necessary regulatory approvals. (Gov. Code §66437.7(d)(1)-(4).)

In addition to the above requirements, the WV must include analysis of reasonably foreseeable impacts of the proposed subdivision on the availability of water resources for agricultural and industrial uses within the public water system's service area. (Gov. Code §66437.7(g).) The WV also must evaluate the entitlement to extract any groundwater on which the subdivision will rely. (Gov. Code §66437.7(h).)

1.3 MISSION VILLAGE PROJECT

The County Board certified the Final EIR (SCH No. 2005051143) for the Mission Village project on October 25, 2011. Thereafter, on May 15, 2012, the Board approved the Mission Village project findings and conditions of approval.

The Mission Village project (County Project No. 04-181-(5)) was approved to create a mixed-use development comprised of the following elements:

(a) 4,055 residential units (351 single-family homes and 3,704 multi-family homes);

(b) 1,555,100 square feet of mixed-use/commercial space;

(c) 692.7 acres of open space, including 26.8 acres of public parks, 14.7 acres for private recreation facilities, and 85.8 acres in three spineflower preserves connected to open space;

(d) 9.5 acre elementary school;

(e) 3.3 acre library;

(f) 1.5-acre fire station;

(g) 1.2-acre bus transfer station;

(h) utilities and roads; and

(i) other amenities.

The Mission Village project is the second subdivision of the Newhall Ranch Specific Plan, approved by the Board on May 27, 2003.

Based on the Mission Village Final EIR (which includes VWC's approved SB 610 WSA), the County identified the Project water demand in average/normal and dry years, and determined that an adequate supply of water is available to serve the Project, in addition to existing and planned future uses in the Santa Clarita Valley and that the Project will not contribute to any significant project or cumulative water supply impacts because it would rely on local groundwater and recycled water from local water reclamation plants (WRPs) and not rely on imported supplies from the State Water Project (SWP).[4] While litigation is pending over the

[4] Mission Village Final EIR, Section 4.8, Water Service, pp. 4.8-1 — 4.8-9, 4.8-151; and see Section 4.8, Mitigation Measure SP 4.11-15.

adequacy of the Mission Village Final EIR (*California Native Plant Society, et al. v. County of Los Angeles, et al.*, Case No. BS138001, Hon. John A. Torribio, presiding), that litigation did not challenge the sufficiency of the EIR's water demand and supply analysis for the Project, nor the adequacy of VWC's SB 610 WSA.

In approving the Project's vesting tentative tract map (subdivision), the County Board of Supervisors also adopted the following SB 221 condition of approval, which must be satisfied prior to recordation of a final map:

> "A 'Written Verification' and supporting documents from the water supplier to indicate the availability of a 'Sufficient Water Supply' as required per Section 66473.7 of the Subdivision Map Act (SB 221) shall be provided to the satisfaction of the Department of Regional Planning and Public Works prior to filing any map."[5]

This WV is intended to fully satisfy this condition.

1.4 CASTAIC LAKE WATER AGENCY

CLWA is a public water agency that serves an area of 195 square miles in Los Angeles and Ventura counties, and is one of the contractors that participate in the SWP — a water storage and delivery system maintained and operated by the California Department of Water Resources (DWR). CLWA is a water wholesaler that provides about half of the water used by Santa Clarita households and businesses. CLWA operates two potable water treatment plants/storage facilities and several miles of transmission pipelines. CLWA supplements local groundwater supplies with imported SWP water and other imported water from northern and central California. This water is treated and delivered to the local retail water purveyors in the Santa Clarita Valley. The four retail purveyors served by CLWA are VWC, Los Angeles County Waterworks District #36 (District #36), Newhall County Water District (NCWD), and Santa Clarita Water Division of CLWA (SCWD).

CLWA also delivers highly treated recycled water from one of the two existing WRPs in the Santa Clarita Valley owned by the Sanitation Districts of Los Angeles County. The recycled water is used to meet a portion of the non-potable water demands for a golf course and landscape irrigation in the Santa Clarita Valley

CLWA's water supply for wholesale purposes is principally from the SWP through its long-term water supply contract, as amended, with DWR. CLWA's current water supply contract with DWR is for 95,200 acre-feet (af) of SWP Table A Amount.

"Table A" is a term used in DWR's water supply contracts with SWP contractors. CLWA is one of 29 SWP contractors holding long-term SWP water supply contracts with DWR. The "Table A Amount" is the maximum amount of water to which a SWP contractor has a contract right to

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[5] See County Department of Public Works' conditions to the Mission Village Vesting Tentative Tract Map No. 61105, dated January 12, 2011, page 1 of 1. The conditions are attached to the County Board's "Conditions of Approval, Project Number 04-181-(5), Vesting Tentative Tract Map Number 61105-(5)," adopted on May 15, 2012. The Mission Village approved tract map may sometimes be referred to herein as VTTM 61105.

request delivery of each year under the SWP contractor's water supply contract. (It is specified in Table A of the contract.) The Table A Amount is not equivalent to actual deliveries of water in any given year, and the water actually available for delivery in any given year may be an amount *less* than the SWP contractor's Table A Amount depending upon hydrologic conditions, the amount of water in storage, the operational constraints of the SWP, requirements imposed by regulatory agencies to meet environmental water needs, the amount of water requested by other SWP contractors, climatic conditions, and other factors. As discussed below, CLWA maintains other imported supplies, such as water from the Buena Vista Water Storage District (Buena Vista), the Semitropic Water Storage District (Semitropic), the Rosedale-Rio Bravo Water Storage District (Rosedale-Rio Bravo), and the Yuba County Water Agency.

While CLWA typically is able to meet approximately one-half of the Santa Clarita Valley's urban demand principally from imported SWP water, as previously noted the availability of its SWP supply is variable and can fluctuate from year-to-year, depending on precipitation (rainfall, snow levels); regulatory restrictions; and operational conditions. SWP supply is also subject to severe curtailment during dry years.[6]

The West Branch of the California Aqueduct terminates at Castaic Lake, from which CLWA receives its SWP water. SWP water from Castaic Lake 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 million gallons per day (mgd). Treated water is delivered from the treatment plants to each of the four retail purveyors through a distribution network of pipelines and turnouts. Currently, CLWA delivers water to the four retail purveyors through 26 potable water turnouts.[7]

CLWA and the retail purveyors in the Santa Clarita Valley meet the balance of their demands primarily with local groundwater and recycled water.[8]

1.5 VALENCIA WATER COMPANY AND OTHER RETAIL WATER SUPPLIERS

VWC is an investor-owned water company, with 100% of its capital stock owned by CLWA.[9] VWC serves approximately 117,000 people in the Santa Clarita Valley and its customer base is approximately 85% residential, with the remaining 15% comprised of commercial, industrial, public authority, and irrigation customers. VWC serves a mix of approximately 50% local groundwater pumped from wells in the Upper Santa Clara River Hydrologic Area, as defined by DWR, which is located almost entirely in northwestern Los Angeles County (also known as the East Groundwater Subbasin).[10] The remaining 50% of VWC's supplies are from imported water

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6 See 2010 Urban Water Management Plan (UWMP), Final June 2011, Appendix D.

7 See Luhdorff & Scalmanini Consulting Engineers (LSCE). 2013 Santa Clarita Valley Water Report (June 2014), pp. 3-12-3-15 (2013 Santa Clarita Valley Water Report).

8 See 2010 UWMP (2011), Section 1.4.1, p. 1-8-1-10.

9 See Valencia Water Company website http://www.valenciawater.com/about/index.asp (accessed June 19, 2014).

10 *Id.*; and see 2013 Santa Clarita Valley Water Report, pp. 1-3-1-7.

purchased from CLWA; VWC also delivers recycled water for a small amount of non-potable uses (golf course, road median irrigation).[11]

A description of the four retail purveyors' service areas is provided below.

The **District #36** service area encompasses approximately 6,600 acres in the Hasley Canyon area and the unincorporated community of Val Verde. District #36 obtains its water supply from CLWA and from local groundwater.

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 supplies water from local groundwater and CLWA imported water.

The **CLWA 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 supplies water from local groundwater and CLWA imported water.

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 supplies water from local groundwater and CLWA imported water and delivers a small amount of recycled water for non-potable use.

As of 2013, the retail purveyors provide water to about 71,550 service connections in the Santa Clarita Valley. **Table 1** shows the breakdown of service connections for each purveyor.

Table 1
Retail Water Purveyor Service Connections
for the Santa Clarita Valley

Retail Water Purveyor	Connections
SCWD	29,700
District #36	1,350
NCWD	9,700
VWC	30,800
Total	**71,550**

Source: 2013 Santa Clarita Valley Water Report (June 2014)

1.6 2010 URBAN WATER MANAGEMENT PLAN

Pursuant to SB 221 requirements, the WV must substantiate that there is sufficient water to meet the demands of the proposed subdivision, plus existing and planned future uses for a 20-year horizon. (Gov. Code §66473.7(b), (c).) Government Code §66473.7(c) states that the substantial evidence supporting the WV may include the public water system's UWMP adopted pursuant to the Urban Water Management Planning Act, Water Code §§10610, et seq. (UWMP Act). The UWMP Act requires most urban water suppliers to update their UWMP every five

[11] *Ibid*.

years and submit it to DWR. In June 2011, the Valley's UWMP was updated by CLWA, in cooperation with VWC and the other retail water purveyors. The 2010 UWMP was adopted by both CLWA and NCWD on June 22, 2011, and filed with DWR. The 2010 UWMP also was adopted by VWC's Board of Directors on June 27, 2011, and filed with DWR.[12]

The 2010 UWMP contains information based on a compilation of data collected from various water resource documents, studies, and reports listed in the 2010 UWMP (Section 9.0, References). The 2010 UWMP includes the following eight major sections:

Introduction (Section 1.0);

Water Use (Section 2.0);

Water Resources (Section 3.0);

Recycled Water (Section 4.0);

Water Quality (Section 5.0);

Reliability Planning (Section 6.0);

Demand Management Measures (Section 7.0); and

Water Shortage Contingency Planning (Section 8.0).

VWC included the Mission Village project total water demand in the water demand projections contained in the 2010 UWMP (*see*, Table 2-6 of the 2010 UWMP); and, thus, the Mission Village project is already accounted for in the 2010 UWMP. Pursuant to Government Code §66437.7, this WV uses data and findings in the 2010 UWMP to verify sufficient water supply to serve the Project, in addition to all existing and planned future uses in the Santa Clarita Valley. In addition, however, the WV relies on information from numerous other water resource and planning documents, studies, and reports listed in Section 1.7, below.

1.7 DOCUMENTS USED OR RELIED ON IN PREPARING THIS WV

This WV used or relied on the documents identified below. The documents are incorporated by reference in this WV, and are available for public review upon reasonable request at VWC by contacting Keith Abercrombie (661) 295-6501. Copies of such documents also can be obtained through VWC upon reasonable request and payment of VWC's actual copying costs.

These documents — which are part of VWC's record for this WV — are organized below by subject matter and are presented chronologically, earliest first. In addition, the WV used or relied on other documents — also part of VWC's record for this WV — described in the various sections below, entitled "Written Contracts or Other Proof of Supplies" or "Permits/Approvals or Other Necessary Regulatory Approvals."

DWR Documents

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

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[12] Please see the 2010 UWMP (June 2011) for the adopted Resolutions from CLWA, NCWD, and VWC.

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/update2003.cfm, accessed June 19, 2014).

DWR. Monterey Settlement Agreement, May 5, 2003.

DWR. Monterey Plus Draft EIR, October 2007 (SCH No. 2003011118), Final EIR certified February 2010.

DWR. The State Water Project Delivery Reliability Report 2009, August 2010. (2009 Delivery Reliability Report, http://baydeltaoffice.water.ca.gov/swpreliability/Reliability2010final101210.pdf, accessed June 19, 2014.) *The 2009 Delivery Reliability Report was used in preparing the 2010 UWMP*.

DWR. The State Water Project Delivery Reliability Report 2011, June 2012. (2011 Delivery Reliability Report, http://baydeltaoffice.water.ca.gov/swpreliability/FINAL_2011_DRR.pdf, accessed June 19, 2014.)

DWR. The Draft State Water Project Delivery Reliability Report 2013, December 2013. (2013 Delivery Reliability Report, https://msb.water.ca.gov/documents/86800/202762/DRR2013_Report_20131210.pdf, accessed June 19, 2014.)

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).

Kennedy/Jenks Consultants. 2002 Draft Recycled Water Master Plan.

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

SAIC. Draft EIR — Supplemental Water Project Transfer of 41,000 af of State Water Project Table A Amount, Science Applications International Corporation (SAIC), June 2004 (SCH No. 1998041127).

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

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

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

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. Draft Program EIR Recycled Water Master Plan, Bon Terra Consulting (Bon Terra), November 2006 (SCH No. 2005041138).

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

CLWA. Letter to Board of Directors, July 1, 2010, re: CLWA Final FY 2010/11 Budget (http://santaclaritawater.com/wp-content/uploads/2012/01/Chapter-1-Executive-Summary_FINAL.pdf, accessed June 19, 2014).

CLWA Data Document/Proposed 2011 Facility Capacity Fees, April 1, 2011.

CLWA. Budget Foreword, 2013 (http://clwa.org/docs/wp-content/uploads/2013/08/ch-2-1314-budget-foreword1.pdf, accessed June 19, 2014).

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).

Memorandum of Understanding Between the Santa Clara River Valley Upper Basin Water Purveyors and United Water Conservation District (UWCD), August 2001 (MOU 2001).

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. Regional Groundwater Flow Model for the Santa Clarita Valley: Model Development and Calibration, April 2004.

CH2M Hill. Analysis of Perchlorate Containment in Groundwater Near the Whittaker-Bermite Property, Santa Clarita, California, in Support of the Department of Health Services 97-005 Permit Application, December 2004.

CH2M Hill. Analysis of Near-Term Groundwater Capture Areas for Production Wells Located Near the Whittaker-Bermite Property (Santa Clarita, California), in support of the amended 2000 UWMP, December 21, 2004.

LSCE. Impact and Response to Perchlorate Contamination, Valencia Water Company Well Q2 (Q2 Report), April 2005.

CLWA. Mitigated Negative Declaration — Groundwater Containment, Treatment and Restoration Project, August 2005.

Kennedy/Jenks. Interim Remedial Action Plan, to facilitate and restore pumping of groundwater from two Saugus Formation production wells impacted by perchlorate, approved by Department of Toxic Substances Control (DTSC), December 2005.

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

LSCE. Santa Clarita Valley Water Report 2009, May 2010 (2009 Santa Clarita Valley Water Report). *The 2009 Santa Clarita Valley Water Report was used in preparing the 2010 UWMP*.

LSCE. Santa Clarita Valley Water Report 2013, June 2014 (2013 Santa Clarita Valley Water Report).

Newhall Ranch Planning Documents

Agreement between Newhall Land and Farming Company and Semitropic Water Storage District (Semitropic) for a Newhall-Semitropic Water Banking and Exchange Program, 2001.

ISI. Nickel Water contract and environmental documentation (see, Newhall Ranch Revised Draft Additional Analysis, Volume II, Impact Sciences, Inc. (ISI) November 2002, Appendix 2.5(b), (c)).

FORMA. Newhall Ranch Specific Plan, Vols. I and II (May 2003).

Los Angeles County. Additional CEQA Findings Regarding the Newhall Ranch Final Additional Analysis to the Partially Certified Final EIR for the Newhall Ranch Specific Plan and Water Reclamation Plant. March 2003. (Los Angeles County 2003).

ISI. Revised Additional Analysis (RAA) to Newhall Ranch Specific Plan and WRP Final EIR, Volume VIII (SCH No. 1995011015), May 2003.

ISI. Draft EIR for Mission Village, Vols. I and XX (SCH No. 2005051143) October 2010.

ISI. Final EIR for Mission Village, Vols. I and VII (SCH No. 2005051143) May 2011.

ISI. Additional Environmental Information for Mission Village, Vols. VIII and IX (SCH No. 2005051143) October 2011.

ISI. Revised Draft EIR for Mission Village, Vols. X and XI (SCH No. 2005051143) October 2011.

2.0 DOCUMENTATION OF EXISTING AND PROJECTED WATER SUPPLIES

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

- Groundwater from the Alluvial aquifer;
- Groundwater from the Saugus Formation;
- Imported SWP water and other imported supplies;
- Dry-year groundwater banking programs; and
- 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. As required by SB 221 (Gov. Code §66473.7(a)(2)), the 2010 UWMP, Section 2, and the 2013 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) also are considered an important component of water supply. The conservation efforts of CLWA, VWC, and the other retail purveyors are important in reducing water demands on a long-term basis.

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.

Consistent with Government Code section 66473.7(a)(2)(C), the 2010 UWMP, Section 8, contains the water shortage contingency planning analysis that describes how CLWA, VWC, and other retail purveyors plan to respond to interruptions or significant reductions in water supply due to regional catastrophic emergencies (e.g., earthquake damage to water delivery or storage facilities, power outages, sustained droughts, etc.) and drought management. The analysis demonstrates that CLWA and the regional purveyors have planned for such emergencies through a water storage contingency plan, a drought emergency water sharing agreement, mandatory prohibitions during water shortages, consumption reduction methods by customer type, penalties for excessive water usage, and management of financial impacts to CLWA and the retail purveyors during water shortages.

The provision of water to the Mission Village subdivision will not impact the availability of water resources for industrial uses within VWC's service area because service will not be impacted by the provision of water to Mission Village due to the overall adequacy of VWC's water supplies. (Gov. Code §66473.7(g)).

As to existing agricultural uses, the provision of water to the Mission Village subdivision will not impact the availability of water resources for agricultural uses within VWC's service area. There are no known agricultural uses within the VWC service area except for Newhall agricultural lands. The provision of water to Mission Village would not impact Newhall's

agricultural lands because its agricultural water rights are known, established, and documented in certified environmental documentation.[13] In addition, all agricultural and other uses were accounted for in the 2010 UWMP, and in the Groundwater Management Plan through the modeling undertaken in that plan, which included pumping for agricultural and other uses.

Furthermore, the Mission Village EIR documentation has confirmed that the provision of water to the Mission Village subdivision will not create any water shortages, or any significant environmental impacts in the VWC service area of the Santa Clarita Valley.

As set forth in the Mission Village EIR, the Project's potable water demand will be met by the VWC through the use of Newhall's rights to 7,038 afy of groundwater from the Alluvial aquifer, which presently is used by Newhall for agricultural irrigation purposes. Because this water is already used to support Newhall's existing agricultural uses, there is not expected to be any significant environmental effects resulting from the use of such water to meet the potable demands of the Project, which is part of the approved Newhall Ranch Specific Plan area. In addition, due to Project conditions, the amount of groundwater that will be used to meet potable demands of the Specific Plan, including the Mission Village project, cannot exceed the amount of water historically and presently used by Newhall for agricultural uses. Therefore, no net increase in groundwater use will occur with implementation of the Project pursuant to Specific Plan mitigation requirements.

As reported in the Mission Village EIR, the Project's non-potable water demand will be met through the use of recycled (reclaimed) water from either the Newhall Ranch WRP or the existing Valencia WRP.

