TABLE OF CONTENTS
SECTION 4.3 - WATER RESOURCES

Page

LIST OF SECTIONS

LIST OF FIGURES

LIST OF TABLES

LIST OF TABLES (continued)

LIST OF APPENDICES

Black & Veatch, et al., "2005 Urban Water Management Plan" (October 2005).

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CH2MHill, "Analysis of Perchlorate Containment in Groundwater Near the Whittaker-Bermite Property, Santa Clarita, California" (December 2004).

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4.3.1 INTRODUCTION

This section identifies and analyzes the existing conditions, potential impacts, and mitigation measures associated with supplying water to implement the proposed Project, which is comprised of the RMDP and the SCP, and the alternatives. The RMDP component is a conservation, mitigation, and permitting strategy for sensitive biological and other natural resources that will be relied upon in implementing various infrastructure improvements required by the approved Newhall Ranch Specific Plan, consistent with the federal and state permits and agreements requested from the Corps and CDFG. The SCP component is also a conservation, mitigation, and permitting strategy for the spineflower that encompasses the Specific Plan area, the VCC planning area, and a portion of the Entrada planning area.

The approval of the proposed Project (RMDP and SCP) would facilitate development in the Specific Plan, the remainder of the VCC planning area, and a portion of the Entrada planning area. As to the approved development in the Specific Plan area, the applicant will primarily use local groundwater, which has been historically used on-site for agricultural operations, for urban/municipal potable uses, and recycled water from local water reclamation plants to meet the Specific Plan's non-potable water uses (*e.g.*, irrigation). At build-out of the Specific Plan, a small percentage of the Specific Plan's water supply would come from water under contract with the Nickel Family, LLC in Kern County (Nickel water). The Nickel water is reliable on a year-to-year basis, and not subject to the annual fluctuations that can occur with other imported supplies in dry-year conditions. Because these two local water sources (groundwater and recycled water), plus the Nickel water, meet the water needs of the Specific Plan, no potable water is needed for the Specific Plan from the existing or planned imported State Water project (SWP) supplies of Castaic Lake Water Agency (CLWA).

As to the approved development in the VCC planning area, and the proposed development in a portion of the Entrada area, the applicant (The Newhall Land and Farming Company) would rely on water supplies through a combination of SWP water delivered through CLWA and groundwater resources from the local groundwater basin to meet the potable water demands of both VCC and Entrada; and, for non-potable supplies, the applicant would rely on recycled water from local WRPs. For that reason, this EIS/EIR discusses the availability and reliability of CLWA's SWP supplies.

Based on the information presented in this section of the EIS/EIR, adequate water supplies are available to meet the potable and non-potable water demands of the proposed Project without resulting in environmental impacts to the Santa Clara River, the local groundwater basins, or downstream users in Ventura County.

4.3.1.1 Relationship of Proposed Project to Newhall Ranch Specific Plan Program EIR

This section (**Section 4.3**) provides a stand-alone assessment of the potentially significant water resource impacts associated with the proposed Project; however, the previously certified Newhall Ranch environmental documentation provides important information and analysis for the RMDP and SCP components of the proposed Project. The Project components would require federal and state permitting, consultation, and agreements that are needed to facilitate development of the approved land uses within the Specific Plan site and that would establish spineflower preserves within the Project area, also facilitating development in the Specific Plan, VCC, and a portion of the Entrada planning area. Due to

this relationship, the Newhall Ranch environmental documentation, findings, and mitigation, as they relate to water resources, are summarized below to provide context for the proposed Project and alternatives.

Section 4.11 of the Newhall Ranch Revised Draft EIR (March 1999) and Section 2.5 of the Newhall Ranch Revised Additional Analysis (May 2003) identified and analyzed the existing water resources, potential impacts, and mitigation measures for the entire Specific Plan area. In addition, Section 5.0 of the Newhall Ranch Revised Draft EIR (March 1999) identified and analyzed the potential water resources impacts and mitigation measures associated with construction and operation of the approved WRP, which would treat the wastewater generated by the Specific Plan.

The Newhall Ranch Specific Plan Program EIR concluded that an adequate supply of water is available to meet the demands of the Specific Plan without creating significant environmental effects. In order to ensure that water resource impacts would be less-than-significant, the Newhall Ranch Program EIR recommended implementation of Mitigation Measures SP-4.11-1 to SP-4.11-22.[1] In addition, to lessen the water resource impacts resulting from construction and operation of the approved WRP, the Newhall Ranch Specific Plan Program EIR recommended implementation of Mitigation Measures SP-5.0-50 through SP-5.0-51. The Los Angeles County Board of Supervisors found that adoption of the recommended mitigation measures would reduce the identified potentially significant water impacts to less-than-significant levels. The Newhall Ranch mitigation program was adopted by Los Angeles County in findings and in the revised Mitigation Monitoring Plans for the Specific Plan and WRP.

Table 4.3-1 summarizes the Specific Plan's and the WRP's water resource impacts, the applicable mitigation measures, and the significance findings after the mitigation is implemented.

Table 4.3-1
Impacts to Water Resources Caused By Implementation of the Specific Plan and WRP

Impact Description	Mitigation Measures	Finding After Mitigation
Specific Plan Water Resource Impacts - Adequate water supplies are available for build-out of the Specific Plan. Further, the Saugus Groundwater Banking/ASR program is feasible. In addition, the Specific Plan can be provided with water supplies without creating significant water-related impacts on site, in the Santa Clarita Valley, and downstream in Ventura County. As a result of the above information, and the mitigation measures adopted (see next column), the magnitude of all water impacts is less than significant.	• SP-4.11-1 (requires a water reclamation system and distribution system for non-potable reclaimed water) • SP-4.11-2 (requires drought-tolerant and native plants) • SP-4.11-3 (requires manufactured slopes to be landscaped with materials that require minimal irrigation) • SP-4.11-4 (requires water conservation measures)	Not significant

[1] Reference to mitigation measures included in the Newhall Ranch Specific Plan Program EIR are preceded by "SP" in this EIS/EIR to distinguish them from other mitigation measures discussed herein.