Accordingly, the Mission Village project water demand would be met by relying on two primary sources of water supply, namely, Newhall's agricultural water supplies and recycled water supplied by the Newhall Ranch WRP or the existing Valencia WRP. Because these two independent water sources (i.e., groundwater and recycled water) meet the needs of the Project, no potable water will be needed from the existing or planned water supplies of CLWA, including imported water from CLWA's SWP supplies. Nonetheless, CLWA's supplies, including imported water from the SWP, were assessed in both the Mission Village EIR and VWC's Water Supply Assessment (July 2010). Imported water supplies, including SWP supplies, are also addressed below for a complete picture of all available supplies to serve the existing and projected water demands of the Santa Clarita Valley.

The availability of each water supply source is discussed separately below.

2.1 GROUNDWATER SUPPLIES

2.1.1 OVERVIEW AND APPLICABLE PLANS AND STUDIES

As previously noted, VWC provides water service with a mix of about 50% groundwater and 50% imported water (with some recycled 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,

[13] Please refer to the Newhall Ranch Revised Additional Analysis (SCH No. 1995011015), Volume VIII, May 2003.

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. VWC's own water system includes 18 wells in the Alluvial aquifer, 5 wells in the Saugus Formation, about 368 miles of mainline, and 7 connections, called turnouts, to CLWA's system by which VWC 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 below, 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 Santa Clarita Valley Sanitation District of Los Angeles County (SCVSD).

Within an aquifer, the amount of groundwater in storage is the total volume of water that exists in underground storage at a particular time and that could become readily available for extraction by wells.[14] 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).[15]

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).[16] 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).[17]

For example, in April 1945, at the end of a 10- to 11-year period of above-average rainfall, groundwater elevations were at their highest recorded levels and the amount of groundwater in storage was calculated to be approximately 201,000 af.[18] Conversely, in November 1965, at the end of a severe 21-year dry period, groundwater levels in the Alluvium were at their lowest recorded levels and the amount of groundwater in storage in the Alluvium was calculated at

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14 Slade 2002.

15 Slade 1986.

16 Slade 2002.

17 Slade 2002.

18 Slade 2002; Slade 1986, Table 8.

approximately 107,000 af.[19] In the fall of 1985, groundwater in storage was approximately 176,400 af.[20] Groundwater in storage within the Alluvium in spring of 2000 (a period for which widespread water level data were available) was calculated at about 161,000 af.[21] The above data represents the best available information concerning the amount of groundwater in storage within the Alluvium.[22]

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).[23] The amount of groundwater in storage within the Saugus Formation is approximately 1,650,000 af.[24] This data represents the best available information concerning the amount of groundwater in storage within the Saugus Formation.

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 excess irrigation water applied to urban landscaping and of 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.[25] 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.[26]

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.

The 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,[27] which updated the analysis of the hydrogeologic conditions of the Alluvial and Saugus

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19 Slade 2002; Slade 1986, Table 8.

20 Slade 2002; Slade 1986, Table 8.

21 Slade 2002; Table 4.4.

22 DWR Bulletin 118.

23 Slade 1988.

24 Slade 2002.

25 Slade 2002; DWR Bulletin 118.

26 Slade 2002; DWR Bulletin 118.

27 Slade 2002.

Formation aquifer systems from his earlier reports.[28] 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 this basin to reflect the fluctuating utilization of groundwater in conjunction with imported SWP water;

(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 to 35,000 afy if dry conditions continue.

Groundwater Operating Plan. The groundwater basin is unadjudicated, meaning that neither VWC nor the other purveyors have adjudicated water rights that dictate their water supply. The total supply available to all purveyors in the basin and the ability of VWC to access those supplies determines the amount of water available to VWC to meet its long-term supply needs. However, in practice, as discussed below, VWC accesses the available groundwater supplies, in accordance with a groundwater operating plan developed by VWC, CLWA, and other retail water purveyors in the Santa Clarita Valley, and complemented by analyses based on 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 (i.e., 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 Santa Clarita Valley's groundwater operating plan is summarized below in **Table 2**, Groundwater Operating Plan for the Santa Clarita Valley. The plan addresses both the Alluvium and Saugus Formation.

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

Table 2
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, 2010 UWMP, 2013 Santa Clarita Valley Water Report.

The operating plan for the Alluvial aquifer involves 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 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 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 2010 UWMP provided historical and projected groundwater pumping broken down by retail water purveyor. The 2010 UWMP is the applicable and most current water management plan for the Santa Clarita Valley. The plan is updated every five years. The next UWMP update must be approved by December 2015; until then, however, the 2010 UWMP constitutes the best available water management planning data for the Santa Clarita Valley. Please refer to **Table 3**, Historical Groundwater Production, and **Table 4**, Projected Groundwater Production (Normal Year), for pertinent groundwater usage data based on the 2010 UWMP.

Table 3
Historical Groundwater Production[1]

Basin Name	Groundwater Pumped (af)				
	2005	**2006**	**2007**	**2008**	**2009**
Santa Clara River Valley East Subbasin					
SCWD	12,408	13,156	10,686	11,878	10,077
Alluvium	12,408	13,156	10,686	11,878	10,077
Saugus Formation	0	0	0	0	0
District #36	343	0	0	0	0
Alluvium	343	0	0	0	0
Saugus Formation	0	0	0	0	0
NCWD	4,824	5,572	5,497	5,912	5,728
Alluvium	1,389	2,149	1,806	1,717	1,860
Saugus Formation	3,435	3,423	3,691	4,195	3,868
VWC	14,741	14,333	15,570	16,094	15,295
Alluvium	12,228	11,884	13,140	14,324	12,459
Saugus Formation	2,513	2,449	2,367	1,770	2,836
Total Purveyor	**32,316**	**33,061**	**31,690**	**33,884**	**31,100**
Alluvium	**26,368**	**27,189**	**25,632**	**27,919**	**24,396**
Saugus Formation	**5,948**	**5,872**	**6,058**	**5,965**	**6,704**
Agricultural and Other[2]	12,785	17,312	14,768	14,750	16,564
Alluvium	12,280	15,872	13,141	13,797	15,590
Saugus Formation	505	1,440	1,627	953	974
Total Basin	**45,101**	**50,373**	**46,458**	**48,634**	**47,664**
Alluvium	**38,648**	**43,061**	**38,773**	**41,716**	**39,986**
Saugus Formation	**6,453**	**7,312**	**7,685**	**6,918**	**7,678**
Groundwater Fraction of Total Municipal Water Supply	**46%**	**45%**	**41%**	**45%**	**44%**

Notes:
(1) From 2009 Santa Clarita Valley Water Report (May 2010).
(2) Includes agricultural and other small private well pumping.
Source: 2010 UWMP, Table 3-6

Table 4
Projected Groundwater Production (Normal Year)[1]

Basin Name	Groundwater Pumping (af)							
	2015	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
Santa Clara River Valley								
East Subbasin								
District #36								
Alluvium	0	0	0	0	0	0	0	0
Saugus Formation	500	500	500	500	500	500	500	500
NCWD								
Alluvium	1,825	1,825	1,825	1,825	1,825	1,825	1,825	1,825
Saugus Formation	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400
SCWD								
Alluvium	10,500	10,500	10,500	11,500	11,500	11,500	11,500	11,500
Saugus Formation	2,850	3,350	3,350	3,350	3,350	3,350	3,350	3,350
VWC								
Alluvium	11,675	12,675	13,675	14,675	15,675	16,675	17,675	18,675
Saugus Formation	2,850	3,350	3,350	3,350	3,350	3,350	3,350	3,350
Total Purveyor								
Alluvium	**24,000**	**25,000**	**26,000**	**28,000**	**29,000**	**30,000**	**31,000**	**32,000**
Saugus Formation	**10,600**	**11,600**	**11,600**	**11,600**	**11,600**	**11,600**	**11,600**	**11,600**
Agricultural and Other[2]								
Alluvium	14,500	13,500	12,500	10,100	9,100	8,100	7,100	6,600
Saugus Formation	900	900	900	900	900	900	900	900
Total Basin								
Alluvium	**38,500**	**38,500**	**38,500**	**38,100**	**38,100**	**38,100**	**38,100**	**38,600**
Saugus Formation	**11,500**	**12,500**	**12,500**	**12,500**	**12,500**	**12,500**	**12,500**	**12,500**

Notes:

[1] Existing and planned pumping by individual purveyors is shown in Appendix C of the 2010 UWMP. The distribution of pumping does not represent a formal allocation of water resources among the retail purveyors. To ensure sustainability, the purveyors have committed to the groundwater operating plan as described in the 2010 UWMP, and as reported annually in the Santa Clarita Valley water reports.

[2] Agricultural and other small private well pumping, including Newhall, Robinson Ranch Golf Course, Wayside Honor Rancho, Valencia Golf Course, and proposed Palmer Golf Course.

Source: 2010 UWMP, Table 3-7.

Groundwater Management Plan. In 2001, as part of legislation authorizing CLWA to provide retail water service to individual municipal customers, Assembly Bill (AB) 134 included a requirement that CLWA prepare a groundwater management plan in accordance with the provisions of Water Code Section 10753.

CLWA adopted the Groundwater Management Plan on December 10, 2003. This Plan contains the following four management objectives, or goals, for the basin: (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 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, and active characterization and resolution of groundwater contamination problems, including perchlorate; and (4) preservation of interrelated surface water resources, which includes managing groundwater in a manner that does not adversely impact surface and groundwater discharges or quality to downstream basins.

Prior to preparation and adoption of the Groundwater Management Plan, a local Memorandum of Understanding (MOU) process among CLWA, the purveyors, and United Water Conservation District (UWCD) in neighboring Ventura County had produced the beginning of local groundwater management, now embodied in the Groundwater Management Plan. In 2001, those agencies prepared and executed the MOU. The MOU is a collaborative and integrated approach to several of the aspects of water resource management included in the Groundwater Management Plan. UWCD manages surface water and groundwater resources in seven groundwater basins, all located in Ventura County, downstream of the Basin. As a result of the MOU, the cooperating agencies have undertaken the following measures: (1) integrated their database management efforts; (2) developed and utilized a numerical groundwater flow model for analysis of groundwater basin yield and containment of groundwater contamination; and (3) continued to monitor and report on the status of basin conditions, as well as on geologic and hydrologic aspects of the overall stream-aquifer system.

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 plan elements had been on-going for some time prior to its adoption. This work continues on an on-going basis. An important aspect of this work was completion of the 2005 Basin Yield Report. The primary determinations made in that report are that: (1) both the Alluvial aquifer and the Saugus Formation are sustainable sources at the operational plan yields stated in the prior 2005 UWMP over the next 25 years; (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 2005 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 2004, CLWA and the purveyors assisted in developing a numerical groundwater flow model for use in analyzing the response of the groundwater basin to long-term operation at the operational yields used in the earlier 2000 UWMP. That groundwater flow model was used in 2005 to analyze the sustainability of groundwater supplies in both the Alluvium and the Saugus Formation, utilizing a long-term (78 year) hydrologic period. The model used this period to examine groundwater basin response to variations in groundwater pumping. The pumping variations used in the modeling were based on the CLWA/purveyor groundwater operating plan.

Utilizing the pumping ranges reflected in the groundwater operating plan, the model projections of groundwater levels, groundwater storage, and surface water flows show the basin to respond in a long-term sustainable manner, with no chronic depletion of groundwater levels, storage, or stream flows.

The analysis of groundwater sustainability was summarized in the 2005 Basin Yield Report, which included the following findings:

(a) The groundwater basin historically has been, and continues to be, in good operating condition (and not in a state of overdraft), based on the best available data.

(b) The CLWA/purveyor groundwater operating plan is sustainable over varying hydrologic conditions because it is feasible to intermittently exceed a long-term average yield for one or more years without creating long-term adverse impacts to the groundwater aquifer system or the Santa Clara River.

(c) The CLWA/purveyor groundwater operating plan for the Alluvium and the Saugus Formation can be used for long-term water supply purposes. In particular, although increased pumping from the Saugus Formation during dry periods can be expected to cause short-term declines in groundwater levels, it is not projected to cause permanent declines in groundwater discharges or stream flow and Saugus groundwater levels can be expected to recover to pre-drought conditions when pumping is reduced in subsequent wet to normal years.

(d) The strategy around which the CLWA/purveyor groundwater operating plan was designed is viable on a long-term basis (*i.e.*, maximize the use of the Alluvial aquifer

and imported water during years of average or above-average availability of these supplies, and limit use of the Saugus Formation during these periods, then temporarily increase Saugus pumping during years when SWP supplies are significantly reduced because of dry-year conditions).

(e) The historical observations of basin conditions and the model simulations together support the historical and ongoing confidence that groundwater can continue to be a sustainable source of water supply under the CLWA/purveyor groundwater operating plan.

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, partly in preparation for the 2010 UWMP, and partly in response to uncertainties associated with future SWP delivery reliability. As a result, the 2009 Basin Yield Update was completed.

The primary 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, but not eliminate, the desired pumping regime. The model simulation also showed that the residual unachievable 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 11,000 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 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 2010 UWMP, Section 5, Water Quality, and 2010 UWMP Appendices C and I.

2.1.2 ALLUVIAL AQUIFER

Based on a combination of historical operating experience and recent (2005 and 2009) groundwater modeling analysis, 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 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 Supply. For municipal water supply, with existing wells and pumps, 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 5**, Active Municipal Groundwater Source Capacity — Alluvial Aquifer Wells.

In terms of adequacy and availability, the 67,000 afy is more than sufficient to meet the municipal, or urban, component of groundwater supply from the Alluvium, which in the near term is about 24,000 to 26,000 afy of the total planned Alluvial pumping of 30,000 to 40,000 afy. (The balance of Alluvial pumping in the operating plan is for agricultural and other small, private pumping, which is readily covered by the 67,000 afy.)

Table 5
Active Municipal Groundwater Source Capacity — Alluvial Aquifer Wells

	Well	Pump Capacity (gpm)	Max. Annual Capacity (af)	Normal Year Production[(1)] (af)	Dry-Year Production[(1)] (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					
	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

Table 5
Active Municipal Groundwater Source Capacity — Alluvial Aquifer Wells

	Well	Pump Capacity (gpm)	Max. Annual Capacity (af)	Normal Year Production[(1)] (af)	Dry-Year Production[(1)] (af)
VWC (*Cont'd*)					
	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**

Notes:
(1) Production amounts simulated in the 2009 Basin Yield Update.
Source: 2010 UWMP, Table 3-8.

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, over a historical range of total Alluvial pumpage from as low as about 20,000 afy to as high as about 43,000 afy. 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, 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. Consequently, the prior 2005 UWMP

considered the Alluvial aquifer to be a sustainable water supply source to meet the Alluvial portion of the groundwater operating plan.

In 2008, partly in preparation for the 2010 UWMP, and partly in response to concerns about regulatory and litigation constraints that may impact the future reliability of SWP supplies, 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, reduced by some redistribution of pumping (reflected in pumping volumes included in the 2010 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 2010 UWMP) be implemented to achieve pumping rates near the upper end of the dry-period range.

2.1.3 SAUGUS FORMATION

Based on historical operating experience and recent (2005 and 2009) groundwater modeling analysis, the Saugus Formation can supply water on a long-term sustainable basis in a normal range of 7,500 to 15,000 afy, with intermittent increases to 25,000 to 35,000 af in dry years. The dry-year increases, based on limited historical observation and modeled projections, demonstrate that a small amount of the large groundwater storage in the Saugus Formation 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 pumping would be reduced.

Adequacy of Supply. For municipal water supply with existing wells, 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. Saugus pumping capacity from all the active municipal supply wells is summarized in **Table 6**, Municipal Groundwater Source Capacity — Saugus Formation Wells. These capacities include two Saugus wells contaminated by perchlorate (Saugus 1 and 2), which have been returned to service with treatment facilities for use of the treated water for municipal

supply under permit from the State Water Resources Control Board's Division of Drinking Water (DDW). They also reflect the most recent replacement well, VWC's Well 207, in a non-impacted part of the basin. Excluded from these capacities is VWC Well 201 that was recently impacted by the detection of perchlorate. Well 201 represents a total of 2,400 gpm of pumping capacity (for a dry-year production capacity of 3,777 afy). VWC has removed Well 201 from service pending the installation of treatment.

Table 6
Municipal Groundwater Source Capacity — Saugus Formation Wells

	Well	Pump Capacity (gpm)	Max. Annual Capacity (af)	Normal Year Production[(1)] (af)	Dry-Year Production[(1)] (af)
NCWD					
	12	2,400	3,870	1,765	2,494
	13	2,250	3,630	1765	2,494
	NCWD Subtotal	**4,650**	**7,500**	**3,530**	**4,988**
VWC					
	159	500	800	50	50
	160	2,000	3,220	500	830
	205	2,700	4,350	1,211	4,038
	206	2,500	4,030	1,175	3,500
	207	2,500	4,030	1,175	3,500
	VWC Subtotal	**10,200**	**16,430**	**4,111**	**11,918**
SCWD					
	Saugus 1	1,100	1,770	1,772	1,772
	Saugus 2	1,100	1,770	1,772	1,772
	SCWD Subtotal	**2,200**	**3,540**	**3,544**	**3,544**
Total Purveyors		**17,050**	**27,470**	**11,185**	**20,450**

Notes:
(1) Production amounts simulated in the 2009 Basin Yield Update.
Source: 2010 UWMP, Table 3-9.

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. Until 2003, the long-term sustainability of Saugus groundwater was empirically estimated from limited historical experience. Historically (and continuing to the present), pumping from the Saugus 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. Those empirical observations have been complemented by the development and application of the numerical groundwater flow model, which was 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. The latter aspects of Saugus pumping were being studied at the time of the prior 2005 UWMP, and, thus, were reflected as groundwater extraction capacity to be restored. Those restoration efforts have been undertaken and that pumping is reflected in the 2010 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). The pumping simulated in the model was in accordance with the then-current operating plan for the basin. 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 cessation 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.

2.1.4 EXISTING AND PLANNED GROUNDWATER PUMPING

Impacted Well Capacity. As discussed in Appendix I of the 2010 UWMP, certain wells in the basin were impacted by perchlorate contamination 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 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 DDW; or (c) will be replaced under an existing perchlorate litigation settlement agreement. The restored wells (two Saugus wells and one Alluvial well) 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 5** and **6**, above. An additional two wells will be drilled to fully restore 4,200 gpm (6,776 afy) of the impacted well capacity, thus restoring the operational flexibility that existed prior to the perchlorate being discovered. The cost of drilling the remaining two wells will be fully reimbursed under the terms of the perchlorate litigation settlement agreement.

Most recently, 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. Water sampling tests from August 2010 through April 2011 also confirmed the presence of perchlorate over the adopted regulatory standard. This well was taken out of service in August 2010 and its capacity is not included in active groundwater sources delineated in **Table 6**, above.

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 the 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 at or before the end of 2015, 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 aquifer groundwater sources of municipal wells, approximately 67,000 afy, are more than sufficient to meet the current and potential future urban component of the groundwater supply from the Alluvium. The potential future urban component of groundwater from the Alluvium in the near-term is about 24,000 to 26,000 afy of the total planned Alluvial pumping of 30,000 to 40,000 afy. The higher individual and cumulative pumping capacities of the purveyors are due to 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 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 current active capacity is also more than sufficient to meet water demands, in combination with other sources. To supplement near term dry-year supplies, VWC Well 201 (with a dry-year production capacity of 3,777 afy) can be brought back into service utilizing treatment technologies currently being used in the Santa Clarita Valley or replaced, and thereby increase capacity to about 31,000 afy. To accommodate the longer-term demands, 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. This increase is more than sufficient to meet the planned use of 35,000 afy of Saugus groundwater during a multiple-dry year period.

2.1.5 PRIVATE AND AGRICULTURAL GROUNDWATER PUMPING

The 2010 UWMP groundwater operating plan recognizes ongoing Alluvial pumping for both municipal and agricultural water supply, as well as other small private domestic and related pumping. In addition, the prior 2005 UWMP reported some limited information about the nature and magnitude of private well pumping as submitted by the Santa Clarita Valley Well Owners' Association. This included a detailed estimate of private well pumping in the San Francisquito Canyon portion of the basin: a total of 85 afy from 73 individual private pumpers, or nearly 1.2 afy per private well pumper.

As a result of that input, the 2010 UWMP reported that total private pumping is likely well within the 500 afy estimates of small private well pumping 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, while the small private wells are not explicitly modeled in the basin yield analysis because their locations and operations are not known, their operation creates a pumping demand that is essentially negligible at the scale of the regional model. Ultimately, the intent to maintain overall pumping within the operating plan, including private pumping, will result in sustainable groundwater conditions to support the combination of municipal (purveyor), agricultural, and small private groundwater use on an ongoing basis.

Another change made in the 2010 UWMP is to respond to DWR's requirement to provide estimates of the projected groundwater use by each of the retail purveyors. For purposes of this WV report, and in compliance with the UWMP Act, the purveyors have each set forth their estimates of projected groundwater use in Table 3-7 of the 2010 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. These estimates are provided for planning purposes in this WV report and in the 2010 UWMP; they do not constitute an allocation of groundwater from the local basin.

2.1.6 WRITTEN CONTRACTS OR OTHER PROOF OF SUPPLIES

The following is a list of major reports, studies, agreements, and other actions pertinent to VWC's right to pump and serve groundwater in the Santa Clarita Valley. The documents show

the absence of existing or projected overdraft in both the Alluvial aquifer and Saugus Formation; therefore, the “surplus” groundwater is available to VWC and other purveyors. The "short title" for each document is provided below.

- 2001 Update Report.
- Memorandum of Understanding Between the Santa Clara River Valley Upper Basin Water Purveyors and UWCD, dated August 2001.
- DWR Bulletin 118 (2003).
- Regional Groundwater Flow Model for the Santa Clarita Valley: Model Development and Calibration, April 2004.
- Analysis of Near-Term Groundwater Capture Areas for Production Wells Located Near the Whittaker-Bermite Property, December 21, 2004.
- Analysis of Perchlorate Containment in Groundwater Near the Whittaker-Bermite Property, Santa Clarita, California, December 2004.
- 2005 Basin Yield Report.
- Calibration Update of the Regional Groundwater Flow Model for the Santa Clarita Valley, Santa Clarita, California, August 2005.
- 2009 Basin Yield Update.
- 2013 Santa Clarita Valley Water Report.

2.1.7 PERMITS/APPROVALS OR OTHER NECESSARY REGULATORY APPROVALS

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

- VWC’s Water Management Plan, approved 2001. The California Public Utilities Commission (CPUC) approved VWC's Water Management Plan and authorized VWC to expand its service area to include the West Creek Project on November 29, 2001. The CPUC decisions memorializing that approval are listed below:
  - CPUC Decision 01-11-048, November 29, 2001;
  - CPUC Decision 02-04-002, April 4, 2002;
  - CPUC Decision 03-06-033, June 5, 2003; and
  - CPUC Decision 03-10-063, October 16, 2003.
- 2003 Groundwater Management Plan
- Mission Village Draft EIR, Final EIR, Additional Environmental Information, and Revised Draft EIR 2010-2011, and resolutions and other final action by the County Board

- 2010 UWMP

2.2 IMPORTED SWP SUPPLIES

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. 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. Water is diverted from the Delta into the Clifton Court Forebay, and then pumped into the 444-mile long California Aqueduct. SWP water is temporarily stored in San Luis Reservoir, which is jointly operated by DWR and the U.S. Bureau of Reclamation. Prior to delivery to CLWA, SWP supplies are stored in Castaic Lake, located at the end of the West Branch of the California Aqueduct.

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, District #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.

In 2013, CLWA fulfilled the following major accomplishments in order to enhance, preserve, and strengthen the quality and reliability of existing and future supplies:

- continued participation in long-term water banking programs with Rosedale-Rio Bravo Water Storage District and the Semitropic Water Storage District;
- continued to participate in two-for-one exchange programs with Rosedale-Rio Bravo Water Storage District and West Kern Water District;
- completed water sales of 22,000 af to west Kern County agricultural water districts providing revenue to CLWA;
- completed water sales of 6,000 af to the San Luis Water District providing revenue to CLWA;
- continued implementation of the AB 3030 Groundwater Management Plan;
- continued implementation of the water conservation Best Management Practices, including measures in the Santa Clarita Valley Water Use Efficiency Plan;
- continued participation in the Santa Clarita Valley Water Committee
- pumped and treated almost 3,100 af from the Saugus 1 and 2 wells in 2013 as part of the remediation of the Saugus Formation groundwater perchlorate contamination;

- continued cooperative effort with the U.S. Army Corps of Engineers for characterization studies of the former Whittaker-Bermite site and in a task force effort with the City of Santa Clarita, local legislators, and state agencies to effect the cleanup and remediation of all aspects of the former Whittaker-Bermite site, including perchlorate contamination of local groundwater; and

- continued recycled water service.

Each SWP contractor has a specified water supply amount shown in Table A of its water supply contract with DWR that cumulatively total approximately 4.1 million af. The term of the contract is through 2035 and is renewable after that year. Although the SWP has not been fully completed, the SWP can deliver all of the 4.1 million af of Table A Amounts during very wet years. However, climatic conditions and other factors can significantly 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.

CLWA has an annual SWP Table A Amount of 95,200 af through its water supply contract with DWR. 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 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 availability of Article 21 water and turnback pool water is uncertain. 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 uncertain. 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. This transaction allows CLWA access to another 1,376 af of storage in Castaic Lake. CLWA access to this additional storage is available on a year-to-year basis through 2015. While it is expected that CLWA and Ventura County will extend the existing flexible storage agreement beyond the 2015 term, it is not assumed to be available beyond 2015 in the adopted UWMP.

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 significantly 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, regulatory restrictions on SWP operations, and the effects of climate change[29]. Uncertainty also exists because of the potential for interruptions in conveying SWP supplies through the Delta (*e.g.*, earthquakes, Delta levee failure). DWR and other agencies are engaged in ongoing efforts to reduce risks to the Delta and enhance emergency response capabilities.[30]

DWR accounts for the various factors affecting and reducing SWP water delivery reliability in its computer modeling, which simulates the expected SWP deliveries under estimated existing and future conditions. Specifically, 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

[29] Please refer to the SWP Delivery Reliability Report 2013, Chapter 3, for a detailed discussion of the factors affecting estimates of existing and especially future SWP water delivery reliability. In addition, the 2010 UWMP for the Santa Clarita Valley summarizes various factors that combine to affect and reduce SWP water delivery reliability (see 2010 UWMP, Section 3). Also, please see Appendix D to the 2010 UWMP for a more detailed discussion of these factors.

[30] Please refer to the SWP Draft Delivery Reliability Report 2013, Chapter 3, 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.

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 2013 Draft SWP Delivery Reliability Report. 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. The SWP Delivery Reliability Report, prepared every two years by DWR as part of the Monterey Amendments settlement agreement, informs SWP contractors, city and county planning departments, regional and metropolitan planning departments, and the public about key factors important to the operation of the SWP and the reliability of its water deliveries. Commencing in 2002, DWR prepared and disseminated reliability reports for 2005, 2007, 2009, and 2011. The reliability reports are used for water planning purposes. For example, CLWA used DWR's 2009 reliability report and DWR's estimates of SWP water delivery reliability in preparing and adopting the 2010 UWMP for the Santa Clarita Valley.

The draft 2013 Delivery Reliability Report is the most current report, and includes DWR's estimates of SWP water delivery reliability under both existing (2013) and future (2033) conditions. According to the draft report, many of the same challenges to SWP operations that were identified in the 2011 reliability report remain; for example, like the 2011 report, the 2013 report shows 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. According to the 2010 UWMP for the Santa Clarita Valley, which relied on the 2009 reliability report, DWR estimates that the SWP can deliver 60 percent of the total maximum Table A amounts on a long-term average basis under both current (2009) and future (2029) conditions. In the worst-case single-dry year, DWR estimated that the SWP can deliver a total Table A supply of 7% of the total maximum Table A amounts under current conditions (2009), and 11% under future conditions (2029). During multiple year dry periods, DWR estimated that the SWP can deliver a total Table A supply averaging 34-36% of the total maximum Table A amounts under current conditions and 28-32% under future conditions.

As updated by the draft 2013 Delivery Reliability Report, DWR estimates that for all contractors combined, the SWP can deliver a total Table A supply of 62% of the total maximum Table A amounts on a long-term average basis under current (2013) conditions, and 58% under future (2033) conditions.[31] In the worst-case single-dry year, DWR estimates that the SWP can deliver

[31] See draft 2013 Delivery Reliability Report, Chap. 5, Table 5-4, and Chap. 6, Table 6-3. On average, the dry-period deliveries of Table A water are lower in the 2013 report than in the 2009 and 2011 reports. According to DWR, the change is due to model refinements discussed in detail in the technical memorandum accompanying the draft 2013 Delivery Reliability Report (see Chapter 5, p. 41).

a total Table A supply of 12% of the total maximum Table A Amount under current conditions, and 11% under future conditions. During multiple year dry periods, DWR estimates that the SWP can deliver a total Table A supply averaging 30-31% of the total maximum Table A Amount under current conditions and 24-31% under future conditions.[32]

DWR Analysis Results for SWP Supplies Under Current (2013) Conditions. The draft 2013 State Water Project Delivery Reliability Report includes the information presented in **Table 7**, Average and Dry-Period SWP Table A Deliveries Under Current Conditions and Resulting Deliveries to CLWA, which provides average and dry-period Table A deliveries for current conditions (2013) and compares those figures to those in the 2009, 2011, and 2013 Delivery Reliability Reports.

As shown on **Table 7**, applying the draft 2013 Delivery Reliability Report SWP Table A delivery percentages under current conditions to CLWA's Table A Amount of 95,200 af, results in approximately 59,024 af under average year conditions, 11,424 af under single-dry year conditions, and 28,560 af (on average) under multiple-dry year conditions.

[32] *Id*. According to DWR, the multiple year dry period shows lower Table A deliveries in the 2013 report than in the 2009 and 2011 reports, and the change is due to modeling refinements and reclassification of 1975 as a wet year rather than an above-normal year as was used in the 2009 and 2011 reports. Because 1975 is now considered a wet year, there are higher State Board requirements to be met, which leads to lower reservoir levels and lesser deliveries (see draft 2013 Reliability Report, Chapter 6, p. 48).

Table 7
Average and Dry-Period SWP Table A Deliveries Under Current 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%)
CLWA Table A Delivery (2013)[5]	59,024	11,424	28,560	28,560	28,560	28,560

(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 2013 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 2009 reliability report results are shown here because that was the report utilized in the most current 2010 UWMP for the Santa Clarita Valley.

(5) Rows 1-3 above reflect statewide maximum Table A Amounts expressed in thousand acre-feet (taf/yr) quantities. In contrast, this Row 4 expresses CLWA's maximum Table A Amount in acre-feet (af) quantities.

Source: 2009, 2011, 2013 Delivery Reliability Reports.

DWR Analysis Results for SWP Supplies Under Future (2033) Conditions. The draft 2013 Delivery Reliability Report includes the information presented in **Table 8**, Average and Dry-Period SWP Table A Deliveries Under Future Conditions and Resulting Deliveries to CLWA, which provides estimated average and dry-period Table A deliveries for future conditions (2033) and compares those figures to those in the 2009, 2011, and 2013 Delivery Reliability Reports.

As shown on **Table 8**, under updated future conditions (2033), average SWP delivery amounts may decrease from 60% to 58% of the maximum Table A Amount as compared to earlier estimates in the 2009, 2011, and 2013 Delivery Reliability Reports. In addition, in single-dry years, SWP delivery amounts remain the same (11%) in the 2009–2013 reports. Also, in multiple-dry periods, the 2013 report shows that SWP delivery amounts would decrease in reliability from 24% to 31% of the maximum Table A Amount as compared to earlier estimates from the 2009 and 2011 reports (30% to 38%).

Also, as shown on **Table 8**, applying the draft 2013 Delivery Reliability Report SWP Table A delivery percentages under future conditions to CLWA's Table A Amount of 95,200 af, results in approximately 55,216 af under average year conditions, 10,472 af under single-dry year conditions, and 26,656 af (on average) under multiple-dry year conditions.

Table 8
Average and Dry-Period SWP Table A Deliveries
Under Future 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]	2,487 (60%)	458 (11%)	1,570 (38%)	1,431 (35%)	1,308 (32%)	1,480 (36%)
2011 Report	2,465 (60%)	441 (11%)	1,457 (35%)	1,401 (34%)	1,226 (30%)	1,365 (33%)
2013 Report	2,400 (58%)	453 (11%)	978 (24%)[5]	1,263 (31%)	1,055 (26%)	1,251 (30%)
CLWA Table A Delivery (2013)[6]	55,216	10,472	26,656	26,656	26,656	26,656

(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 2013 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 2009 Delivery Reliability Report results are shown here because that was the report utilized in the most current 2010 UWMP for the Santa Clarita Valley.

(5) This drought period shows much lower Table A deliveries in the 2013 Delivery Reliability Report than in the 2009 and 2011 reports, because of modeling refinements and DWR's reclassification of 1975 as a wet year.

(6) Rows 1-3 above reflect statewide maximum Table A Amounts expressed in thousand acre-feet (taf/yr) quantities. In contrast, this Row 4 expresses CLWA's maximum Table A Amount in acre-feet (af) quantities.

Source: 2009, 2011, and 2013 Delivery Reliability Reports.

2.2.1 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 SWP supply rights in the Santa Clarita Valley. The "short title" for each document is provided 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 af of SWP Table A Amount).[33]
- 2009, 2011, 2013 Delivery Reliability Reports.

33 The DWR/CLWA water supply contracts confirm the availability of SWP supplies to CLWA, and no further or additional regulatory approvals are required to utilize such supplies.

- 2010, 2011, 2012, 2013 Santa Clarita Valley Water Reports.

2.2.2 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 af of SWP Table A Amount).
- Monterey Settlement Agreement, 2003.
- Draft EIR -- Supplemental Water Project Transfer of 41,000 af of SWP Table A Amount, June 2004.
- Final EIR -- Supplemental Water Project Transfer of 41,000 af of SWP Table A Amount, December 2004, including all CLWA approval resolutions and other final actions relating thereto.
- Draft and Final Monterey Plus EIRs, 2007/2010. 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 2.2.3, below.
- 2010 UWMP.
- Mission Village Draft, Final, Revised Draft EIRs and Additional Environmental Information (SCH No. 2005051143), and resolutions and other final action by the County.

2.2.3 EFFECT OF MONTEREY PLUS EIR LITIGATION ON SWP/CLWA WATER SUPPLIES

CLWA's water allocations from the SWP are governed by annual hydrology and the terms of the long-term water supply contract that CLWA's predecessor entered with DWR in 1963. Historically, DWR and the SWP contractors periodically amended the SWP contracts to adjust to changing conditions and new circumstances that were not envisioned when the contracts were executed. 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.[34] The trial court held a bifurcated trial that culminated in a December 2012 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 January 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 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 ruling addressing the remedy under CEQA.

In terms of the remedy, the trial court found that the use and operation of the Kern Water Bank was severable from the remainder of the Monterey Amendment project; that severance will not prejudice complete and full compliance with CEQA; and that the remainder of the Monterey Amendment project is in compliance with CEQA. Further, the trial court found that the prior project approvals should remain in place pending preparation of an adequate EIR and that DWR (as the lead agency) and the Kern Water Bank Authority (as the responsible agency) must make a new determination whether to continue the use and operation of the Kern Water Bank, after compliance with CEQA. The trial court did not enjoin the use and operation of the Kern Water Bank pending CEQA compliance. Nonetheless, the trial court made clear that the scope of the additional environmental review should include all potential groundwater, water quality, and other impacts associated with the operation of the Kern Water Bank.

This remedy will not affect the amount of water CLWA annually receives from the SWP. This conclusion is based on several factors. First, the trial court ruling does not invalidate the Monterey Amendment project, nor limit or restrict its implementation in terms of SWP operations or water supply deliveries — all of which is consistent with the previous *PCL*

[34] *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).

litigation (*Planning and Conservation League v. Department of Water Resources* (2000) 83 Cal.App.4th 892), which found much more serious CEQA violations (*i.e.*, wrong lead agency), but did not invalidate the Monterey Amendment project, nor limit or restrict SWP operations or water supply deliveries. Also, the December 2012 court ruling barring petitioners' action to invalidate the Monterey Amendment project and Kern Fan Element property transfer through a reverse validation action confirms that neither DWR nor the SWP contractors will be required to set aside their approval of the Monterey Amendment project. The trial court's remedy is consistent with the prior December 2012 court ruling.

Moreover, the trial court's remedy does not enjoin the Kern Water Bank operations while the additional CEQA analysis is being performed; therefore, SWP operations and water deliveries to CLWA would be unaffected, because SWP operations are independent from operations of the separate Kern Water Bank facilities by the local entity that owns and operates it. Further, the trial court's order requiring additional environmental review of potential groundwater, water quality, and other impacts associated with the operation of the Kern Water Bank will not affect the water supplies needed for the Mission Village project because as shown in this WV report, the Mission Village project does not rely on Kern Water Bank operations; instead, the project *potable* water supplies are from *local* groundwater within the Santa Clarita Valley groundwater basin, and *non-potable* water supplies are provided by two *local* water reclamation plants in the Santa Clarita Valley.

2.3 DRY-YEAR SUPPLIES

As stated in the 2010 UWMP, with recent developments in conjunctive use and groundwater banking, significant opportunities exist to improve water supply reliability for CLWA. Conjunctive use is the coordinated operation of multiple water supplies to achieve improved supply reliability.

For the Santa Clarita Valley, groundwater banking programs involve storing available SWP and other imported water supplies during wet years in groundwater basins. 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 four groundwater banking and water exchange programs with, in aggregate, more than 150,000 af of recoverable water outside the local groundwater basin. The first component of CLWA's groundwater banking program is the result of two agreements between CLWA and Semitropic Water Storage District whereby, over the terms of the two agreements, CLWA can withdraw up to 45,920 af of SWP Table A water that it stored in Semitropic to meet Santa Clarita Valley demands when needed in dry years (45,920 af is the net recoverable balance after originally banking 24,000 af in 2002 and 32,522 af in 2003, and withdrawing 4,950 af in 2009 for delivery in 2009 and 2010). In April 2011, Semitropic and CLWA extended the original agreements by 10 years to 2022/2024.

The second component of CLWA's groundwater banking program is with Rosedale-Rio Bravo in Kern County. This program, the Rosedale-Rio Bravo Water Storage District Water Banking

and Exchange Program, has a recoverable total of 94,271 af in storage (including 1,006 af delivered in 2011, less contractual losses).