Table 4.3-1
Impacts to Water Resources Caused By Implementation of the Specific Plan and WRP

Impact Description	Mitigation Measures	Finding After Mitigation
	• SP-4.11-5 (requires annexation to the Valencia Water Company prior to issuance of building permits) • SP-4.11-6 (requires confirmation of adequate water supply when submitting tentative tract map applications) • SP-4.11-7 (requires review of recycled water uses) • SP-4.11-8 (requires the applicants of future subdivisions to finance expansion costs of extending water service) • SP-4.11-9 (requires the County to recommend preparation of annual reports by water purveyors) • SP-4.11-10 (requires the County to recommend that the UWMP be updated every five years) • SP-4.11-11 (requires ASR wells to be spaced so that adjacent non-project wells will not lose pumping capacity) • SP-4.11-12 (requires the number of ASR wells to be sufficient to meet ultimate target and withdraw volumes) • SP-4.11-13 (requires placement of ASR wells in two particular areas) • SP-4.11-14 (requires the ASR program to meet particular water quality requirements) • SP-4.11-15 (requires groundwater pumping from the Alluvial aquifer to be monitored) • SP-4.11-16 (requires agricultural groundwater to meet drinking water quality standards) • SP-4.11-17 (requires preparation of an EIR for project-specific subdivision maps) • SP-4.11-18 (requires preparation of annual report on Semitropic Groundwater Banking Project)	

Table 4.3-1
Impacts to Water Resources Caused By Implementation of the Specific Plan and WRP

Impact Description	Mitigation Measures	Finding After Mitigation
	• SP-4.11-19 (requires compliance and good faith efforts as part of MOU and Water Resource Monitoring Program) • SP-4.11-20 (requires the Castaic Lake Water Agency to be consulted when deciding to extend or terminate the Nickel Water agreement) • SP-4.11-21 (requires Newhall Land to select sampling locations for surface water and groundwater quality testing) and • SP-4.11-22 (requires identification of irrigated farmland proposed to be retired in order to serve subdivisions)	
Specific Plan Cumulative Water Resources Impacts - Because Newhall Land secured water supplies that more than meet the water demands of the Specific Plan, implementation of the Specific Plan would not contribute to a decline in regional water supplies; and, therefore, implementation of the Specific Plan would not result in a significant cumulative water availability impact. In addition, cumulative water supplies exceed cumulative water demand; and, therefore, cumulative development would not result in significant unavoidable cumulative impacts on Santa Clarita Valley water resources. Accordingly, cumulative mitigation measures are not required. However, please note that the County's General Plan Development Monitoring System requires tentative map applications to demonstrate that water supplies are adequate to meet demand.	• No further mitigation recommended.	Not significant
WRP Water Resources Impacts - The WRP would not have a significant impact on water availability during construction. In addition, although the WRP would require 11,606 gallons of water per day and would need to be annexed to the Valencia Water Company, the WRP would not have a significant impact on water resources because adequate water supplies exist to supply the demand of the Newhall Ranch Specific Plan and the WRP.	• SP-5.0-50 (the site of the WRP shall be annexed to the Valencia Water Company prior to the issuance of building permits) • SP-5.0-51 (prior to the construction of the WRP, the operator shall demonstrate water availability for both construction and operation demands)	Not significant

Source: Newhall Ranch Revised Draft EIR (March 1999); Newhall Ranch Revised Additional Analysis (May 2003).

4.3.1.2 Relationship of Proposed Project to VCC and Entrada Planning Areas

4.3.1.2.1 VCC Planning Area

The SCP component of the proposed Project, if approved, would facilitate development in the VCC planning area. The VCC is reliant on the SCP and associated take authorizations, and would not be developed without the take authorizations due to grading constraints. The VCC planning area is the remaining undeveloped portion of the VCC commercial/industrial complex currently under development by the applicant. The VCC was the subject of an EIR certified by Los Angeles County in April 1990 (SCH No. 1987-123005). The applicant has recently submitted to Los Angeles County the last tentative parcel map (TPM No. 18108) needed to complete build-out of the remaining undeveloped portion of the VCC planning area. The County will require preparation of an EIR in conjunction with the parcel map and related project approvals; however, the County has not yet issued a Notice of Preparation (NOP) of the EIR or released the EIR. **Table 4.3-2** summarizes the VCC's impacts on water supplies from the prior development of the VCC commercial/industrial complex, the then applicable mitigation measures, and the significance findings after mitigation from the previously certified VCC EIR (April 1990).