The third and fourth components of CLWA's groundwater program are the two-for-one banking plans that CLWA initiated with Rosedale-Rio Bravo and West Kern Water District in 2011 that now have a total of 9,973 af of recoverable water.

In addition, in 2009, CLWA entered into an agreement with DWR to participate in the Yuba Water Accord program (Yuba Water Accord). This non-SWP water supply is available to CLWA in critically dry years as a result of DWR agreements with Yuba County Water Agency and the U.S. Bureau of Reclamation relating to settlement of water rights issues on the Lower Yuba River in northern California. Additional supplies may be available in wetter years. The quantity of water varies depending on hydrology, and the extent of participation by other SWP contractors. CLWA currently projects receiving up to 1,277 afy pursuant to the Yuba Water Accord.

These groundwater banking 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.

2.3.1 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.

- 2002 CLWA/Semitropic Groundwater Storage Program Letter Agreement. CLWA, et al. October 9, 2002.
- 2002, 2003 Point of Delivery Agreements among DWR, CLWA, and KCWA (Semitropic Groundwater Storage Program).
- 2004 CLWA/Semitropic Groundwater Storage Program Letter Agreement. CLWA, et al. January 15, 2004.
- 2006 Water Acquisition Agreement between CLWA and Rosedale-Rio Bravo Water Storage District regarding Groundwater Banking Program.
- 2009, 2011, 2013 Delivery Reliability Reports.
- 2010, 2011, 2012, 2013 Santa Clarita Valley Water Reports.
- 2011 CLWA/Rosedale-Rio Bravo/West Kern Water District two-for-one exchange program.

2.3.2 PERMITS/APPROVALS OR OTHER NECESSARY REGULATORY APPROVALS

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

- 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 (SCH No. 2002081032), and resolutions and other final action by CLWA.
- Buena Vista/Rosedale-Rio Bravo Water Banking and Recovery Program. Final EIR September 2002 (SCH No. 2006021003).
- Rosedale-Rio Bravo Water Storage District Water Banking and Exchange Program Draft EIR, August 2005 (SCH No. 2005061157).
- 2010 UWMP.
- Mission Village Draft, Final, Revised Draft EIR, and Additional Environmental Information, 2010-2011 (SCH No. 2005051143), and resolutions and other final action by the County.

2.4 RECYCLED WATER

As shown in **Table 12** through **Table 15** in Section 3.0, below, since 2003, existing local supplies have been augmented by the initiation of recycled water deliveries from CLWA's recycled water program. CLWA currently has a contract with the SCVSD for 1,700 afy of recycled water. Recycled water is available from two WRPs operated by SCVSD. This supply is available in an average/normal year, a single-dry year, and in each year of a multiple-dry year period.

2.4.1 Recycled Water Master Plan

Recycled water is available from two existing WRPs operated by the SCVSD. The two plants (Saugus WRP and Valencia WRP) are situated within the CLWA service area.

The Saugus WRP has a current treatment capacity of 6.5 mgd (7,280 afy), and no future expansion is possible due to space limitations. The Valencia WRP has a current capacity of 21.6 mgd (24,192 afy). To accommodate long-term growth, SCVSD has planned a 6 mgd expansion of the Valencia plant as reflected in SCVSD's 2015 Santa Clarita Valley Joint Sewerage System Facilities Plan and certified EIR. With this expansion, the capacity of the Valencia WRP would be increased to 27.6 mgd (30,912 afy), which SCVSD expects to be needed by 2035. Thus, the total planned treatment capacity for both existing WRPs is 34.1 mgd (38,197 afy).

These existing, local treated wastewater resources can be reused in the form of recycled water. Recycled water enhances reliability by providing an additional source of supply and allows for more efficient utilization of groundwater and imported water supplies in the Santa Clarita Valley.

Based on the Recycled Water Master Plan, reuse of the tertiary treated water from these two plants is anticipated to be 15.5 mgd (17,400 afy) by year 2030. Since the planning horizon for the 2010 UWMP extends to 2050, supplies in the Recycled Plan projected to be available by year 2030 have been assumed to be available through 2050 and beyond.

In 2002, CLWA completed an updated Draft Recycled Water Master Plan. CLWA's program is expected to ultimately recycle up to 17,400 af of treated (tertiary) wastewater. This is in addition to an expected recycled water use of approximately 5,400 afy within the Newhall Ranch Specific Plan from the Newhall WRP.

In 2007, CLWA and the retail purveyors completed CEQA analysis for CLWA's 2002 updated Recycled Water Master Plan. This analysis consisted of a Program EIR, covering the various options for a recycled water system as outlined in the Master Plan. The CLWA Board certified the Program EIR in March 2007.

In summary, CLWA previously completed Phase I of its Recycled Water Master Plan, and this initial phase will ultimately deliver 1,700 afy of recycled water. Deliveries of recycled water began in 2003 for irrigation water supply at a golf course and in roadway median strips. In 2011, recycled water deliveries were 373 af, generally consistent with recycled water deliveries that have ranged between about 300 and nearly 500 afy over the past 9 years.

In addition, CLWA and the retail purveyors are preparing the design of the second phase of the Recycled Water Master Plan (Phase IIA) that will take water from the Saugus WRP and distribute it to identified users to the north, across the Santa Clara River and then to the west and the east, which will include service to Santa Clarita Central Park. The environmental documentation for this phase was completed in July 2011.

There is also a new phase of the recycled water system (Phase IIC) in design that would extend the existing system southward from the intersection of Valencia Boulevard and The Old Road, south along Rockwell Canyon Road to the intersection of Orchard Village Road and Lyons Avenue, serving irrigation customers along its proposed alignment (Phase IIB is located in another part of the Santa Clarita Valley). Collectively, these phases will have design capacity to increase recycled water deliveries by about 1,500 afy.

As stated in the 2010 UWMP, CLWA's recycled water program, along with the Newhall Ranch WRP, is expected to recycle up to 22,800 af of treated (tertiary) wastewater suitable for reuse on golf courses, landscaping, and other non-potable uses.

2.4.2 Recycled Water Supply and Demand

The use of wastewater effluent is limited by various state water laws, codes, and court decisions. These regulatory limitations are described in greater detail in CLWA's Recycled Water Master Plan.[35]

[35] The 2010 UWMP includes more information regarding the Recycled Water Master Plan, including its implementation plan (see Section 4, Recycled Water).

CLWA is currently approved to use 1,700 afy of recycled water. The SCVSD will need to assess the issues of water rights and protection of biological resources relative to sections 1210 and 1211 of the Water Code as CLWA's recycled water program expands.

To determine potential recycled water users, a cost of service analysis was conducted. As explained in the 2010 UWMP, an initial list of potential recycled water users was reduced by evaluating the potential users that would be most expensive to serve until potential users totaled approximately 17,400 af. The unit cost to serve each user was calculated using the capital costs for pipelines, reservoirs, and pump stations, as well as operational costs for pumping. The areas retained for recycled water service have costs ranging from $120 to $5,000 per afy; however, only two of the proposed phases in the Recycled Water Master Plan had costs above $1,000 per afy. Areas eliminated from service had costs as high as $13,000 per afy. The resulting proposed recycled water service area encompasses a large portion of CLWA's western service area.

The total potential annual recycled water demand identified in the Recycled Water Master Plan that is cost effective to serve, including Newhall Ranch, is approximately 22,800 afy. Of this total, 21,300 afy is projected use by purveyor customers. Implementation of the recycled water system is expected to occur over the next 40 years.

Based in part on these cost considerations, the 2010 UWMP states that potential demand for recycled water is equal to supplies (see Table 4-5 in the 2010 UWMP).

In addition to the CLWA Master Plan, the EIR for the Newhall Ranch Specific Plan and WRP analyzed the provision of recycled water for the entire Specific Plan site, including Mission Village. The Final EIR for Mission Village also analyzed Mission Village's use of recycled water at the project level. Use of recycled water offsets potable water demand (including imported SWP water and groundwater) in the Santa Clarita Valley.

2.4.3 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 recycled water rights in the Santa Clarita Valley. The "short title" for each document is provided below.

- Agreement between the County Sanitation Districts of Los Angeles County and CLWA, July 24, 1996.
- Recycled Water Master Plan, Draft Report, May 2002.
- 2010, 2011, 2012, and 2013 Santa Clarita Valley Water Reports.

2.4.4 PERMITS/APPROVALS OR OTHER NECESSARY REGULATORY APPROVALS

The primary recycled water-related documents that have received local approvals are listed below:

- 1998 Santa Clarita Valley Sanitation District 2015 Santa Clarita Valley Joint Sewerage System Facilities Plan and certified EIR (SCH No. 1996041084).
- 1999/2003 Newhall Ranch Specific Plan EIR documentation (SCH No. 1995011015).

- 2006/2007 Draft and Final Programmatic EIRs for the 2002 Draft Recycled Water Master Plan (SCH No. 2005041138).
- 2010 UWMP.
- 2010/2011 Mission Village Draft, Final, and Revised Draft EIRs, and Additional Environmental Information (SCH No. 2005051143), and resolutions and other final action by the County.
- 2013 Final SCVSD Chloride Compliance Facilities Plan (Final Facilities Plan) and related Final EIR (October 2013; SCH No. 2012011010).

3.0 WATER DEMAND AND SUPPLY SUMMARY

The projected total water demand for the Mission Village project is 2,743 afy in an average/normal year. To meet this demand, water would be provided to the Project by VWC. Based on the Mission Village Final EIR, Section 4.8, Water Service and VWC's WSA, supplies are available to meet Project demand in conjunction with other existing and planned uses in VWC's service area — without creating any water shortages or any significant environmental impacts.[36]

3.1 WATER DEMAND

In assessing whether a sufficient water supply is available, SB 221 requires the identification of the projected demand associated with the proposed subdivision, in addition to all existing and planned future uses (Gov. Code §66473.7(a)(2)). **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 UWMP. These demands include all existing and planned future uses, including agricultural and other non-municipal uses in the Santa Clarita Valley. The demands also account for the water needed to serve the Mission Village project because, as stated above, VWC included the Mission Village project demand in VWC's current and projected water deliveries data provided as part of the adopted UWMP.

[36] The Mission Village Final EIR, which was certified by the County Board on October 25, 2011, evaluated the water service impacts of the Project — the second subdivision map within the previously approved Newhall Ranch Specific Plan. In addition, VWC prepared the "Water Supply Assessment" for the Project (July 2010). The WSA found that VWC and CLWA have existing water entitlements, rights, and contracts to meet future demand as needed over time, and have committed sufficient capital resources and planned investments in various water programs and facilities to serve all of its existing and planned customers. VWC has identified specific water supplies provided by Newhall, combined with other supplies and operational strategies to demonstrate short- and long-term water availability and reliability for the Project, in addition to other existing and planned future uses within the Santa Clarita Valley over variable years within a 20-year horizon.

Table 9
Summary of Projected Water Demands[(1)(2)(3)]

Purveyor	Demand (afy)									Annual Increase
	2010	2015	2020	2025	2030	2035	2040	2045	2050	
District #36	1,243	1,759	2,189	2,619	3,048	3,478	3,908	4,338	4,768	3.5%
NCWD	10,560	12,571	14,246	15,922	17,598	19,273	20,949	22,624	24,300	2.2%
SCWD	27,816	31,633	34,814	37,995	41,176	44,357	47,538	50,719	53,900	1.7%
VWC	30,354	34,107	37,235	40,362	43,490	46,617	49,745	52,872	56,000	1.6%
Total Purveyor	**69,973**	**80,070**	**88,484**	**96,898**	**105,313**	**113,725**	**122,141**	**130,553**	**138,968**	**1.8%**

Notes:

(1) Summary of demands are from Tables 2-3 through 2-6 of the 2010 UWMP.

(2) Reflects existing and projected water demands of the four retail purveyors within the CLWA service area.

(3) Demands exclude non-purveyor water demands. Similarly, supplies evaluated in the 2010 UWMP generally exclude non-purveyor supplies; however, the annual Santa Clarita Valley Water Reports contain water supply utilization by agricultural and other users (see, e.g., 2013 Santa Clarita Valley Water Report, Tables 2-2 and 2-3).

Source: 2010 UWMP, Table 2-2; 2013 Santa Clarita Valley Water Report, Tables 2-2 and 2-3.

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

Table 10
Valencia Water Company Past, Current and Projected Metered Water Deliveries (by customer type)

Year	Water Use Sectors	Single Family	Multi-Family	Commercial	Industrial	Institutional/ Government	Landscape[1]	Total[2]
2010[3]	No. of accounts	25,386	8,854	1,546	451	646	13	**36,896**
	Deliveries (af)	14,384	1,845	6,981	1,856	4,586	702	**30,354**
2015	No. of accounts	26,497	11,956	1,598	485	647	362	**41,545**
	Deliveries (af)	14,883	2,993	7,203	1,990	4,595	2,442	**34,107**
2020	No. of accounts	27,423	14,552	1,641	514	648	652	**45,419**
	Deliveries (af)	15,299	3,949	7,389	2,101	4,603	3,894	**37,235**
2025	No. of accounts	28,348	17,127	1,684	542	650	943	**49,294**
	Deliveries (af)	15,715	4,906	7,575	2,213	4,611	5,343	**40,362**
2030	No. of accounts	29,274	19,713	1,727	570	651	1,233	**53,168**
	Deliveries (af)	16,130	5,862	7,760	2,324	4,619	6,794	**43,490**
2035	No. of accounts	30,200	22,298	1,770	599	652	1,524	**57,042**
	Deliveries (af)	16,546	6,818	7,946	2,436	4,627	8,244	**46,617**
2040	No. of accounts	31,125	24,883	1,813	627	653	1,814	**60,917**
	Deliveries (af)	16,962	7,775	8,131	2,548	4,635	9,696	**49,745**
2045	No. of accounts	32,051	27,469	1,856	656	654	2,105	**64,791**
	Deliveries (af)	17,378	8,731	8,317	2,659	4,643	11,144	**52,872**
2050	No. of accounts	32,977	30,054	1,900	684	655	2,395	**68,665**
	Deliveries (af)	17,793	9,687	8,503	2,771	4,650	12,596	**56,000**

Notes:
(1) Landscape customers consist of potable and recycled water users for outdoor irrigation.
(2) Totals do not include fire services.
(3) Year 2010 projection based on 2009 actual data. Growth to 2015 reflects six years of data.
Source: 2010 UWMP, Table 2-6

As to the Mission Village project demand, GSI Water Solutions, Inc., a consulting firm specializing in groundwater and other water resources, provided updated analysis of projected water demands for the Mission Village project. Upon build-out of the Mission Village project, the water demands for Mission Village are projected to be as follows:

- *Potable* demand: 1,492 afy
- *Non-potable* demand: 1,251 afy
- *Total* project demand: 2,743 afy

The above-projected project demand represents GSI's update to the prior analysis of the project's water demand conducted in July 2010. This update accounts for small changes in acreages or dwelling units for certain land use categories, as reflected in the Mission Village Vesting Tentative Tract Map filed with the County in December 2010, and approved by the County Board of Supervisors in May 2012. The slight update to the project's water demand consists only of minor clarifications based on the approved tract map, and does not give rise to any environmental impacts.

GSI's updated analysis is reflected in its technical memorandum dated October 2, 2014, which is part of the record for this WV, available for public review upon request to VWC, and incorporated by reference.

Table 10A below presents GSI's summary of the minor changes in the Mission Village estimated water demands for each land use category within the Mission Village project site.

Table 10A
Comparison of Prior and Updated Water Demand Projections for Mission Village (acre-feet per year)

	Prior Water Demand Analysis July 2010			Updated Water Demand Analysis Using the Land-Use Plan Approved by Los Angeles County in May 2012			Change in Projected Water Demands		
Land Use	**Potable**	**Nonpotable**	**Total**	**Potable**	**Nonpotable**	**Total**	**Potable**	**Nonpotable**	**Total**
Residential Development									
Estate	0	0	0	0	0	0	0	0	0
Low	37	0	37	37	0	37	0	0	0
Low Medium (Single-Family)	142	0	142	128	0	128	-14	0	-14
Medium (Detached Condos)	86	0	86	84	0	84	-2	0	-2
High (Attached Units)	1,324	218	1,542	1,090	190	1,280	-234	-28	-262
Mixed Use (Attached Units)	0	0	0	0	0	0	0	0	0
Subtotals	**1,589**	**218**	**1,807**	**1,339**	**190**	**1,529**	**-250**	**-28**	**-278**
Nonresidential Development									
Mixed-Use Commercial									
Retail (including library)	4	22	26	2	12	14	-2	-10	-12
Office (low-rise)	70	62	132	70	62	132	0	0	0
Commercial Retail	0	0	0	19	7	26	19	7	26
Business Park (Office)	0	0	0	6	4	10	6	4	10
Business Park (Industrial)	0	0	0	0	0	0	0	0	0
Visitor Serving	0	0	0	0	0	0	0	0	0
Water Reclamation Plant	0	0	0	0	0	0	0	0	0
Electrical Substation	0	0	0	0	0	0	0	0	0
Fire Stations	5	3	8	5	3	8	0	0	0
Hotel/Spa	0	0	0	0	0	0	0	0	0
Sr. Assisted Living	0	0	0	42	20	62	42	20	62
Golf Club House	0	0	0	0	0	0	0	0	0
Schools	3	14	17	3	14	17	0	0	0
Subtotals	**82**	**101**	**183**	**147**	**122**	**269**	**65**	**21**	**86**
Open Space and Parks									
Recreation									
Recreation Centers	2	40	42	2	51	53	0	11	11
Neighborhood Parks	3	88	91	4	92	96	1	4	5
Lake-Water	0	0	0	0	0	0	0	0	0
Lake-Park Area	0	0	0	0	0	0	0	0	0
Golf Course	0	0	0	0	0	0	0	0	0
Arterial Highways									
Hardscape/Road Section	0	0	0	0	0	0	0	0	0
Landscape Area	0	112	112	0	112	112	0	0	0
Major Open Areas									
Natural Open Space	0	0	0	0	0	0	0	0	0
River Corridor	0	0	0	0	0	0	0	0	0
Non-Irrigated Slopes	0	0	0	0	0	0	0	0	0
Irrigated Slopes, Wet Zones	0	684	684	0	684	684	0	0	0
O.S. Drainage Facilities	0	0	0	0	0	0	0	0	0
O.S. LDZ, O.S. Trail LDZ, SD&SS easments	0	0	0	0	0	0	0	0	0
Subtotals	**5**	**924**	**929**	**6**	**939**	**945**	**1**	**15**	**16**
TOTAL	**1,676**	**1,243**	**2,919**	**1,492**	**1,251**	**2,743**	**-184**	**8**	**-176**

3.2 WATER SUPPLIES -- HISTORIC AND EXISTING SOURCES

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

In 2012, VWC's service area-wide demands were 30,022 af, and the total municipal demand for water in the CLWA service area was 69,712 af. Based on VWC's water demand factors, VWC has estimated that the water demand for the Mission Village project, as approved, is 2,743 afy at build-out in a average/normal year. Projected water demand would increase by approximately 10% in a dry year to a total of approximately 3,017 afy.

The 2013 Santa Clarita Valley Water Report (June 2014) provides a detailed summary of the local and imported water supplies used to meet water demands in the Santa Clarita Valley over a 33-year horizon (1980-2013). The 2013 Santa Clarita Valley Water Report also analyzes the historical availability and use of water by each retail purveyor (SCWD, District #36, NCWD, and VWC), and for all agricultural, industrial and other users in the Valley, for the same 33-year horizon.

As shown in **Table 11**, Total Water Supply Utilization from Municipal, Agricultural, and Other Uses (af), below, 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 85,406 afy in 2012.

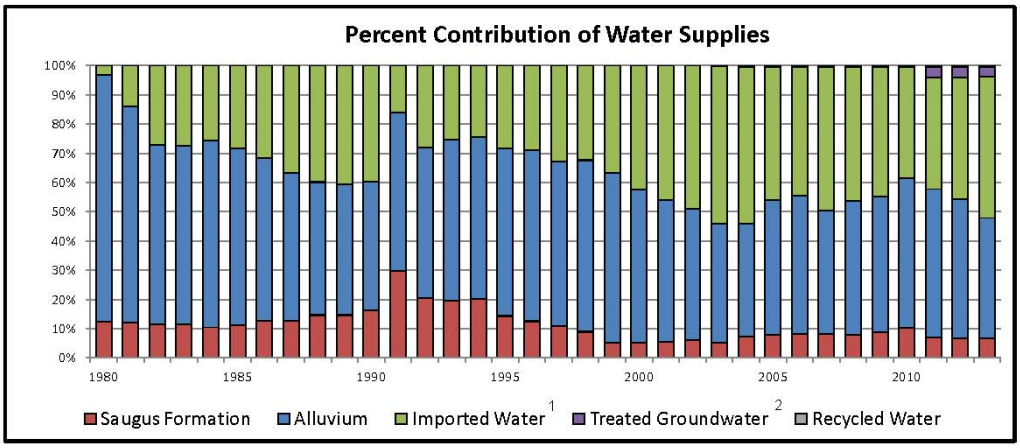
Table 11
Total Water Supply Utilization from Municipal, Agricultural, and Other Uses (af)

	Purchased from CLWA		Local Production		Other	
Year	*Imported Water*[1]	*Treated Groundwater*[2]	*Alluvium*	*Saugus Formation*	*Recycled Water*	**Total**
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**

Source: 2013 Santa Clarita Valley Water Report, Table 2-3.

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



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.

Source: 2013 Santa Clarita Valley Water Report, p. 2-5.

Provided below is a summary of water supply and demand projections presented in the 2010 UWMP that address the requirements of SB 221 for the Mission Village project.

3.2.1 WATER SUPPLIES — CURRENT AND PLANNED

Table 12, Summary of Current and Planned Water Supplies and Banking Programs, below, summarizes the existing and planned water supplies and banking programs 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 VWC 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 VWC, 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 40 years in combination with conservation of non-essential demand during certain dry years, the water supply plan described in the 2010 UWMP successfully achieves this goal.

Table 12
Summary of Current and Planned Water Supplies and Banking Programs[1]

Water Supply Sources	Supply (af)								
	2010	2015	2020	2025	2030	2035	2040	2045	2050
Existing Supplies									
Existing Groundwater[2]									
Alluvial Aquifer	24,385	24,000	24,000	24,000	25,000	25,000	25,000	25,000	25,000
Saugus Formation[3]	6,725	9,225	10,225	10,225	10,225	10,225	10,225	10,225	10,225
Total Groundwater	**31,110**	**33,225**	**34,225**	**34,225**	**35,225**	**35,225**	**35,225**	**35,225**	**35,225**
Recycled Water[4] **Total Recycled**	**325**	**325**	**325**	**325**	**325**	**325**	**325**	**325**	**325**
Imported Water									
State Water Project[5]	58,300	58,100	57,900	57,600	57,400	57,400	57,400	57,400	57,400
Flexible Storage Accounts[6]	6,060	6,060	4,680	4,680	4,680	4,680	4,680	4,680	4,680
Buena Vista - Rosedale	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000
Nickel Water - Newhall Land	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607
Total Imported	**76,967**	**76,767**	**75,187**	**74,887**	**74,687**	**74,687**	**74,687**	**74,687**	**74,687**
Existing Banking Programs[7]									
Rosedale - Rio Bravo	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Semitropic	15,000	15,000	15,000	–	–	–	–	–	–
Semitropic - Newhall Land	4,950	4,950	4,950	4,950	4,950	4,950	4,950	4,950	4,950
Total Banking	**39,950**	**39,950**	**39,950**	**24,950**	**24,950**	**24,950**	**24,950**	**24,950**	**24,950**
Planned Supplies									
Future Groundwater[8]									
Alluvial Aquifer	–	–	1,000	2,000	3,000	4,000	5,000	6,000	7,000
Saugus Formation	–	1,375	1,375	1,375	1,375	1,375	1,375	1,375	1,375
Total Groundwater	**–**	**1,375**	**2,375**	**3,375**	**4,375**	**5,375**	**6,375**	**7,375**	**8,375**
Recycled Water[9] **Total Recycled**	–	975	2,725	5,225	7,775	10,275	13,775	17,275	20,975
Banking Programs **Total Banking**	–	–	–	**10,000**	**10,000**	**20,000**	**20,000**	**20,000**	**20,000**

Notes:
[1] The values shown under "Existing Supplies" and "Planned Supplies" are projected to be available in average/normal years. The values shown under "Existing Banking Programs" and "Planned Banking Programs" are the maximum capacity of program withdrawals.
[2] Existing groundwater supplies represent the quantity of groundwater anticipated to be pumped with existing wells. As indicated in Tables 3-8 and 3-9 and Tables 3-4 and 3-5 of the 2009 Groundwater Basin Yield Update, individual purveyors may have well capacity in excess of quantities shown in this table. As indicated in Table 3-10 of the 2010 UWMP, existing and planned groundwater pumping remain within the groundwater operating plan.
[3] SCWD's existing Saugus 1 and Saugus 2 wells resumed production in 2011 with the completion of the perchlorate treatment facility.
[4] Represents recycled water being delivered in 2010 with existing facilities. CLWA currently has 1,700 afy under contract.
[5] SWP supplies are based on DWR's "2009 Delivery Reliability Report."
[6] Includes both CLWA and Ventura County entities flexible storage accounts. Initial term of agreement with Ventura County entities expires after 2015.
[7] Supplies shown are annual amounts that can be withdrawn and would typically be used only during dry years.
[8] 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 the Groundwater Basin Yield Update. As indicated in Table 3-10 of the 2010 UWMP, existing and planned groundwater pumping remain within the groundwater operating plan.
[9] See Table 4-3 of the 2010 UWMP. Total Purveyor Recycled Water less Existing Recycled Supply.
Source: 2010 UWMP

The subject of perchlorate contamination and its impact on groundwater supplies was extensively addressed in both the 2010 UWMP and the certified Mission Village Final EIR. The source of the contamination is believed to be 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 WV 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: (a) 2010 UWMP, Chapters 5 and 6, and Appendix I; (b) 2013 Santa Clarita Valley Water Report (June 2014); and (c) Mission Village Revised Draft EIR, Section 4.8, Water Service.

In Decision 06-08-012, dated August 24, 2006, the CPUC rejected the Sierra Club's claims that the perchlorate containment program in the Santa Clarita Valley had not progressed and was unfunded. The CPUC stated, at page 15:

> "According to Valencia, CLWA developed an Interim Remedial Action Plan to address groundwater contamination by perchlorate in conformance with Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and that action plan was approved by the California Department of Toxic Substances Control in January 2006. CLWA also completed CEQA review of its remedial action plan in the same time frame, and neither the action plan nor the CEQA review has been subject to any judicial challenge. The final design for treatment facilities is nearly complete; the groundbreaking ceremony is set to occur in August 2006; the construction work is scheduled to be put out for bid in the fall of 2006, with construction to be completed and operation to commence in 2007. Funding to cover all remedial work has been secured by a settlement between Whittaker-Bermite and its insurance carriers, with many millions of dollars currently held in escrow. A settlement of claims by CLWA and other water purveyors is pending, and is expected to result in the assignment of the escrowed funds for implementation of CLWA's Interim Remedial Action Plan."

In summary, since 2006 to the present, work continues on multiple levels to address groundwater contaminated by perchlorate stemming from past manufacturing activities on the former Whittaker-Bermite site. CLWA and the local retail purveyors are proceeding to restore the production capacity of the remaining groundwater supply wells contaminated by perchlorate, while working on the objectives of containing the downgradient migration of perchlorate.

Based on the information presented in the Mission Village Draft EIR, and the updated information provided in Topical Response 9 in the Mission Village Additional Environmental Information (October 2011), it is appropriate to conclude that substantial progress continues to be made in responding to perchlorate contamination resulting from the former Whittaker-Bermite site and that the facilities needed for perchlorate remediation/treatment are in place and

being actively monitored by CLWA, local retail purveyors, and the regulatory agencies (*e.g.*, DDW).

3.2.2 AVERAGE/NORMAL YEAR SUPPLIES AND DEMAND

Table 13, Projected Average Year Supplies and Demands, below, summarizes the water supplies available to meet demands over the 40-year planning period studied in the 2010 UWMP during an average/normal water year. As presented, the water supply is broken down into existing and planned water supply sources, including wholesale (imported) water, local supplies, and banking programs. Demands are shown with and without the urban demand reduction resulting from SB X7-7 water conservation objectives. 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 year through 2050.

Note also Appendix C of the 2010 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 multiple-dry) and same planning horizon as used in the adopted UWMP.

The "retail purveyor" water supply and demand data (Appendix C of the 2010 UWMP) responds to County Development Monitoring System (DMS) criteria for determining an acceptable level of water supply by retail purveyor (VWC) in an average water year.

Specifically, Appendix C of the 2010 UWMP, Tables C-1 and C-2 reflect the average year existing and planned total water supplies broken down by retail purveyor, and Table C-3 compares average year demands to total supplies by retail purveyor, and shows that in an average year, VWC's total existing and planned supplies exceed demand from 2015 through 2050. These tables are reproduced in **Appendix 1** to this WV — with the VWC demand and supplies yellow highlighted.

Table 13
Projected Average Year Supplies and Demands

Water Supply Sources	Supply (af)							
	2015	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
EXISTING SUPPLIES								
Existing Groundwater[1]								
Alluvial Aquifer	24,000	24,000	24,000	25,000	25,000	25,000	25,000	25,000
Saugus Formation[2]	9,225	10,225	10,225	10,225	10,225	10,225	10,225	10,225
Subtotal Groundwater	*33,225*	*34,225*	*34,225*	*35,225*	*35,225*	*35,225*	*35,225*	*35,225*
Recycled Water[3]	325	325	325	325	325	325	325	325
Imported Water[4]								
State Water Project[5]	58,100	57,900	57,600	57,400	57,400	57,400	57,400	57,400
Flexible Storage Accounts[6]	—	—	—	—	—	—	—	—
Buena Vista–Rosedale	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000
Nickel Water–Newhall Land	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607
Subtotal Imported	*70,707*	*70,507*	*70,207*	*70,007*	*70,007*	*70,007*	*70,007*	*70,007*
Banking Programs[6]								
Rosedale–Rio Bravo	—	—	—	—	—	—	—	—
Semitropic	—	—	—	—	—	—	—	—
Semitropic–Newhall Land	—	—	—	—	—	—	—	—
Subtotal Banking	—	—	—	—	—	—	—	—
Total Existing Supplies	**104,257**	**105,057**	**104,757**	**105,557**	**105,557**	**105,557**	**105,557**	**105,557**
PLANNED SUPPLIES								
Future Groundwater[7]								
Alluvial Aquifer	—	1,000	2,000	3,000	4,000	5,000	6,000	7,000
Saugus Formation	1,375	1,375	1,375	1,375	1,375	1,375	1,375	1,375
Subtotal Groundwater	*1,375*	*2,375*	*3,375*	*4,375*	*5,375*	*6,375*	*7,375*	*8,375*
Recycled Water[3]	975	2,725	5,225	7,775	10,275	13,775	17,275	20,975
Banking Programs[6]	—	—	—	—	—	—	—	—
Total Planned Supplies	**2,350**	**5,100**	**8,600**	**12,150**	**15,650**	**20,150**	**24,650**	**29,350**

Table 13
Projected Average Year Supplies and Demands

Water Supply Sources	Supply (af)							
	2015	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
Total Existing and Planned Supplies	**106,607**	**110,157**	**113,357**	**117,707**	**121,207**	**125,707**	**130,207**	**134,907**
	Demand (af)							
Demand (without conservation)[8]	80,070	88,484	96,898	105,312	113,726	122,140	130,554	138,968
20X2020 Reduction[9]	9,027	19,626	21,166	22,770	24,342	25,914	27,486	29,058
Reduction from Recycled Water[10]	1,300	3,050	5,550	8,100	10,600	14,100	17,600	21,300
Reduction from Water Conservation[11]	7,727	16,576	16,662	16,748	16,833	16,919	17,005	17,091
Demand with Conservation[12]	**72,343**	**71,908**	**80,236**	**88,564**	**96,892**	**105,220**	**113,549**	**121,877**

(1) Existing groundwater supplies represent the quantity of groundwater anticipated to be pumped with existing wells. As indicated in Tables 3-8 and 3-9 and Tables 3-4 and 3-5 of the 2009 Basin Yield Update, individual purveyors may have well capacity in excess of quantities shown in this table. As indicated in Table 3-10 of the 2010 UWMP, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 3-5 of the 2010 UWMP.

(2) SCWD's existing Saugus 1 and Saugus 2 wells resumed production in 2011 with the completion of the perchlorate treatment facility.

(3) Recycled water projections from Table C-1 and C-2 of the 2010 UWMP.

(4) The 2010 UWMP relied on DWR's "2009 State Water Project Delivery Reliability Report"; therefore, the water supply and demand data reflected above constitutes the best available information from an adopted plan.

(5) SWP Table A supply is approximately 60–61 percent (rounded) of CLWA's total maximum Table A amount of 95,200 af.

(6) Not needed in average/normal years.

(7) 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 Table 3-10 of the 2010 UWMP, existing and planned groundwater pumping remain within the groundwater operating plan.

(8) Demand w/o Conservation data from Table C-3 of the 2010 UWMP.

(9) 20x2020 Reduction for the Region from Table 2-22 of the UWMP.

(10) Recycled Water Reduction for the Region from Table 2-22 of the 2010 UWMP; does not include demands from Honor Rancho.

(11) Reduction from Water Conservation calculation for Region from Table 2-22 of the 2010 UWMP.

(12) Demand w/Conservation is Demand w/o Conservation minus Reduction from Water Conservation.

Source: 2010 UWMP.

3.2.3 SINGLE DRY-YEAR SUPPLIES AND DEMAND

The water supplies and demand over the 2010 UWMP 40-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. Base demand (demand without conservation) during dry years was assumed to increase by 10 percent. Demands also are shown with the urban demand reduction resulting from SB X7-7 water conservation objectives. 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 2010 UWMP for the breakdown by retail purveyor of supplies available to meet demand over the 2010 UWMP 40-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 purveyor (VWC) in a single-dry year.

Specifically, Appendix C of the 2010 UWMP, Tables C-4 and C-5 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, VWC's total existing and planned supplies exceed demand from 2015 through 2050. These tables are reproduced in **Appendix 2** to this WV — with the VWC demand and supplies yellow highlighted.

Table 14
Projected Single-Dry Year Supplies and Demands

Water Supply Sources	Supply (af)							
	2015	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
EXISTING SUPPLIES								
Existing Groundwater[1]								
Alluvial Aquifer	20,300	20,250	20,200	21,050	21,050	21,025	21,000	20,650
Saugus Formation	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400
Subtotal Groundwater	*40,700*	*40,650*	*40,600*	*41,450*	*41,450*	*41,425*	*41,400*	*41,050*
Recycled Water[2]	325	325	325	325	325	325	325	325
Imported Water[3]								
State Water Project[4]	11,900	11,000	10,000	9,100	9,100	9,100	9,100	9,100
Flexible Storage Accounts[5]	6,060	4,680	4,680	4,680	4,680	4,680	4,680	4,680
Buena Vista–Rosedale	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000
Nickel Water–Newhall	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607
Subtotal Imported	*30,567*	*28,287*	*27,287*	*26,387*	*26,387*	*26,387*	*26,387*	*26,387*
Banking Programs								
Rosedale–Rio Bravo[6]	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Semitropic[7]	15,000	15,000	—	—	—	—	—	—
Semitropic–Newhall[8]	4,950	4,950	4,950	4,950	4,950	4,950	4,950	4,950
Subtotal Banking	*39,950*	*39,950*	*24,950*	*24,950*	*24,950*	*24,950*	*24,950*	*24,950*
Total Existing Supplies	**111,542**	**109,212**	**93,162**	**93,112**	**93,112**	**93,087**	**93,062**	**92,712**
PLANNED SUPPLIES								
Future Groundwater[9]								
Alluvial Aquifer	200	1,250	2,300	3,850	4,850	5,875	6,900	7,750
Saugus Formation (Restored Wells)	825	3,777	3,777	3,777	3,777	3,777	3,777	3,750
Saugus Formation (New Wells)	2,875	9,923	9,923	9,923	9,923	9,923	9,923	9,950
Subtotal Groundwater	*3,900*	*14,950*	*16,000*	*17,550*	*18,550*	*19,575*	*20,600*	*21,450*
Recycled Water[2]	975	2,725	5,225	7,775	10,275	13,775	17,275	20,975
Banking Programs[10]	—	—	10,000	10,000	20,000	20,000	20,000	20,000
Total Planned Supplies	**4,875**	**17,675**	**31,225**	**35,325**	**48,825**	**53,350**	**57,875**	**62,425**

Table 14
Projected Single-Dry Year Supplies and Demands

Water Supply Sources	Supply (af)							
	2015	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
Total Existing and Planned Supplies	116,417	126,887	124,387	128,437	141,937	146,437	150,937	155,137
	Demand (af)							
Demand (without conservation)[11]	88,077	97,333	106,588	115,843	125,099	134,354	143,609	152,865
20X2020 Reduction[12]	9,027	19,626	21,166	22,770	24,342	25,914	27,486	29,058
Reduction from Recycled Water[13]	1,300	3,050	5,550	8,100	10,600	14,100	17,600	21,300
Reduction from Water Conservation[14]	7,727	16,576	16,662	16,748	16,833	16,919	17,005	17,091
Demand with Conservation[15]	**80,350**	**80,757**	**89,926**	**99,096**	**108,265**	**117,434**	**126,604**	**135,773**

(1) Existing groundwater supplies represent the quantity of groundwater anticipated to be pumped with existing wells. As indicated in Tables 3-8 and 3-9 and Tables 3-4 and 3-5 of the 2009 Basin Yield Update, individual purveyors may have well capacity in excess of quantities shown in this table. As indicated in Table 3-5 of the 2010 UWMP, existing and planned groundwater pumping remain within the groundwater operating plan. SCWD's existing Saugus 1 and Saugus 2 wells resumed production in 2011 with the completion of the perchlorate treatment facility.

(2) Recycled water projections from Tables C-4 and C-5 of the 2010 UWMP.

(3) The 2010 UWMP relied on DWR's 2009 Delivery Reliability Report; therefore, the water supply and demand data reflected above constitutes the best available information from an adopted plan.