Table 4.3-2
Impacts to Water Resources Caused By VCC Implementation

VCC Impact Description	VCC Mitigation Measures	Finding After Mitigation
Project Impacts to Water Resources - The VCC project is located within the service area of the Valencia Water Company. Further, those portions of the project site that currently are located outside of the Valencia Water Company's service area would be annexed. Therefore, under existing conditions, the water supply is expected to be sufficient to meet the water demands of the VCC project.	• VC-WR-1 - A connection fee will be charged to all new development by CLWA, and may include a standby charge; however, this charge is not currently required. • VC-WR-2 - Building permits shall not be granted unless there is adequate water supply to serve the proposed project. • VC-WR-3 - Individual tentative maps in Phase II will not be approved unless the Department of Regional Planning's Development Monitoring System (DMS) demonstrates water will be available to meet the demand for each portion of the project. • VC-WR-4 - Landscaping will utilize drought tolerant vegetation, water sensory to prevent over-watering, and specialized irrigation systems to minimize water use. • VC-WR-5 - The proposed project shall, to the extent feasible, implement DWR's recommendations for interior and exterior water conservation and water reclamation.	Not significant

Table 4.3-2
Impacts to Water Resources Caused By VCC Implementation

VCC Impact Description	VCC Mitigation Measures	Finding After Mitigation
Cumulative Impacts to Water Resources- Under existing conditions, the water supply is sufficient to meet cumulative project water demands. In addition, individual tentative maps would not be approved unless the County's Development Monitoring System demonstrates that water would be available to meet the demand of each project. Therefore, the cumulative impact to water resources would be less than significant.	• No further mitigation recommended.	Not significant

Source: VCC EIR (April 1990).

4.3.1.2.2 Entrada Planning Area

The applicant is seeking approval from Los Angeles County for planned residential and nonresidential development within the Entrada planning area. The SCP component of the proposed Project would designate an area within Entrada as a spineflower preserve. If approved, the SCP component would include take authorization of spineflower populations in Entrada that are located outside of the designated spineflower preserve area. Thus, the planned development within portions of the Entrada planning area is reliant on the SCP and associated take authorizations, and those portions would not be developed without the take authorizations. The applicant has submitted to Los Angeles County Entrada development applications, which cover the portion of the Entrada planning area facilitated by the SCP component of the proposed Project. However, as of this writing, the County has not yet issued a NOP of an EIR or released an EIR for Entrada. As a result, there is no underlying local environmental documentation for the Entrada planning area at this time.

4.3.2 METHODOLOGY

The list below identifies documents that were used or relied upon in the preparation of this section. The documents identified below either are referenced appendices, or are incorporated by reference and available for public inspection and review at the County of Los Angeles Public Library, Valencia Branch, 23743 West Valencia Boulevard, Santa Clarita, California 91355-2191. The documents below (and other documents referred to throughout this section) were used in formulating an independent determination of the sufficiency of the identified water supplies to meet the proposed demands of the proposed Project and other related cumulative development.

- *2005 Urban Water Management Plan*, prepared for Castaic Lake Water Agency, CLWA Santa Clarita Water Division, Newhall County Water District, Valencia Water Company, Los Angeles County Waterworks District No. 36, prepared by Black & Veatch, Nancy Clemm, Kennedy Jenks Consultants, Jeff Lambert, Luhdorff & Scalmanini, Richard Slade and Associates, November 2005 (2005 UWMP). (See **Appendix 4.3** for a copy of the 2005 UWMP.)

- *Analysis of Groundwater Basin Yield, Upper Santa Clara River Groundwater Basin, East Subbasin, Los Angeles County, California*, prepared by CH2M HILL, in cooperation with Luhdorff & Scalmanini, in support of the August 2001 Memorandum of Understanding between the Upper Basin Water Purveyors and the United Water Conservation District August 2005 (Basin Yield Study). (See **Appendix 4.3** for a copy of the Basin Yield Study.)

- *Santa Clarita Valley Water Report 2006*, prepared for CLWA, Los Angeles County Waterworks District No. 36, Santa Clarita Water Division, Newhall County Water District and Valencia Water Company by Luhdorff and Scalmanini, Consulting Engineers, May 2007 (SCVWR, 2007).

- *Santa Clarita Valley Water Report 2007*, prepared for CLWA, Los Angeles County Waterworks District No. 36, Santa Clarita Water Division, Newhall County Water District and Valencia Water Company by Luhdorff and Scalmanini, Consulting Engineers, April 2008 (SCVWR, 2008). (See **Appendix 4.3** for a copy of the 2007 Report.)

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

- *CLWA Capital Improvement Program* prepared by Kennedy/Jenks Consultants, 2003.

- *Water Supply Reliability Plan Draft Report* prepared for CLWA by Kennedy/Jenks Consultants, September 2003.

- *Memorandum of Understanding* Between Castaic Lake Water Agency and Newhall County Water District, September 2005.

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

- *Groundwater Management Plan - Santa Clara River Valley Groundwater Basin, East Subbasin*, prepared for CLWA by Luhdorff & Scalmanini Consulting Engineers, December 2003.

- *Regional Groundwater Flow Model for the Santa Clarita Valley: Model Development and Calibration*, prepared for Upper Basin Water Purveyors (CLWA, CLWA Santa Clarita Water Division, Newhall County Water District and Valencia Water Company) by CH2M HILL, April 2004. (See **Appendix 4.3** for a copy of the April 2004 Flow Model.)

- *Analysis of Perchlorate Containment in Groundwater Near the Whittaker-Bermite Property, Santa Clarita, California*, prepared for Upper Basin Water Purveyors in support of the Department of Health Services 97-005 Permit Application by CH2M HILL, December 2004. (See **Appendix 4.3** for a copy of this CH2M Hill report.)

- *Analysis of Near-Term Groundwater Capture Areas for Production Wells Located Near the Whittaker-Bermite Property (Santa Clarita, California)*, prepared for Upper Basin Water Purveyors

in support of the amended 2000 UWMP by CH2M HILL, December 21, 2004. (See **Appendix 4.3** for a copy of this CH2M Hill report.)

- *Water Supply Contract Between the State of California Department of Water Resources and CLWA, 1963* (plus amendments, including the "Monterey Amendment," 1995, and Amendment No. 18, 1999, the transfer of 41,000 acre-feet of SWP supplies from Kern County Water Agency to CLWA). (See **Appendix 4.3** for a copy of this contract, and subsequent amendments thereto.)