(4) SWP Table A supplies are calculated by multiplying CLWA's Table A amount of 95,200 af by percentages of single-dry year deliveries projected to be available on Table 6-4 (7 percent) and Table 6-13 (11 percent) of DWR's 2009 Delivery Reliability Report. As suggested by DWR, SWP supplies for the 5-year increments between 2010 and 2030 are interpolated between these values.

(5) Includes both CLWA and Ventura County entities flexible storage accounts. Initial Term of agreement with Ventura County entities expires after 2015.

(6) CLWA has a maximum withdrawal capacity of 20,000 afy and a storage capacity of 100,000 AF. As of 6/1/2011, there is 100,000 AF of recoverable water.

(7) CLWA has 45,920 af of recoverable water as of 6/1/2011.

(8) Newhall has a maximum withdrawal capacity of 4,950 afy and a storage capacity of 55,000 af. As of December 31, 2013, there is 27,505 af of recoverable water. Delivery of stored water from the Newhall's Semitropic Water Banking and Exchange Program is available to VWC.

(9) 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 3,777 afy of restored capacity from VWC Well 201 and approximately 10,000 afy of new Saugus Formation well capacity. 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 Basin Yield Update. As indicated in Table 3-11 of the 2010 UWMP, existing and planned groundwater pumping remain within the groundwater operating plan.

(10) Includes banking programs with 10,000 af of additional pumpback capacity by 2025 and a second additional 10,000 af by 2035.

(11) Demand w/o Conservation data from Table C-6 of the 2010 UWMP. Includes a 10-percent increase in demand during dry years.

(12) 20x2020 Reduction for the Region from Table 2-22 of the 2010 UWMP.

(13) Recycled Water Reduction for the Region from Table 2-22 of the 2010 UWMP; does not include demands from Honor Rancho.

(14) Reduction from Water Conservation calculation for Region from Table 2-22 of the UWMP.

(15) Demand with Conservation is Demand without Conservation minus Reduction from Water Conservation.

Source: 2010 UWMP.

3.2.4 MULTIPLE DRY-YEAR SUPPLIES AND DEMAND

The water supplies and demand over the 2010 UWMP 40-year planning horizon were analyzed in the event of a four-year multiple-dry year event, similar to the drought that occurred in California during the years 1931 to 1934. **Table 15**, Projected Multiple-Dry Year Supplies and Demands, summarizes the existing and planned supplies available to meet demand during multiple-dry years. Base demand (demand without conservation) during dry years was assumed to increase by 10 percent. Demands also are shown with the urban demand reduction resulting from SB X7-7 conservation objectives. As shown in **Table 15**, 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 2010 UWMP for the breakdown by retail purveyor of supplies available to meet demand over the 2010 UWMP 40-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 purveyor (VWC) in a multiple-dry years.

Specifically, Appendix C of the 2010 UWMP, Tables C-7 and C-8 reflect the multiple-dry year existing and planned total water supplies broken down by retail purveyor, and Table C-9 compares multiple-dry year demands to total supplies by retail purveyor. Table C-9 shows that in a multiple-dry year, VWC's total existing and planned supplies exceed demand from 2015 through 2050.

These tables are reproduced in **Appendix 3** to this WV — with the VWC demand and supplies yellow highlighted.

Table 15
Projected Multiple-Dry Year Supplies and Demands

	Supply (af)							
Water Supply Sources	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
EXISTING SUPPLIES								
Existing Groundwater[1]								
Alluvial Aquifer	20,425	20,425	20,425	21,825	21,825	21,825	21,825	21,325
Saugus Formation	19,700	19,700	19,700	19,700	19,700	19,700	19,700	19,700
Subtotal Groundwater	*40,125*	*40,125*	*40,125*	*41,525*	*41,525*	*41,525*	*41,525*	*41,025*
Recycled Water[2]	325	325	325	325	325	325	325	325
Imported Water[3]								
State Water Project[4]	32,900	32,900	33,000	33,000	33,000	33,000	33,000	33,000
Flexible Storage Accounts[5]	1,510	1,170	1,170	1,170	1,170	1,170	1,170	1,170
Buena Vista–Rosedale	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000
Nickel Water—Newhall	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607
Subtotal Imported	*47,017*	*46,677*	*46,777*	*46,777*	*46,777*	*46,777*	*46,777*	*46,777*
Banking Programs								
Rosedale–Rio Bravo[6]	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Semitropic[7]	11,500	11,500	—	—	—	—	—	—
Semitropic–Newhall[8]	4,950	4,950	4,950	4,950	4,950	4,950	4,950	4,950
Subtotal Banking	*31,450*	*31,450*	*19,950*	*19,950*	*19,950*	*19,950*	*19,950*	*19,950*
Total Existing Supplies	**118,917**	**118,577**	**107,177**	**108,577**	**108,577**	**108,577**	**108,577**	**108,077**
PLANNED SUPPLIES								
Future Groundwater[9]								
Alluvial Aquifer	—	1,000	2,000	3,000	4,000	5,000	6,000	7,000
Saugus Formation (Restored Wells)	2,375	1,625	1,500	1,400	1,275	1,125	1,000	875
Saugus Formation (New Wells)	2,250	10,325	10,450	10,550	10,675	10,825	10,950	11,075
Subtotal Groundwater	*4,625*	*12,950*	*13,950*	*14,950*	*15,950*	*16,950*	*17,950*	*18,950*
Recycled Water[2]	975	2,725	5,225	7,775	10,275	13,775	17,275	20,975
Banking Programs[10]	—	—	7,500	7,500	15,000	15,000	15,000	15,000
Total Planned Supplies	**5,600**	**15,675**	**26,675**	**30,225**	**41,225**	**45,725**	**50,225**	**54,925**
Total Existing and Planned Supplies	**124,517**	**134,252**	**133,852**	**138,802**	**149,802**	**154,302**	**158,802**	**163,002**

Table 15
Projected Multiple-Dry Year Supplies and Demands

	Supply (af)							
Water Supply Sources	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
	Demand (af)							
Demand (without conservation)[11]	88,077	97,333	106,588	115,843	125,099	134,354	143,609	152,865
20X2020 Reduction[12]	9,027	19,626	21,166	22,770	24,342	25,914	27,486	29,058
Reduction from Recycled Water[13]	1,300	3,050	5,550	8,100	10,600	14,100	17,600	21,300
Reduction from Water Conservation[14]	7,727	16,576	16,662	16,748	16,833	16,919	17,005	17,091
Demand with Conservation[15]	**80,350**	**80,757**	**89,926**	**99,096**	**108,265**	**117,434**	**126,604**	**135,773**

(1) Existing groundwater supplies represent the quantity of groundwater anticipated to be pumped with existing wells. As indicated in Tables 3-8 and 3-9 and Tables 3-4 and 3-5 of the 2009 Basin Yield Update, individual purveyors may have well capacity in excess of quantities shown in this table. As indicated in Table 3-12, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 3-5 of the 2010 UWMP. SCWD's existing Saugus 1 and Saugus 2 wells resumed production in 2011 with the completion of the perchlorate treatment facility.

(2) Recycled water projections from Table C-7 and C-8 of the 2010 UWMP.

(3) The 2010 UWMP relied on DWR's 2009 Delivery Reliability Report; therefore, the water supply and demand data reflected above constitutes the best available information from an adopted plan.

(4) SWP Table A supplies are calculated by multiplying CLWA's Table A amount of 95,200 af by percentages of multiple-dry year deliveries projected to be available on Table 6-4 (34–36 percent) and Table 6-13 (28–32 percent) of DWR's 2009 Delivery Reliability Report. As suggested by DWR, SWP supplies for the 5-year increments between 2010 and 2030 are interpolated between these values.

(5) Includes both CLWA and Ventura County entities flexible storage accounts. Initial Term of agreement with Ventura County entities expires after 2015.

(6) CLWA has a maximum withdrawal capacity of 20,000 afy and a storage capacity of 100,000 af. As of 6/1/2011, there is 100,000 af of recoverable water.

(7) CLWA has 45,920 af of recoverable water as of 6/1/2011.

(8) Newhall Land has a maximum withdrawal capacity of 4,950 afy and a storage capacity of 55,000 af. As of December 31, 2013, there is 27,505 af of recoverable water. Delivery of stored water from the Newhall Land's Semitropic Water Banking and Exchange Program is available to VWC.

(9) 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 3,777 afy of restored capacity from VWC Well 201 and approximately 10,000 afy of new Saugus Formation well capacity. 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 Basin Yield Update. As indicated in Table 3-12 of the 2010 UWMP, existing and planned groundwater pumping remain within the groundwater operating plan.

(10) Includes banking programs with 10,000 af of additional pumpback capacity by 2025 and a second additional 10,000 af by 2035.

(11) Demand w/o Conservation data from Table C-9 of the 2010 UWMP. Includes a 10% increase in demand during dry years.

(12) 20x2020 Reduction for the Region from Table 2-22 of the 2010 UWMP.

(13) Recycled Water Reduction for the Region from Table 2-22 of the 2010 UWMP; does not include demands from Honor Rancho.

(14) Reduction from Water Conservation calculation for Region from Table 2-22 of the 2010 UWMP.

(15) Demand with Conservation is Demand without Conservation minus Reduction from Water Conservation.

Source: 2010 UWMP.

4.0 WATER SHORTAGE CONTINGENCY ANALYSIS

Water supplies may be interrupted or reduced significantly in a number of ways, 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 2010 UWMP, Section 8, describes how CLWA and the retail water purveyors plan to respond to such emergencies so that customer needs are met promptly and equitably. To date, both a Water Shortage Contingency Plan and a Drought Emergency Water Sharing Agreement have been prepared by CLWA and the retail purveyors. In addition, prohibitions, penalties, and financial impacts of shortages have been developed by CLWA, SCWD, NCWD and VWC and are summarized in the 2010 UWMP, Section 8.

In preparing this WV, VWC considered the urban water shortage contingency planning analysis set forth in the 2010 UWMP, Section 8, in determining the sufficiency of water supplies for the Mission Village project, in addition to all existing and planned future uses in VWC's service area within the Santa Clarita Valley.

On January 17, 2014, Governor Jerry Brown issued a statewide drought declaration in response to the driest year on record, which has resulted in water supplies that are drastically below normal. CLWA and the retail purveyors support the Governor's declaration and conservation message, and have prepared a Voluntary Water Conservation Action Plan that calls on residents and businesses in the Santa Clarita Valley to take reasonable actions to reduce water use and eliminate waste.

This Action Plan is aimed at increasing awareness of the critical water supply conditions throughout California and the immediate need for conservation by providing simple and easy steps for residents and businesses to take. The conservation goal is to reduce overall local water consumption by 20 percent. The water suppliers will continue to assess water supply conditions in 2014.

On July 15, 2014, the State Water Resources Control Board (State Board) approved an emergency regulation to ensure water agencies, their customers and state residents increase water conservation in urban settings or face possible fines or other enforcement measures. The State Board regulation is intended to reduce outdoor urban water use and also requires retail water providers to implement mandatory outdoor watering restrictions consistent with their water shortage contingency plans. In addition, in 2014, CLWA and the retail purveyors have prepared the Water Conservation Mandatory Action Plan as a component of the Water Shortage Contingency Plan calling for the adoption and implementation of mandatory conservation practices. Restrictions on outdoor watering include watering day restrictions and other measures designed to promote water conservation.[37]

If drought conditions persist through 2014 and 2015, the Santa Clarita Valley water purveyors may activate second and third stage conservation measures, which include additional mandatory restrictions and prohibitions in addition to the measures that already have been enacted. The adopted UWMP, Section 8, describes how CLWA and the retail purveyors plan to respond to

[37] For further water conservation information, please refer to the 2013 Santa Clarita Valley Water Report (June 2014), pages 5-1 through 5-5.

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

5.0 RELIABILITY PLANNING

CLWA and the retail purveyors have implemented a number of projects that are part of an overall program to provide the facilities needed to firm-up imported 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 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 2010 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. The 2010 UWMP summary tables show 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 or regulatory 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.

Groundwater banking and conjunctive use offer significant opportunities to improve water supply reliability for CLWA. 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 normal and wet years.[38]

As described above, CLWA has entered into groundwater banking and water exchange programs and has, in aggregate, approximately 150,000 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 2010 UWMP. CLWA and the purveyors have assessed the impact of DWR's 2013 SWP Delivery Reliability Report on the CLWA/purveyor water supply, and have determined that current anticipated supplies are available to meet existing and projected demands through the year 2050 consistent with the 2010 UWMP.[39]

[38] 2013 Santa Clarita Valley Water Report (June 2014), p. ES-9.

[39] Personal communication, Keith Abercrombie, General Manager, VWC, 2013, and Dan Masnada, General Manager, CLWA, 2013.

6.0 CONCLUSION

Based on the preceding analysis, which also relies upon the Mission Village Final EIR's water service analysis and VWC's WSA (July 2010), and pursuant to Government Code section 66473.7, this WV report concludes that the total water supplies projected to be available to VWC during average/normal, single-dry, and multiple-dry years within a 20-year projection are sufficient to meet the projected demand associated with the Mission Village project, in addition to existing and planned future uses, including agricultural and industrial uses.

APPENDIX 1

Table C-1
Average/Normal Year: Existing Water Supplies

	2015	2020	2025	2030	2035	2040	2045	2050
EXISTING SUPPLIES[a]								
Existing Groundwater[b]								
Alluvial Aquifer								
LACWWD 36[c]	0	0	0	0	0	0	0	0
NCWD	1,825	1,825	1,825	1,825	1,825	1,825	1,825	1,825
SCWD	10,500	10,500	10,500	11,500	11,500	11,500	11,500	11,500
VWC	11,675	11,675	11,675	11,675	11,675	11,675	11,675	11,675
Total	*24,000*	*24,000*	*24,000*	*25,000*	*25,000*	*25,000*	*25,000*	*25,000*
Saugus Formation								
LACWWD 36[c]	0	0	0	0	0	0	0	0
NCWD	3,525	3,525	3,525	3,525	3,525	3,525	3,525	3,525
SCWD[d]	2,850	3,350	3,350	3,350	3,350	3,350	3,350	3,350
VWC	2,850	3,350	3,350	3,350	3,350	3,350	3,350	3,350
Total	*9,225*	*10,225*	*10,225*	*10,225*	*10,225*	*10,225*	*10,225*	*10,225*
Recycled Water[e]								
LACWWD 36[c]	0	0	0	0	0	0	0	0
NCWD	0	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0	0
VWC	325	325	325	325	325	325	325	325
Total	*325*	*325*	*325*	*325*	*325*	*325*	*325*	*325*
Imported Water								
SWP Table A and Carryover[f]								
LACWWD 36[c]	1,656	1,943	2,217	2,489	2,688	2,901	3,091	3,269
NCWD	8,084	8,918	9,320	10,060	10,349	10,755	11,116	11,469
SCWD	23,918	24,263	24,268	23,963	24,541	24,979	25,369	25,787
VWC	24,442	22,776	21,795	20,888	19,822	18,765	17,825	16,875
Total	*58,100*	*57,900*	*57,600*	*57,400*	*57,400*	*57,400*	*57,400*	*57,400*
SWP Flexible Storage Accounts[g]								
LACWWD 36[c]	0	0	0	0	0	0	0	0
NCWD	0	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0	0
VWC	0	0	0	0	0	0	0	0
Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

Table C-1
Average/Normal Year: Existing Water Supplies

		2015	2020	2025	2030	2035	2040	2045	2050
Buena Vista-Rosedale									
LACWWD 36[(c)]		325	375	450	500	525	575	625	650
NCWD		1,600	1,750	1,825	1,975	2,050	2,100	2,175	2,250
SCWD		4,675	4,775	4,775	4,725	4,825	4,900	4,975	5,050
VWC		4,400	4,100	3,950	3,800	3,600	3,425	3,225	3,050
	Total	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*
Nickel Water - Newhall Land									
VWC	*Total*	*1,607*	*1,607*	*1,607*	*1,607*	*1,607*	*1,607*	*1,607*	*1,607*
Banking Programs[(g)]									
Rosedale Rio-Bravo									
LACWWD 36[(c)]		0	0	0	0	0	0	0	0
NCWD		0	0	0	0	0	0	0	0
SCWD		0	0	0	0	0	0	0	0
VWC		0	0	0	0	0	0	0	0
	Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Semitropic									
LACWWD 36[(c)]		0	0	0	0	0	0	0	0
NCWD		0	0	0	0	0	0	0	0
SCWD		0	0	0	0	0	0	0	0
VWC		0	0	0	0	0	0	0	0
	Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Semitropic – Newhall Land									
VWC		0	0	0	0	0	0	0	0
	Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
TOTAL EXISTING SUPPLIES									
LACWWD 36[(c)]		1,981	2,318	2,667	2,989	3,213	3,476	3,716	3,919
NCWD		15,034	16,018	16,495	17,385	17,749	18,205	18,641	19,069
SCWD		41,943	42,888	42,893	43,538	44,216	44,729	45,194	45,687
VWC		45,299	43,833	42,702	41,645	40,379	39,147	38,007	36,882
	Total	**104,257**	**105,057**	**104,757**	**105,557**	**105,557**	**105,557**	**105,558**	**105,557**

Notes:

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

(b) Existing groundwater supplies represent the quantity of groundwater anticipated to be pumped with existing wells. As indicated in Tables 3-8 and 3-9 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 Table 3-10, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 3-5.

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

(d) SCWD's existing Saugus 1 and Saugus 2 wells resumed production in 2011 with the completion of the perchlorate treatment facility.

(e) Per CLWA Draft Recycled Water Master Plan and Newhall Ranch Specific Plan.

Table C-1
Average/Normal Year: Existing Water Supplies

	2015	2020	2025	2030	2035	2040	2045	2050

(f) SWP supplies are based on the Department of Water Resources "*2009 State Water Project Delivery Reliability Report*."
(g) Not needed in average/normal years.

Source: 2010 UWMP, Appendix C

Table C-2
Average/Normal Year: Planned and Total Water Supplies

	2015	2020	2025	2030	2035	2040	2045	2050
PLANNED SUPPLIES[a]								
Future Groundwater[b]								
Alluvial Aquifer								
LACWWD 36[c]	0	0	0	0	0	0	0	0
NCWD	0	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0	0
VWC[d]	0	1,000	2,000	3,000	4,000	5,000	6,000	7,000
Total	*-*	*1,000*	*2,000*	*3,000*	*4,000*	*5,000*	*6,000*	*7,000*
Saugus Formation								
LACWWD 36[c]		500	500	500	500	500	500	500
NCWD		875	875	875	875	875	875	875
SCWD		0	0	0	0	0	0	0
VWC		0	0	0	0	0	0	0
Total		*1,375*	*1,375*	*1,375*	*1,375*	*1,375*	*1,375*	*1,375*
Recycled Water[f]								
LACWWD 36[c][e]	0	50	50	50	50	50	50	50
NCWD	200	500	1,000	1,275	1,775	2,275	2,775	3,275
SCWD	100	500	1,500	2,275	2,775	3,775	4,775	5,775
VWC	675	1,675	2,675	4,175	5,675	7,675	9,675	11,875
Total	*975*	*2,725*	*5,225*	*7,775*	*10,275*	*13,775*	*17,275*	*20,975*
Banking Programs[g]								
LACWWD 36[c]	0	0	0	0	0	0	0	0
NCWD	0	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0	0
VWC	0	0	0	0	0	0	0	0
Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
TOTAL PLANNED SUPPLIES								
LACWWD 36[c]	500	550	550	550	550	550	550	550
NCWD	1,075	1,375	1,875	2,150	2,650	3,150	3,650	4,150
SCWD	100	500	1,500	2,275	2,775	3,775	4,775	5,775
VWC	675	2,675	4,675	7,175	9,675	12,675	15,675	18,875
Total	**2,350**	**5,100**	**8,600**	**12,150**	**15,650**	**20,150**	**24,650**	**29,350**
PURVEYOR EXISTING AND PLANNED SUPPLIES								
LACWWD 36[c]	2,481	2,868	3,217	3,539	3,763	4,026	4,266	4,469

Table C-2
Average/Normal Year: Planned and Total Water Supplies

	2015	2020	2025	2030	2035	2040	2045	2050
NCWD	16,109	17,393	18,370	19,535	20,399	21,355	22,291	23,219
SCWD	42,043	43,388	44,393	45,813	46,991	48,504	49,969	51,462
VWC	45,974	46,508	47,377	48,820	50,054	51,822	53,682	55,757
Total	**106,607**	**110,157**	**113,357**	**117,707**	**121,207**	**125,707**	**130,208**	**134,907**

Notes:

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

(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 Table 3-10, existing and planned groundwater pumping remain within the basin operating plan shown on Table 3- 5.