- *2002 Semitropic Groundwater Storage Program and Point of Delivery Agreement* among the Department of Water Resources of the State of California, CLWA and Kern County Water Agency.

- *2002 Draft Recycled Water Master Plan* prepared for CLWA by Kennedy/Jenks Consultants.

- *Draft Program Environmental Impact Report - Recycled Water Master Plan*, prepared for CLWA by Bon Terra Consulting, November 2006 (SCH No. 2005041138).

- *Final Program Environmental Impact Report - Recycled Water Master Plan*, prepared for CLWA by Bon Terra Consulting, March 2007 (SCH No. 2005041138).

- *2002 and 2003 Semitropic Groundwater Storage Programs* prepared for CLWA by Kennedy/Jenks Consultants.

- *Draft Environmental Impact Report – Supplemental Water Project Transfer of 41,000 acre-feet of State Water Project Table A Amount*, prepared for CLWA by Science Applications International Corporation, June 2004 (SCH No. 1998041127).

- *Final Environmental Impact Report – Supplemental Water Project Transfer of 41,000 acre-feet of State Water Project Table A Amount*, prepared for CLWA by Science Applications International Corporation, December 2004 (SCH No. 1998041127).

- *Draft Environmental Impact Report - Rosedale-Rio Bravo Water Storage District (RRBWSD) Water Banking and Exchange Program*, prepared for CLWA by Science Applications International Corporation, August 2005 (SCH No. 2005061157).

- *Final Environmental Impact Report - Rosedale-Rio Bravo Water Storage District (RRBWSD) Water Banking and Exchange Program*, prepared for CLWA by Science Applications International Corporation, October 2005 (SCH No. 2005061157).

- *Draft Environmental Impact Report - Castaic Lake Water Agency Water Acquisition from the Buena Vista Water Storage District and Rosedale-Rio Bravo Water Storage District Water Banking and Recovery Program*, prepared for CLWA by Science Applications International Corporation, June 2006 (SCH No. 2006021003).

- *Final Environmental Impact Report - Castaic Lake Water Agency Water Acquisition from the Buena Vista Water Storage District and Rosedale-Rio Bravo Water Storage District Water Banking and*

Recovery Program, prepared for CLWA by Science Applications International Corporation, October 2006 (SCH No. 2006021003).

- California Department of Water Resources, *California's Groundwater*, Bulletin 118, Santa Clara River Valley Groundwater Basin, Santa Clara River Valley East Subbasin, February 2004.

- California Department of Water Resources, *Groundwater Basins in California*, Bulletin 118-80, January 1980. (DWR Bulletin 118-80, 1980).

- California Department of Water Resources, *The State Water Project Delivery Reliability Report 2002*, May 2003. (DWR Reliability Report, May 2003).

- California Department of Water Resources, *The State Water Project Delivery Reliability Report 2005*, Final, April 2006. (DWR Reliability Report, April 2006).

- California Department of Water Resources, *The State Water Project Delivery Reliability Report 2007*, August 2008. (DWR Reliability Report, August 2008). (See **Appendix 4.3** for a copy of the 2007 Delivery Reliability Report.)

- 2008 *Water Master Plan, Draft*, (Santa Clarita Water Division of the Castaic Lake Water Agency), Civiltec Engineering, Inc., May 19, 2008.

- CLWA Letter to Los Angeles County Department of Regional Planning, February 2008. (See **Appendix 4.3** for a copy of this letter.)

- *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*. May 2003. (Los Angeles County, 2003).

- *Mitigated Negative Declaration – Groundwater Containment, Treatment and Restoration Project*, prepared by Kennedy/Jenks Consultants for Castaic Lake Water Agency, September 2005.

- *Interim Remedial Action Plan*, to facilitate and restore pumping of groundwater from two Saugus Formation production wells impacted by perchlorate, prepared by Kennedy/Jenks Consultants for Castaic Lake Water Agency and approved by the Department of Toxic Substances Control, December 2005.

- *Impact and Response to Perchlorate Contamination, Valencia Water Company Well Q2*, prepared by Luhdorff & Scalmanini Consulting Engineers, April 2005 (Q2 Report). (See **Appendix 4.3** for a copy of this report.)

- *Newhall Ranch Revised Additional Analysis*, Volume VIII (Final Revised Text, Figures and Tables), prepared by Impact Sciences Inc., for Los Angeles County, May 2003 (SCH No. 1995011015).

- Nickel Water contract and environmental documentation (see, Newhall Ranch Revised Draft Additional Analysis, Volume II, prepared by Impact Sciences, Inc., for Los Angeles County, November 2002, Appendix 2.5(b), (c) (SCH No. 1995011015)).

- Technical Memorandum: *Potential Effects of Climate Change on Groundwater Supplies for the Newhall Ranch Specific Plan, Santa Clarita Valley, California*, prepared by GSI Water Solutions, Inc. (John Porcello), March 18, 2008. (See **Appendix 8.0** for a copy of this technical memorandum.)

- Technical Memorandum: *Water Demand Update for Newhall Ranch*, prepared by GSI Water Solutions, Inc. (John Porcello), September 24, 2008. (See **Appendix 4.3** for a copy of this technical memorandum.)

- Revised Water Supply Assessment for the Landmark Village Recirculated EIR, prepared by Valencia Water Company, April 2009.

- Final SWP SB 610 Water Supply Assessment for the Skyline Project, prepared by CLWA Santa Clarita Water Division, September 2008.

4.3.3 REGULATORY SETTING

4.3.3.1 Federal

4.3.3.1.1 Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires a variety of actions to protect drinking water and its sources. SDWA authorizes the U.S. Environmental Protection Agency (USEPA) to set national health-based standards for drinking water to protect against both naturally occurring and man-made contaminants that may be found in drinking water. The USEPA, state agencies, and water purveyors work together to ensure that SDWA standards are met.

4.3.3.2 State

4.3.3.2.1 California Drinking Water Regulations

California's drinking water standards (Maximum Contaminant Levels (MCLs)) must be met by all public drinking water systems to which they apply. Primary MCLs are found in California Code of Regulations, title 22, sections 64431-64444. Secondary MCLs address the taste, odor, or appearance of drinking water and are found in California Code of Regulations, title 22, section 64449.

4.3.3.2.2 Urban Water Management Planning Act (UWMP Act)

The UWMP Act requires most urban water suppliers to update and submit to the California Department of Water Resources (DWR) an Urban Water Management Plan (UWMP) every five years. The UWMP is required in order for a water supplier to be eligible for the DWR-administered state grants, loans, and drought assistance. The UWMP provides information on water use, water resources, recycled water,

water quality, reliability planning, demand management measures, best management practices, and water shortage contingency planning for a specified service area or territory.

4.3.3.2.3 Porter-Cologne Water Quality Control Act

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resource Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs) power to protect water quality and is the primary vehicle for implementing California's responsibilities under the federal Clean Water Act. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority to adopt plans and policies, to regulate discharges of waste to surface and groundwater, to regulate waste disposal sites, and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

4.3.3.2.4 Porter-Cologne Water Quality Control Act -- Basin Plan

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region. The Basin Plan must conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its state water policy. To implement state and federal law, the Basin Plan establishes beneficial uses for surface and groundwater in the region, and sets forth narrative and numeric water quality standards to protect those beneficial uses. The applicable Basin Plan (RWQCB, 1994, as amended) provides quantitative and narrative criteria for a range of water quality constituents applicable to certain receiving water bodies and groundwater basins within the Los Angeles Region. Specific water quality criteria are provided for the larger, designated water bodies and groundwater basins within the region, as well as general criteria or guidelines for ocean waters, bays and estuaries, inland surface waters, and groundwaters.

4.3.3.3 Local

4.3.3.3.1 CLWA Groundwater Management Plan

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

CLWA adopted the Groundwater Management Plan (GWMP) on December 10, 2003. The GWMP contains four management objectives for the Basin, including: (1) development of an integrated surface water, groundwater and recycled water supply to meet existing and projected demands for municipal, agricultural and other water uses; (2) assessment of 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.

In 2001, prior to adoption of the GWMP, 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 GWMP. The MOU is a collaborative and integrated approach to several of the aspects of water resource management included in the GWMP. 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 GWMP includes 14 elements intended to accomplish the Basin management objectives listed above. In summary, the plan elements include:

- 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 average 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
- Provisions to update the groundwater management plan

Work on a number of the GWMP elements has been on-going. 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 2005 UWMP over the next twenty-five 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 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.

4.3.3.3.2 2005 UWMP

In December 2005, the CLWA and three local retail purveyors, the CLWA Santa Clarita Water Division (SCWD), Newhall County Water District (NCWD), and Valencia Water Company (VWC), completed preparation of the 2005 UWMP for the CLWA service area.[2] The 2005 UWMP builds upon previous documents, specifically, the 2000 UWMP, CLWA's 2003 Groundwater Management Plan, and the 2005 Groundwater Perchlorate Contamination Amendment and Other Amendments to the 2000 UWMP. The focus of the 2005 Amendment was on updating the significant progress made by CLWA, the local water purveyors, federal and state regulatory agencies, and others in responding to the perchlorate-contaminated groundwater in portions of the Saugus Formation and Alluvial aquifer, the two aquifer systems that comprise the local Santa Clara River Valley East Groundwater Subbasin, which is the source of the local groundwater used to meet portions of the Santa Clarita Valley's potable water supply.

The 2005 UWMP presents information on historic and current water usage and the methodology used to project future water demands within the CLWA service area. In addition, the 2005 UWMP describes the water supplies available to CLWA and the local retail purveyors from 2005 to 2030, the twenty-five year

[2] On February 25, 2006, a lawsuit challenging the 2005 UWMP was filed by California Water Impact Network and Friends of the Santa Clara River alleging that the plan violated the UWMP Act, because it overstated availability of local groundwater and SWP supplies and it allegedly facilitated unsustainable urban development resulting in harm to the Santa Clara River and its habitat (*California Water Impact Network, et al. v. Castaic Lake Water Agency, et al.*, Los Angeles County Superior Court No. BS103295). CLWA and other named parties opposed the litigation challenge. On August 3, 2007, after a hearing, the trial court rejected the litigation challenge to the 2005 UWMP. In that decision, the trial court concluded that substantial evidence supported the determination that the 41,000 afy transfer "remains a valid and reliable water source." Relying upon the evidence presented in the 2005 UWMP and record, the trial court identified the following evidence supporting the validity of the transfer: (a) it was completed in 1999 and DWR has allocated and annually delivered the water in accordance with the completed transfer; (b) the Court of Appeal held that the only defect in the 1999 CLWA EIR was that it tiered from the Monterey Agreement EIR, which was later decertified, and that defect was remedied by CLWA's preparation of the 2004 EIR that did not tier from the Monterey Agreement EIR; (c) the Monterey Settlement Agreement expressly authorizes operation of the SWP in accordance with the Monterey Amendments, which facilitated the 41,000 afy transfer; (d) Courts of Appeal have refused to enjoin the 41,000 afy transfer; and (e) the DWR/CLWA contract encompassing the transfer remains in full force and effect, and no court has ever questioned the validity of the contract, or enjoined the use of this portion of CLWA's SWP Table A supplies.