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

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

(e) LACWWD 36 anticipates connecting a newly completed well in 2011.

(f) Per CLWA Draft Recycled Water Master Plan and Newhall Ranch Specific Plan.

(g) Not needed in average/normal years.

Source: 2010 UWMP, Appendix C

Table C-3
Average/Normal Year: Demands with SBX7-7 Reductions and Comparison to Total Supplies

	2015	2020	2025	2030	2035	2040	2045	2050
WATER DEMANDS W/ AND W/O CONSERVATION[a]								
LACWWD 36[c]								
Demand w/o Conservation[c]	1,759	2,189	2,619	3,048	3,478	3,908	4,338	4,768
Anticipated Conservation Objective[d]	176	438	524	610	696	782	868	954
Reduction from Recycled Water[e]	0	50	50	50	50	50	50	50
Net Anticipated Water Conservation[f]	176	388	474	560	646	732	818	904
Demand w/ Conservation[g]	1,584	1,802	2,146	2,489	2,833	3,177	3,521	3,865
Existing and Planned Supplies	*2,481*	*2,868*	*3,217*	*3,539*	*3,763*	*4,026*	*4,266*	*4,469*
SBX7-7 Compliance Calculations								
NCWD								
Demand w/o Conservation[c]	12,571	14,246	15,922	17,598	19,273	20,949	22,624	24,300
20x2020 Reduction[h]	1,365	2,982	3,204	3,489	3,742	3,995	4,248	4,501
Reduction from Recycled Water[e]	200	500	1,000	1,275	1,775	2,275	2,775	3,275
Reduction from Water Conservation[i]	1,165	2,482	2,482	2,482	2,482	2,482	2,482	2,482
Demand w/ Conservation[j]	11,406	11,764	13,439	15,116	16,791	18,467	20,142	21,818
Existing and Planned Supplies	*16,109*	*17,393*	*18,370*	*19,535*	*20,399*	*21,355*	*22,291*	*23,219*
SCWD								
Demand w/o Conservation[c]	31,633	34,814	37,995	41,176	44,357	47,538	50,719	53,900
20x2020 Reduction[k]	3,524	7,557	8,067	8,576	9,085	9,595	10,104	10,614
Reduction from Recycled Water[e]	100	500	1,500	2,275	2,775	3,775	4,775	5,775
Reduction from Water Conservation[i]	3,424	7,057	7,057	7,057	7,057	7,057	7,057	7,057
Demand w/ Conservation[j]	28,209	27,757	30,938	34,119	37,300	40,481	43,662	46,843
Existing and Planned Supplies	*42,043*	*43,388*	*44,393*	*45,813*	*46,991*	*48,504*	*49,969*	*51,462*
VWC								
Demand w/o Conservation[c]	34,107	37,235	40,362	43,490	46,617	49,745	52,872	56,000
20x2020 Reduction[l]	3,962	8,648	9,372	10,095	10,819	11,542	12,266	12,990
Reduction from Recycled Water[e]	1,000	2,000	3,000	4,500	6,000	8,000	10,000	12,200
Reduction from Water Conservation[i]	2,962	6,648	6,648	6,648	6,648	6,648	6,648	6,648
Demand w/ Conservation[j]	31,144	30,587	33,714	36,842	39,968	43,097	46,223	49,352
Existing and Planned Supplies	*45,974*	*46,508*	*47,377*	*48,820*	*50,054*	*51,822*	*53,682*	*55,757*

Table C-3
Average/Normal Year: Demands with SBX7-7 Reductions and Comparison to Total Supplies

	2015	2020	2025	2030	2035	2040	2045	2050
REGIONAL SUMMARY								
Demand w/o Conservation[(c)]	80,070	88,484	96,898	105,312	113,726	122,140	130,554	138,968
Total 20x2020 Reduction	9,027	19,626	21,166	22,770	24,342	25,914	27,486	29,058
Total Reduction from Recycled Water[(m)]	1,300	3,050	5,550	8,100	10,600	14,100	17,600	21,300
Total Reduction from Water Conservation	7,727	16,576	16,662	16,748	16,833	16,919	17,005	17,091
Demand w/ Conservation	**72,343**	**71,908**	**80,236**	**88,564**	**96,892**	**105,220**	**113,549**	**121,877**
TOTAL EXISTING AND PLANNED SUPPLIES	**106,607**	**110,157**	**113,357**	**117,707**	**121,207**	**125,707**	**130,208**	**134,907**

Notes:

(a) Reflects existing and projected demands in CLWA service area only. CLWA's Annexation Policy requires annexing parties to provide additional fully reliable supplies. Known parties potentially seeking annexation include Legacy/Stevenson Ranch Phase 5, Tapia Canyon and Tesoro Del Valle.

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

(c) Demand w/o Conservation from Table 2-2.

(d) LACWWD 36 conservation objective estimated at 20% of projected demand commencing 2020; see Table 2-21.

(e) Recycled water projections from Table 4-3.

(f) Net Anticipated Conservation for LACWWD 36 is Anticipated Conservation Objective minus Reduction from Recycled Water.

(g) Demand w/ Conservation for LACWWD 36 is Demand w/o Conservation minus Net Anticipated Conservation.

(h) NCWD 20x2020 Reduction from Table 2-16. The 20% conservation requirement is assumed to continue through 2050 and continue to be met with a mixture of recycled water and conservation.

(i) Reduction from Water Conservation is 20x2020 Reduction minus Reduction from Recycled Water for 2015 and 2020; the quantity of water conservation remains at least at 2020 amounts through 2050.

(j) Demand w/ Conservation is Demand w/o Conservation minus Reduction from Water Conservation.

(k) SCWD 20x2020 Reduction from Table 2-18. The 20% conservation requirement is assumed to continue through 2050 and continue to be met with a mixture of recycled water and conservation.

(l) VWC 20x2020 Reduction from Table 2-20. The 20% conservation requirement is assumed to continue through 2050 and continue to be met with a mixture of recycled water and conservation.

(m) Recycled water reductions do not include demands from Honor Rancho.

Source: 2010 UWMP, Appendix C

APPENDIX 2

Table C-4
Single-Dry Year: Existing Water Supplies

	2015	2020	2025	2030	2035	2040	2045	2050
EXISTING SUPPLIES[a]								
Existing Groundwater[b]								
Alluvial Aquifer								
LACWWD 36[c]	0	0	0	0	0	0	0	0
NCWD	1,150	1,150	1,150	1,225	1,250	1,250	1,250	1,225
SCWD	8,150	8,150	8,150	8,150	8,150	8,150	8,150	8,150
VWC	11,000	10,950	10,900	11,675	11,650	11,625	11,600	11,275
Total	*20,300*	*20,250*	*20,200*	*21,050*	*21,050*	*21,025*	*21,000*	*20,650*
Saugus Formation								
LACWWD 36[c]	0	0	0	0	0	0	0	0
NCWD	4,975	4,975	4,975	4,975	4,975	4,975	4,975	4,975
SCWD	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
VWC	11,925	11,925	11,925	11,925	11,925	11,925	11,925	11,925
Total	*20,400*	*20,400*	*20,400*	*20,400*	*20,400*	*20,400*	*20,400*	*20,400*
Recycled Water[e]								
LACWWD 36[c]	0	0	0	0	0	0	0	0
NCWD	0	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0	0
VWC	325	325	325	325	325	325	325	325
Total	*325*	*325*	*325*	*325*	*325*	*325*	*325*	*325*
Imported Water								
SWP Table A and Carryover[f]								
LACWWD 36[c]	405	436	440	444	468	499	522	543
NCWD	1,722	1,734	1,657	1,630	1,670	1,731	1,786	1,826
SCWD	6,171	5,892	5,208	4,736	4,720	4,710	4,701	4,696
VWC	3,602	2,938	2,694	2,290	2,242	2,161	2,091	2,036
Total	*11,900*	*11,000*	*9,999*	*9,100*	*9,100*	*9,101*	*9,100*	*9,101*
SWP Flexible Storage Accounts[g]								
LACWWD 36[c]	206	185	206	228	241	257	268	279
NCWD	877	738	776	838	859	890	918	939
SCWD	3,143	2,507	2,438	2,436	2,427	2,422	2,418	2,415
VWC	1,834	1,250	1,261	1,177	1,153	1,111	1,075	1,047
Total	*6,060*	*4,680*	*4,681*	*4,679*	*4,680*	*4,680*	*4,679*	*4,680*
Buena Vista-Rosedale								
LACWWD 36[c]	400	450	500	550	575	625	650	675
NCWD	1,650	1,800	1,900	2,025	2,075	2,150	2,225	2,250
SCWD	5,925	6,150	5,950	5,925	5,875	5,850	5,825	5,825

Table C-4
Single-Dry Year: Existing Water Supplies

		2015	2020	2025	2030	2035	2040	2045	2050
VWC		3,025	2,600	2,650	2,500	2,475	2,375	2,300	2,250
	Total	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*
Nickel Water - Newhall Land									
VWC	*Total*	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607
Banking Programs									
Rosedale Rio-Bravo[h]									
LACWWD 36[c]		775	900	1,000	1,075	1,125	1,200	1,250	1,275
NCWD		3,275	3,625	3,725	4,000	4,050	4,150	4,250	4,325
SCWD		11,750	12,275	11,725	11,575	11,400	11,300	11,200	11,125
VWC		4,200	3,200	3,550	3,350	3,425	3,350	3,300	3,275
	Total	*20,000*	*20,000*	*20,000*	*20,000*	*20,000*	*20,000*	*20,000*	*20,000*
Semitropic[i]									
LACWWD 36[c]		510	594	0	0	0	0	0	0
NCWD		2,170	2,364	0	0	0	0	0	0
SCWD		7,778	8,035	0	0	0	0	0	0
VWC		4,541	4,007	0	0	0	0	0	0
	Total	*15,000*	*15,000*	*0*	*0*	*0*	*0*	*0*	*0*
Semitropic – Newhall Land[i]									
VWC									
	Total	4,950	4,950	4,950	4,950	4,950	4,950	4,950	4,950
TOTAL EXISTING SUPPLIES									
LACWWD 36[c]		2,296	2,565	2,146	2,297	2,409	2,581	2,690	2,772
NCWD		15,819	16,386	14,183	14,693	14,879	15,146	15,404	15,540
SCWD		46,417	46,509	36,971	36,322	36,072	35,932	35,794	35,711
VWC		47,009	43,752	39,862	39,799	39,752	39,429	39,173	38,690
	Total	**111,542**	**109,212**	**93,162**	**93,111**	**93,112**	**93,088**	**93,061**	**92,713**

Notes:

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

(b) Existing groundwater supplies represent the quantity of groundwater anticipated to be pumped with existing wells. As indicated in Tables 3-8 and 3-9 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 above. Existing pumping is consistent with Table 3-8 of the 2009 Groundwater Basin Yield Analysis for 1977 single-dry year. As indicated in Table 3-11, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 3-5.

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

(d) SCWD's existing Saugus 1 and Saugus 2 wells resumed production in 2011 with the completion of the perchlorate treatment facility.

(e) Per CLWA Draft Recycled Water Master Plan and Newhall Ranch Specific Plan.

(f) SWP supplies are based on the Department of Water Resources "2009 State Water Project Delivery Reliability Report."

(g) Includes both CLWA and Ventura County entities flexible storage accounts. Initial term of agreement with Ventura County entities expires after 2015.

(h) CLWA has a maximum withdrawal capacity of 20,000 AFY and a storage capacity of 100,000 AF. As of 6/1/2011, there is 100,000 AF of recoverable water.

(i) CLWA has 45,920 AF of recoverable water as of 6/1/2011.

(j) Newhall Land has a maximum withdrawal capacity of 4,950 AFY and a storage capacity of 55,000 AF. As of 6/1/2011 there is 18,892 AF of recoverable water. Delivery of stored water from the Newhall Land's Semitropic Water Banking and Exchange Program is assumed available to VWC.

Source: 2010 UWMP, Appendix C

Table C-5
Single-Dry Year: Planned and Total Water Supplies

	2015	2020	2025	2030	2035	2040	2045	2050
PLANNED SUPPLIES[a]								
Future Groundwater[b]								
Alluvial Aquifer								
LACWWD 36[c]	0	0	0	0	0	0	0	0
NCWD	0	0	0	0	0	0	0	0
SCWD	200	250	300	850	850	875	900	750
VWC[d]	0	1,000	2,000	3,000	4,000	5,000	6,000	7,000
Total	*200*	*1,250*	*2,300*	*3,850*	*4,850*	*5,875*	*6,900*	*7,750*
Saugus Formation								
LACWWD 36[c][e]	500	825	875	925	975	1,000	1,050	1,075
NCWD	1,400	2,950	3,025	3,150	3,200	3,275	3,325	3,400
SCWD	975	5,175	5,200	5,150	5,250	5,325	5,400	5,475
VWC (Restored Well)	825	3,777	3,777	3,777	3,777	3,777	3,777	3,750
VWC (New Wells)	-	973	823	698	498	323	148	-
Total	*3,700*	*13,700*	*13,700*	*13,700*	*13,700*	*13,700*	*13,700*	*13,700*
Recycled Water[f]								
LACWWD 36[c]	0	50	50	50	50	50	50	50
NCWD	200	500	1,000	1,275	1,775	2,275	2,775	3,275
SCWD	100	500	1,500	2,275	2,775	3,775	4,775	5,775
VWC	675	1,675	2,675	4,175	5,675	7,675	9,675	11,875
Total	*975*	*2,725*	*5,225*	*7,775*	*10,275*	*13,775*	*17,275*	*20,975*
Banking Programs[g]								
LACWWD 36[c]	0	0	440	488	1,028	1,097	1,147	1,193
NCWD	0	0	1,657	1,791	3,670	3,804	3,925	4,012
SCWD	0	0	5,208	5,205	10,374	10,351	10,332	10,321
VWC	0	0	2,694	2,516	4,928	4,749	4,596	4,474
Total	*0*	*0*	*10,000*	*10,000*	*20,000*	*20,000*	*20,000*	*20,000*
TOTAL PLANNED SUPPLIES								
LACWWD 36[c]	500	875	1,365	1,463	2,053	2,147	2,247	2,318
NCWD	1,600	3,450	5,682	6,216	8,645	9,354	10,025	10,687
SCWD	1,275	5,925	12,208	13,480	19,249	20,326	21,407	22,321
VWC	1,500	7,425	11,969	14,166	18,878	21,524	24,196	27,099
Total	**4,875**	**17,675**	**31,225**	**35,325**	**48,825**	**53,350**	**57,875**	**62,425**

Table C-5
Single-Dry Year: Planned and Total Water Supplies

	2015	2020	2025	2030	2035	2040	2045	2050
PURVEYOR EXISTING AND PLANNED SUPPLIES								
LACWWD 36[(c)]	2,796	3,440	3,511	3,760	4,462	4,728	4,937	5,090
NCWD	17,419	19,836	19,865	20,909	23,524	24,500	25,429	26,227
SCWD	47,692	52,434	49,179	49,802	55,321	56,258	57,201	58,032
VWC	48,509	51,177	51,831	53,965	58,630	60,953	63,369	65,789
Total	**116,417**	**126,887**	**124,387**	**128,436**	**141,937**	**146,438**	**150,936**	**155,138**

Notes:

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

(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 3,777 AFY of restored capacity from VWC Well 201 and approximately 10,000 AFY of new Saugus Formation well capacity. 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 Table 3-11, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 3- 5.

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

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

(e) Includes 500 AFY from a newly completed well in 2011.

(f) Per CLWA Draft Recycled Water Master Plan and Newhall Ranch Specific Plan.

(g) Includes 10,000 AF of additional banking programs by 2025 and an additional 10,000 AF by 2035.