The trial court decision was the subject of an appeal; however, the parties have settled and the appeal was dismissed in October 2008. Thus, the 2005 UWMP remains valid and is no longer subject to any litigation.

period covered by the plan. The 2005 UWMP also assesses water supply reliability over the next twenty-five year period in five-year increments in average, dry, and multiple-dry years. The 2005 UWMP is found in **Appendix 4.3** of this EIS/EIR.

4.3.3.3.3 County Evaluation of Santa Clarita Valley Water Supplies

Section 2.5 of the Newhall Ranch Revised Additional Analysis, Volume VIII (May 2003), identified and analyzed the existing conditions, potential impacts, and mitigation measures associated with supplying water to the entire Specific Plan area. This prior analysis found that an adequate supply of water existed to meet the demands of both the Specific Plan and cumulative development in the Santa Clarita Valley, including the VCC site, without creating any significant water supply impacts. Based on the prior analysis, and the adopted Specific Plan mitigation measures, the County determined that all water supply impacts were less than significant.

The Newhall Ranch Revised Additional Analysis identified potentially significant impacts to water resources resulting from implementation of the Specific Plan, in conjunction with cumulative development in the Santa Clarita Valley. In response to identified potential significant impacts, the County adopted 21 water supply mitigation measures.[3] Based on the environmental analysis and record, the County's Board of Supervisors found that adoption of the mitigation measures would reduce potentially significant water supply impacts to less-than-significant levels.

4.3.4 EXISTING CONDITIONS

4.3.4.1 Water Agencies of the Santa Clarita Valley

Imported SWP supplies from CLWA are not needed or relied upon to serve the Specific Plan's potable water demands. Instead, the Specific Plan will use local groundwater, Nickel water, and recycled water from local WRPs to meet its potable and non-potable water demands. These local supplies are readily available from the local groundwater basin, contracts (Nickel water), and from existing and approved WRPs (either the two existing upstream WRPs or the approved Newhall Ranch WRP). The proposed Project also would facilitate development on the remainder of the VCC planning area and a portion of the Entrada planning area. Imported SWP supplies from CLWA, in part, would be needed to meet the water demands facilitated by approved development in the VCC planning area, and the planned development in a portion of the Entrada planning area. For that reason, the following discussion of imported water supplies from CLWA is presented in this EIS/EIR.

[3] See, Mitigation Measures SP 4.11-1 through SP 4.11-21 in both the Newhall Ranch Revised Additional Analysis, Volume VIII (May 2003), and the adopted Mitigation Monitoring Plan for the Specific Plan (May 2003). These documents are incorporated by this reference and are available for public inspection and review at the County of Los Angeles Public Library, Valencia Branch, 23743 West Valencia Boulevard, Santa Clarita, California 91355-2191.

4.3.4.1.1 Castaic Lake Water Agency

CLWA, a wholesale public water agency, was formed in 1962 through passage of the "Castaic Lake Water Agency Law."[4] At that time, CLWA's purpose was contracting with State of California, through DWR, to acquire and distribute SWP water to its retail water purveyors. The retail purveyors are SCWD, Los Angeles County Waterworks District No. 36, NCWD and VWC.

Since 1962, subsequent legislation broadened CLWA's purpose, which now includes, but is not limited to, the following: (a) acquire water from the state; (b) distribute such water wholesale through a transmission system to be acquired or constructed by CLWA; (c) reclaim (recycle) water; (d) sell water at retail within certain boundaries; and (e) exercise other related powers.

The CLWA service area comprises approximately 195 square miles (124,800 acres) in Los Angeles and Ventura counties. CLWA serves the incorporated and unincorporated areas in, or adjacent to, the Santa Clarita Valley. Most of this area, including the incorporated cities, is within the geographic boundaries of Los Angeles County, but it also extends into a small portion of eastern Ventura County. The service area includes largely urban areas, such as the City of Santa Clarita, other smaller communities, and rural areas. The West Branch of the California Aqueduct terminates at Castaic Lake, in the northern portion of the service area. **Figure 4.3-1** depicts the CLWA service area.

Adequate planning for, and the procurement of, a reliable water supply is a fundamental function of the CLWA and the local retail purveyors. CLWA obtains its water supply for wholesale purposes principally from the SWP and has a water supply contract with DWR for 95,200 af of SWP Table A Amount. (As discussed below, CLWA maintains other non-SWP supplies, including water from Buena Vista-Rosedale [11,000 afy].)

"Table A" is a term used in SWP water supply contracts. The "Table A Amount" is the annual maximum amount of water to which a SWP Contractor has a contract right to request delivery, and is specified in Table A of each SWP Contractor's water supply 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, operational constraints, 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 stated, CLWA has an annual SWP Table A Amount of 95,000 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 as described above. As background, CLWA's original SWP water supply contract with DWR was amended in 1966 for a maximum annual Table A Amount of 41,500 af. In 1991, CLWA purchased an additional 12,700 af of annual Table A Amount from a Kern County water district. In March 1999, CLWA purchased another 41,000 af of annual Table A Amount from the Wheeler Ridge-Maricopa Water Storage District by way of an

[4] See, California Water Code Appendix section 103-1, 103-15.

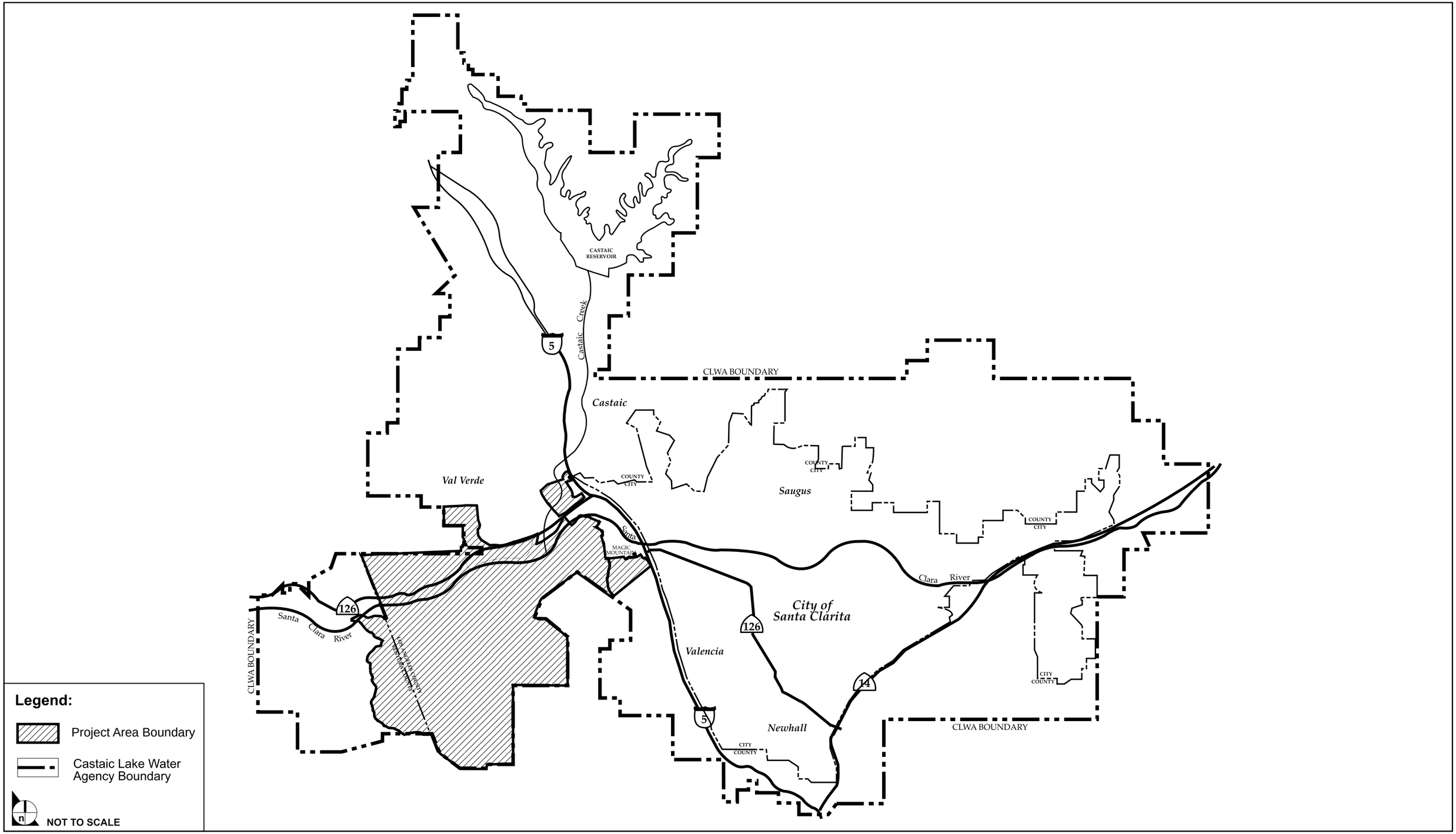
amendment to its water supply contract. The amended water supply contract between CLWA and DWR is found in **Appendix 4.3** of this EIS/EIR.[5]

[5] CLWA prepared an EIR to address the environmental consequences of the 1999 41,000 afy transfer. The EIR for the 41,000 afy transfer was the subject of litigation in Los Angeles County Superior Court (*Friends of the Santa Clara River v. Castaic Lake Water Agency* (Los Angeles County Superior Court, Case No. BS056954). CLWA prevailed in the litigation at the trial court; however, the project opponent (Friends of the Santa Clara River) filed an appeal. In January 2002, the Court of Appeal issued a decision ordering the trial court to decertify the EIR for the 41,000 afy transfer agreement on the grounds that it had tiered from another EIR that had been subsequently decertified in other litigation. In doing so, however, the Court of Appeal also examined all of the petitioner's other arguments, found them to be without merit, and held that, if the tiering problem had not arisen, it would have affirmed the earlier trial court judgment upholding the EIR. (See, **Appendix 4.3** [*Friends of the Santa Clara River v. Castaic Lake Water Agency* (2002) 95 Cal.App.4th 1373, 1387.].)

The Court of Appeal did not invalidate any portion of the completed 41,000 afy transfer agreement. Instead, the Court of Appeal directed the trial court to vacate certification of the EIR, and to retain jurisdiction until CLWA corrected the tiering technicality by preparing a new EIR. (See, **Appendix 4.3** [*Friends of the Santa Clara River*, 95 Cal.App.4th at p. 1388.].)

In October 2002, the Los Angeles County Superior Court refused to prohibit CLWA from using the 41,000 afy of Table A water while a new EIR was being prepared. (See, **Appendix 4.3** [Judgment Granting Peremptory Writ of Mandate, *Friends of the Santa Clara River v. Castaic Lake Water Agency*, Case No. BS056954, filed October 25, 2002.].) The trial court decision on remand was appealed by Friends of the Santa Clara River in January 2003. On December 1, 2003, the appellate court denied any relief to Friends and affirmed the trial court's ruling. (See, **Appendix 4.3** [Appellate Court Opinion, *Friends of the Santa Clara River v. Castaic Lake Water Agency*, Court of Appeal, Second Appellate District, Division Four, Appellate No. B164027.].)