Source: 2010 UWMP, Appendix C

Table C-6
Single-Dry Year: Demands with SBX7-7 Reductions and Comparison to Total Supplies

	2015	2020	2025	2030	2035	2040	2045	2050
WATER DEMANDS W/ AND W/O CONSERVATION[a]								
LACWWD 36[b]								
Demand w/o Conservation[c]	1,935	2,408	2,881	3,353	3,826	4,299	4,772	5,245
Anticipated Conservation Objective[d]	176	438	524	610	696	782	868	954
Reduction from Recycled Water[e]	0	50	50	50	50	50	50	50
Net Anticipated Water Conservation[f]	176	388	474	560	646	732	818	904
Demand w/ Conservation[g]	1,759	2,020	2,407	2,794	3,181	3,568	3,955	4,342
Existing and Planned Supplies	*2,796*	*3,440*	*3,511*	*3,760*	*4,462*	*4,728*	*4,937*	*5,090*
SBX7-7 Compliance Calculations								
NCWD								
Demand w/o Conservation[c]	13,828	15,671	17,514	19,358	21,200	23,044	24,886	26,730
20x2020 Reduction[h]	1,365	2,982	3,204	3,489	3,742	3,995	4,248	4,501
Reduction from Recycled Water[e]	200	500	1,000	1,275	1,775	2,275	2,775	3,275
Reduction from Water Conservation[i]	1,165	2,482	2,482	2,482	2,482	2,482	2,482	2,482
Demand w/ Conservation[j]	12,663	13,188	15,031	16,876	18,718	20,562	22,404	24,248
Existing and Planned Supplies	*17,419*	*19,836*	*19,865*	*20,909*	*23,524*	*24,500*	*25,429*	*26,227*
SCWD								
Demand w/o Conservation[c]	34,796	38,295	41,795	45,294	48,793	52,292	55,791	59,290
20x2020 Reduction[k]	3,524	7,557	8,067	8,576	9,085	9,595	10,104	10,614
Reduction from Recycled Water[e]	100	500	1,500	2,275	2,775	3,775	4,775	5,775
Reduction from Water Conservation[i]	3,424	7,057	7,057	7,057	7,057	7,057	7,057	7,057
Demand w/ Conservation[j]	31,372	31,238	34,737	38,236	41,736	45,235	48,734	52,233
Existing and Planned Supplies	*47,692*	*52,434*	*49,179*	*49,802*	*55,321*	*56,258*	*57,201*	*58,032*
VWC								
Demand w/o Conservation[c]	37,517	40,959	44,398	47,839	51,278	54,720	58,159	61,600
20x2020 Reduction[l]	3,962	8,648	9,372	10,095	10,819	11,542	12,266	12,990
Reduction from Recycled Water[e]	1,000	2,000	3,000	4,500	6,000	8,000	10,000	12,200
Reduction from Water Conservation[i]	2,962	6,648	6,648	6,648	6,648	6,648	6,648	6,648
Demand w/ Conservation[j]	**34,555**	**34,310**	**37,750**	**41,191**	**44,630**	**48,072**	**51,511**	**54,951**
Existing and Planned Supplies	*48,509*	*51,177*	*51,831*	*53,965*	*58,630*	*60,953*	*63,369*	*65,789*
REGIONAL SUMMARY								
Demand w/o Conservation[c]	88,077	97,333	106,588	115,843	125,099	134,354	143,609	152,865
Total 20x2020 Reduction	9,027	19,626	21,166	22,770	24,342	25,914	27,486	29,058
Total Reduction from Recycled Water[m]	1,300	3,050	5,550	8,100	10,600	14,100	17,600	21,300
Total Reduction from Water Conservation	7,727	16,576	16,662	16,748	16,833	16,919	17,005	17,091
Demand w/ Conservation	**80,350**	**80,757**	**89,926**	**99,096**	**108,265**	**117,434**	**126,604**	**135,773**
TOTAL EXISTING AND PLANNED SUPPLIES	**116,417**	**126,887**	**124,387**	**128,436**	**141,937**	**146,438**	**150,936**	**155,138**

Table C-6
Single-Dry Year: Demands with SBX7-7 Reductions and Comparison to Total Supplies

	2015	2020	2025	2030	2035	2040	2045	2050

Notes:

(a) Reflects existing and projected demands in CLWA service area only. CLWA's Annexation Policy requires annexing parties to provide additional fully reliable supplies. Known parties potentially seeking annexation include Legacy/Stevenson Ranch Phase 5, Tapia Canyon and Tesoro Del Valle.
(b) LACWWD 36 included for purposes of providing regional completeness; however, it is not required to prepare an UWMP.
(c) Demand w/o Conservation from Table 2-2. Includes a 10% increase in demand during dry years.
(d) LACWWD 36 conservation objective estimated at 20% of projected demand commencing 2020; see Table 2-21.
(e) Recycled water projections from Table 4-3.
(f) Net Anticipated Conservation for LACWWD 36 is Anticipated Conservation Objective minus Reduction from Recycled Water.
(g) Demand w/ Conservation for LACWWD 36 is Demand w/o Conservation minus Net Anticipated Conservation.
(h) NCWD 20x2020 Reduction from Table 2-16. The 20% conservation requirement is assumed to continue through 2050 and continue to be met with a mixture of recycled water and conservation.
(i) Reduction from Water Conservation is 20x2020 Reduction minus Reduction from Recycled Water for 2015 and 2020; the quantity of water conservation remains at least at 2020 amounts through 2050.
(j) Demand w/ Conservation is Demand w/o Conservation minus Reduction from Water Conservation.
(k) SCWD 20x2020 Reduction from Table 2-18. The 20% conservation requirement is assumed to continue through 2050 and continue to be met with a mixture of recycled water and conservation.
(l) VWC 20x2020 Reduction from Table 2-20. The 20% conservation requirement is assumed to continue through 2050 and continue to be met with a mixture of recycled water and conservation.
(m) Recycled water reductions do not include demands from Honor Rancho.

Source: 2010 UWMP, Appendix C

APPENDIX 3

Table C-7
Existing Multiple-Dry Year: Existing Water Supplies

	2015	2020	2025	2030	2035	2040	2045	2050
EXISTING SUPPLIES[a]								
Existing Groundwater[b]								
Alluvial Aquifer								
LACWWD 36[c]	0	0	0	0	0	0	0	0
NCWD	1,125	1,125	1,125	1,200	1,200	1,200	1,200	1,175
SCWD	7,650	7,675	7,700	8,175	8,175	8,175	8,175	8,025
VWC	11,650	11,625	11,600	12,450	12,450	12,450	12,450	12,125
Total	*20,425*	*20,425*	*20,425*	*21,825*	*21,825*	*21,825*	*21,825*	*21,325*
Saugus Formation								
LACWWD 36[c]								
NCWD	4,975	4,975	4,975	4,975	4,975	4,975	4,975	4,975
SCWD[d]	3,550	3,550	3,550	3,550	3,550	3,550	3,550	3,550
VWC	11,175	11,175	11,175	11,175	11,175	11,175	11,175	11,175
Total	*19,700*	*19,700*	*19,700*	*19,700*	*19,700*	*19,700*	*19,700*	*19,700*
Recycled Water[e]								
LACWWD 36[c]	0	0	0	0	0	0	0	0
NCWD	0	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0	0
VWC	325	325	325	325	325	325	325	325
Total	*325*	*325*	*325*	*325*	*325*	*325*	*325*	*325*
Imported Water								
SWP Table A and Carryover[f]								
LACWWD 36[c]	1,117	1,278	1,423	1,592	1,691	1,801	1,895	1,968
NCWD	4,915	4,149	4,543	5,058	5,310	5,592	5,834	6,029
SCWD	18,006	16,666	16,406	16,492	16,519	16,542	16,574	16,601
VWC	8,862	10,807	10,628	9,858	9,479	9,065	8,697	8,401
Total	*32,900*	*32,900*	*33,000*	*33,000*	*33,000*	*33,000*	*33,000*	*33,000*
SWP Flexible Storage Accounts[g]								
LACWWD 36[c]	51	45	50	56	60	64	67	70
NCWD	226	148	161	179	188	198	207	214
SCWD	826	593	582	585	586	586	588	589
VWC	407	384	377	350	336	321	308	298
Total	*1,510*	*1,170*	*1,170*	*1,170*	*1,170*	*1,170*	*1,170*	*1,170*

Table C-7
Existing Multiple-Dry Year: Existing Water Supplies

	2015	2020	2025	2030	2035	2040	2045	2050
Buena Vista-Rosedale								
LACWWD 36[c]	400	450	500	550	575	625	650	675
NCWD	1,700	1,450	1,575	1,750	1,825	1,925	2,000	2,050
SCWD	6,250	5,800	5,650	5,675	5,675	5,650	5,650	5,650
VWC	2,650	3,300	3,275	3,025	2,925	2,800	2,700	2,625
Total	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*	*11,000*
Nickel Water - Newhall Land								
VWC *Total*	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607
Banking Programs								
Rosedale Rio-Bravo[h]								
LACWWD 36[c]	577	662	723	801	842	890	931	961
NCWD	2,540	2,150	2,308	2,545	2,643	2,763	2,865	2,944
SCWD	9,306	8,636	8,336	8,297	8,222	8,174	8,139	8,107
VWC	2,577	3,552	3,633	3,357	3,292	3,173	3,065	2,988
Total	*15,000*	*15,000*	*15,000*	*15,000*	*15,000*	*15,000*	*15,000*	*15,000*
Semitropic[i]								
LACWWD 36[c]	390	447	0	0	0	0	0	0
NCWD	1,718	1,450	0	0	0	0	0	0
SCWD	6,294	5,826	0	0	0	0	0	0
VWC	3,098	3,777	0	0	0	0	0	0
Total	*11,500*	*11,500*	*0*	*0*	*0*	*0*	*0*	*0*
Semitropic – Newhall Land[j]								
VWC	4,950	4,950	4,950	4,950	4,950	4,950	4,950	4,950
TOTAL EXISTING SUPPLIES								
LACWWD 36[c]	2,536	2,882	2,696	3,000	3,168	3,380	3,543	3,674
NCWD	17,200	15,447	14,687	15,707	16,142	16,654	17,080	17,387
SCWD	51,882	48,745	42,224	42,774	42,727	42,678	42,676	42,522
VWC	47,300	51,502	47,570	47,096	46,540	45,866	45,278	44,494
Total	**118,917**	**118,577**	**107,177**	**108,577**	**108,577**	**108,577**	**108,577**	**108,077**

Notes:

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

(b) Existing groundwater supplies represent the quantity of groundwater anticipated to be pumped with existing wells. As indicated in Tables 3-8 and 3-9 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 above. Existing pumping is consistent with Table 3-8 of the 2009 Groundwater Basin Yield Analysis for 1931-1934 multiple dry-year levels. As indicated in Table 3-12, existing and planned

Table C-7
Existing Multiple-Dry Year: Existing Water Supplies

	2015	2020	2025	2030	2035	2040	2045	2050

groundwater pumping remain within the groundwater operating plan shown on Table 3-5.

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

(d) SCWD's existing Saugus 1 and Saugus 2 wells resumed production in 2011 with the completion of the perchlorate treatment facility.

(e) Per CLWA Draft Recycled Water Master Plan and Newhall Ranch Specific Plan.

(f) SWP supplies are based on DWR 2009 SWP Delivery Reliability Report.

(g) Includes both CLWA and Ventura County entities flexible storage accounts. Initial term of agreement with Ventura County entities expires after 2015.

(h) CLWA has a maximum withdrawal capacity of 20,000 afy and a storage capacity of 100,000 af. As of 6/1/2011, there is 100,000 af of recoverable water.

(i) CLWA has 45,920 af of recoverable water as of 6/1/2011.

(j) Newhall Land has a maximum withdrawal capacity of 4,950 afy and a storage capacity of 55,000 af. As of 6/1/2011 there is 18,892 af of recoverable water. Delivery of stored water from the Newhall Land's Semitropic Water Banking and Exchange Program is assumed available to VWC.

Source: 2010 UWMP, Appendix C

Table C-8
Multiple-Dry Year: Planned and Total Water Supplies

	2015	2020	2025	2030	2035	2040	2045	2050
PLANNED SUPPLIES[a]								
Future Groundwater[b]								
Alluvial Aquifer								
LACWWD 36[c]	0	0	0	0	0	0	0	0
NCWD	0	0	0	0	0	0	0	0
SCWD	0	0	0	0	0	0	0	0
VWC[d]	0	1,000	2,000	3,000	4,000	5,000	6,000	7,000
Total	*0*	*1,000*	*2,000*	*3,000*	*4,000*	*5,000*	*6,000*	*7,000*
Saugus Formation								
LACWWD 36[c][e]	500	750	800	825	850	875	900	925
NCWD	1,250	3,875	3,950	4,050	4,075	4,125	4,175	4,225
SCWD	500	5,700	5,700	5,675	5,750	5,825	5,875	5,925
VWC (Restored Well)	2,375	1,625	1,500	1,400	1,275	1,125	1,000	875
VWC (New Wells)	0	0	0	0	0	0	0	0
Total	*4,625*	*11,950*	*11,950*	*11,950*	*11,950*	*11,950*	*11,950*	*11,950*
Recycled Water[f]								
LACWWD 36[c]	0	50	50	50	50	50	50	50
NCWD	200	500	1,000	1,275	1,775	2,275	2,775	3,275
SCWD	100	500	1,500	2,275	2,775	3,775	4,775	5,775
VWC	675	1,675	2,675	4,175	5,675	7,675	9,675	11,875
Total	*975*	*2,725*	*5,225*	*7,775*	*10,275*	*13,775*	*17,275*	*20,975*
Banking Programs[g]								
LACWWD 36[c]	0	0	323	362	769	819	861	895
NCWD	0	0	1,032	1,150	2,414	2,542	2,652	2,741
SCWD	0	0	3,729	3,748	7,509	7,519	7,534	7,546
VWC	0	0	2,416	2,240	4,309	4,120	3,953	3,819
Total	*0*	*0*	*7,500*	*7,500*	*15,000*	*15,000*	*15,000*	*15,000*
TOTAL PLANNED SUPPLIES								
LACWWD 36[c]	500	800	1,173	1,237	1,669	1,744	1,811	1,870
NCWD	1,450	4,375	5,982	6,475	8,264	8,942	9,602	10,241
SCWD	600	6,200	10,929	11,698	16,034	17,119	18,184	19,246

Table C-8
Multiple-Dry Year: Planned and Total Water Supplies

	2015	2020	2025	2030	2035	2040	2045	2050
VWC	3,050	4,300	8,591	10,815	15,259	17,920	20,628	23,569
Total	**5,600**	**15,675**	**26,675**	**30,225**	**41,225**	**45,725**	**50,225**	**54,925**
PURVEYOR EXISTING AND PLANNED SUPPLIES								
LACWWD 36[(c)]	3,036	3,682	3,869	4,237	4,837	5,124	5,354	5,544
NCWD	18,650	19,822	20,670	22,182	24,406	25,596	26,682	27,628
SCWD	52,482	54,945	53,152	54,472	58,761	59,797	60,860	61,768
VWC	50,350	55,802	56,161	57,912	61,799	63,786	65,906	68,063
Total	**124,517**	**134,252**	**133,852**	**138,802**	**149,802**	**154,302**	**158,802**	**163,002**

Notes:

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

(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 3,777 afy of restored capacity from VWC Well 201 and approximately 10,000 afy of new Saugus Formation well capacity. 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 Table 3-12, existing and planned groundwater pumping remain within the groundwater operating plan shown on Table 3- 5.

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

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

(e) Includes 500 afy from a newly completed well in 2011.

(f) Per CLWA Draft Recycled Water Master Plan and Newhall Ranch Specific Plan.

(g) Includes 10,000 af of additional banking programs by 2025 and an additional 10,000 af by 2035.

Source: 2010 UWMP, Appendix C

Table C-9
Multiple-Dry Year: Demands with SBX7-7 Reductions and Comparison to Total Supplies

	2015	2020	2025	2030	2035	2040	2045	2050
WATER DEMANDS W/ AND W/O CONSERVATION[a]								
LACWWD 36[c]								
Demand w/o Conservation[c]	1,935	2,408	2,881	3,353	3,826	4,299	4,772	5,245
Anticipated Conservation Objective[d]	176	438	524	610	696	782	868	954
Reduction from Recycled Water[e]	0	50	50	50	50	50	50	50
Net Anticipated Water Conservation[f]	176	388	474	560	646	732	818	904
Demand w/ Conservation[g]	1,759	2,020	2,407	2,794	3,181	3,568	3,955	4,342
Existing and Planned Supplies	*3,036*	*3,682*	*3,869*	*4,237*	*4,837*	*5,124*	*5,354*	*5,544*
SBX7-7 Compliance Calculations								
NCWD								
Demand w/o Conservation[c]	13,828	15,671	17,514	19,358	21,200	23,044	24,886	26,730
20x2020 Reduction[h]	1,365	2,982	3,204	3,489	3,742	3,995	4,248	4,501
Reduction from Recycled Water[e]	200	500	1,000	1,275	1,775	2,275	2,775	3,275
Reduction from Water Conservation[i]	1,165	2,482	2,482	2,482	2,482	2,482	2,482	2,482
Demand w/ Conservation[j]	12,663	13,188	15,031	16,876	18,718	20,562	22,404	24,248
Existing and Planned Supplies	*18,650*	*19,822*	*20,670*	*22,182*	*24,406*	*25,596*	*26,682*	*27,628*
SCWD								
Demand w/o Conservation[c]	34,796	38,295	41,795	45,294	48,793	52,292	55,791	59,290
20x2020 Reduction[k]	3,524	7,557	8,067	8,576	9,085	9,595	10,104	10,614
Reduction from Recycled Water[e]	100	500	1,500	2,275	2,775	3,775	4,775	5,775
Reduction from Water Conservation[i]	3,424	7,057	7,057	7,057	7,057	7,057	7,057	7,057
Demand w/ Conservation[j]	31,372	31,238	34,737	38,236	41,736	45,235	48,734	52,233
Existing and Planned Supplies	*52,482*	*54,945*	*53,152*	*54,472*	*58,761*	*59,797*	*60,860*	*61,768*
VWC								
Demand w/o Conservation[c]	37,517	40,959	44,398	47,839	51,278	54,720	58,159	61,600
20x2020 Reduction[l]	3,962	8,648	9,372	10,095	10,819	11,542	12,266	12,990
Reduction from Recycled Water[e]	1,000	2,000	3,000	4,500	6,000	8,000	10,000	12,200
Reduction from Water Conservation[i]	2,962	6,648	6,648	6,648	6,648	6,648	6,648	6,648
Demand w/ Conservation[j]	**34,555**	**34,310**	**37,750**	**41,191**	**44,630**	**48,072**	**51,511**	**54,951**
Existing and Planned Supplies	*50,350*	*55,802*	*56,161*	*57,912*	*61,799*	*63,786*	*65,906*	*68,063*

Table C-9
Multiple-Dry Year: Demands with SBX7-7 Reductions and Comparison to Total Supplies

	2015	2020	2025	2030	2035	2040	2045	2050
REGIONAL SUMMARY								
Demand w/o Conservation[(c)]	88,077	97,333	106,588	115,843	125,099	134,354	143,609	152,865
Total 20x2020 Reduction	9,027	19,626	21,166	22,770	24,342	25,914	27,486	29,058
Total Reduction from Recycled Water[(m)]	1,300	3,050	5,550	8,100	10,600	14,100	17,600	21,300
Total Reduction from Water Conservation	7,727	16,576	16,662	16,748	16,833	16,919	17,005	17,091
Demand w/ Conservation	**80,350**	**80,757**	**89,926**	**99,096**	**108,265**	**117,434**	**126,604**	**135,773**
TOTAL EXISTING AND PLANNED SUPPLIES	**124,517**	**134,252**	**133,852**	**138,802**	**149,802**	**154,302**	**158,802**	**163,002**

Notes:

(a) Reflects existing and projected demands in CLWA service area only. CLWA's Annexation Policy requires annexing parties to provide additional fully reliable supplies. Known parties potentially seeking annexation include Legacy/Stevenson Ranch Phase 5, Tapia Canyon and Tesoro Del Valle.

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

(c) Demand w/o Conservation from Table 2-2. Includes a 10% increase in demand during dry years.

(d) LACWWD 36 conservation objective estimated at 20% of projected demand commencing 2020; see Table 2-21.

(e) Recycled water projections from Table 4-3.

(f) Net Anticipated Conservation for LACWWD 36 is Anticipated Conservation Objective minus Reduction from Recycled Water.

(g) Demand w/ Conservation for LACWWD 36 is Demand w/o Conservation minus Net Anticipated Conservation.

(h) NCWD 20x2020 Reduction from Table 2-16. The 20% conservation requirement is assumed to continue through 2050 and continue to be met with a mixture of recycled water and conservation.

(i) Reduction from Water Conservation is 20x2020 Reduction minus Reduction from Recycled Water for 2015 and 2020; the quantity of water conservation remains at least at 2020 amounts through 2050.

(j) Demand w/ Conservation is Demand w/o Conservation minus Reduction from Water Conservation.

(k) SCWD 20x2020 Reduction from Table 2-18. The 20% conservation requirement is assumed to continue through 2050 and continue to be met with a mixture of recycled water and conservation.

(l) VWC 20x2020 Reduction from Table 2-20. The 20% conservation requirement is assumed to continue through 2050 and continue to be met with a mixture of recycled water and conservation.

(m) Recycled water reductions do not include demands from Honor Rancho.

Source: 2010 UWMP, Appendix C