CLWA's revised EIR was subsequently certified by the CLWA Board of Directors on December 23, 2004. On January 24, 2005, separate lawsuits challenging the EIR for this same project were filed by California Water Impact Network and Planning and Conservation League in the Ventura County Superior Court. These cases were consolidated and transferred to Los Angeles County Superior Court. On May 22, 2007, after a hearing, the trial court issued a final Statement of Decision, which included a determination that the 41,000 afy transfer is valid and cannot be terminated or unwound. The trial court, however, also found one defect in the 2004 EIR and ordered CLWA to correct the defect and report back to the court. The defect did not relate to the environmental conclusions reached in the 2004 EIR; rather, CLWA is required to better establish the basis for selecting three alternative scenarios covered in the 2004 EIR. As a result, the trial court entered Judgment against CLWA and another writ of mandate issued directing CLWA set aside its certification of the 2004 EIR. (See, **Appendix 4.3** [Statement of Decision, *California Water Impact Network v. Castaic Lake Water Agency*, Los Angeles County Superior Court No. BS098724, filed April 2, 2007 ("Chalfant Decision."].) The writ, however, specifically stated that it did not call for CLWA to set aside the 41,000 afy transfer. In July 2007, the petitioners appealed the trial court's decision and judgment, and cross-appeals have since been filed by CLWA and other parties. This appeal is still pending.



SOURCE: PSOMAS and Associates, January 1999, Impact Sciences, Inc. – February 2004

FIGURE **4.3-1**

Castaic Lake Water Agency Service Area

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In early 2007, CLWA finalized a Water Acquisition Agreement with the Buena Vista Water Storage District (Buena Vista) and the Rosedale-Rio Bravo Water Storage District (Rosedale-Rio Bravo) in Kern County. Under this Program, Buena Vista's high flow Kern River entitlements (and other acquired waters that may become available) are captured and recharged within Rosedale-Rio Bravo's service area on an ongoing basis. CLWA will receive 11,000 af of these supplies annually either through an exchange of Buena Vista's and Rosedale-Rio Bravo's SWP supplies or through direct delivery of water to the California Aqueduct *via* the Cross Valley Canal.[6] (For a summary of the existing and planned water supplies available for the CLWA service area, please refer to **Tables 4.3-6**, **4.3-7**, **4.3-8**, and **4.3-9**, below.)

CLWA and the local retail purveyors have evaluated the long-term water needs (water demand) within its service area based on applicable county and city plans and has compared these needs against existing and potential water supplies. In addition, the 2005 UWMP was prepared by CLWA and the local retail purveyors to address water supply and demand forecasts for the CLWA service area (over a 25-year horizon (2005-2030)). Although information in the 2005 UWMP was considered, this EIS/EIR does not rely solely on that information, and an independent analysis and determination of water-related impacts was carried out in this EIS/EIR for the proposed Project and alternatives.

4.3.4.1.2 Retail Water Purveyors

Four retail purveyors provide water service to most residents of the Santa Clarita Valley. A description of the service areas of the local retail purveyors is provided below.

The Los Angeles County Waterworks District #36 service area encompasses approximately 7,635 acres and includes the Hasley Canyon area and the unincorporated community of Val Verde. The District obtains its water supply from CLWA and from local groundwater.

CLWA Santa Clarita Water Division (SCWD) service area includes portions of the City of Santa Clarita and unincorporated portions of Los Angeles County in the communities of Canyon Country, Newhall and Saugus. SCWD supplies water from local groundwater and CLWA imported water.

The Newhall County Water District service area includes portions of the City of Santa Clarita and unincorporated portions of Los Angeles County in the communities of Newhall, Canyon Country, Saugus and Castaic. The District supplies water from local groundwater and CLWA imported water.

[6] In November 2006, a petition for writ of mandate was filed by California Water Impact Network, seeking to set aside CLWA's certification of the EIR for the Water Acquisition Agreement Project with Buena Vista and Rosedale-Rio Bravo. (*California Water Impact Network, et al. v. Castaic Lake Water Agency, et al.*, Los Angeles County Superior Court No. BS106546.) The petition was later amended to add Friends of the Santa Clara River (Friends) as a petitioner. In November 2007, the trial court filed its Statement of Decision finding that in certifying the EIR and approving the project, CLWA proceeded in a manner required by law, and that its actions were supported by substantial evidence. Judgment was entered in favor of CLWA in December 2007. Petitioners filed a notice of appeal on January 31, 2008. This appeal is pending.

The Valencia Water Company service area includes a portion of the City of Santa Clarita and unincorporated portions of Los Angeles County in the communities of Castaic, Stevenson Ranch and Valencia. Valencia Water Company (sometimes referred to as "VWC") supplies water from local groundwater, CLWA imported water, and recycled water. Valencia is a public water utility regulated by the California Public Utilities Commission (CPUC), and its service area currently includes portions of the Specific Plan site. **Figure 4.3-2** illustrates the VWC service area.

As of 2007, the retail purveyors served approximately 68,200 connections in the Santa Clarita Valley. The specific breakdown by purveyor is provided in **Table 4.3-3**, below.

Table 4.3-3
Retail Water Service Connections

Retail Water Purveyor	Connections
CLWA Santa Clarita Water Division (SCWD)	27,900
Los Angeles County Waterworks District #36	1,400
Newhall County Water District (NCWD)	9,500
Valencia Water Company (VWC)	29,400
Total	**68,200**

Source: 2007 Santa Clarita Valley Water Report (April 2008).

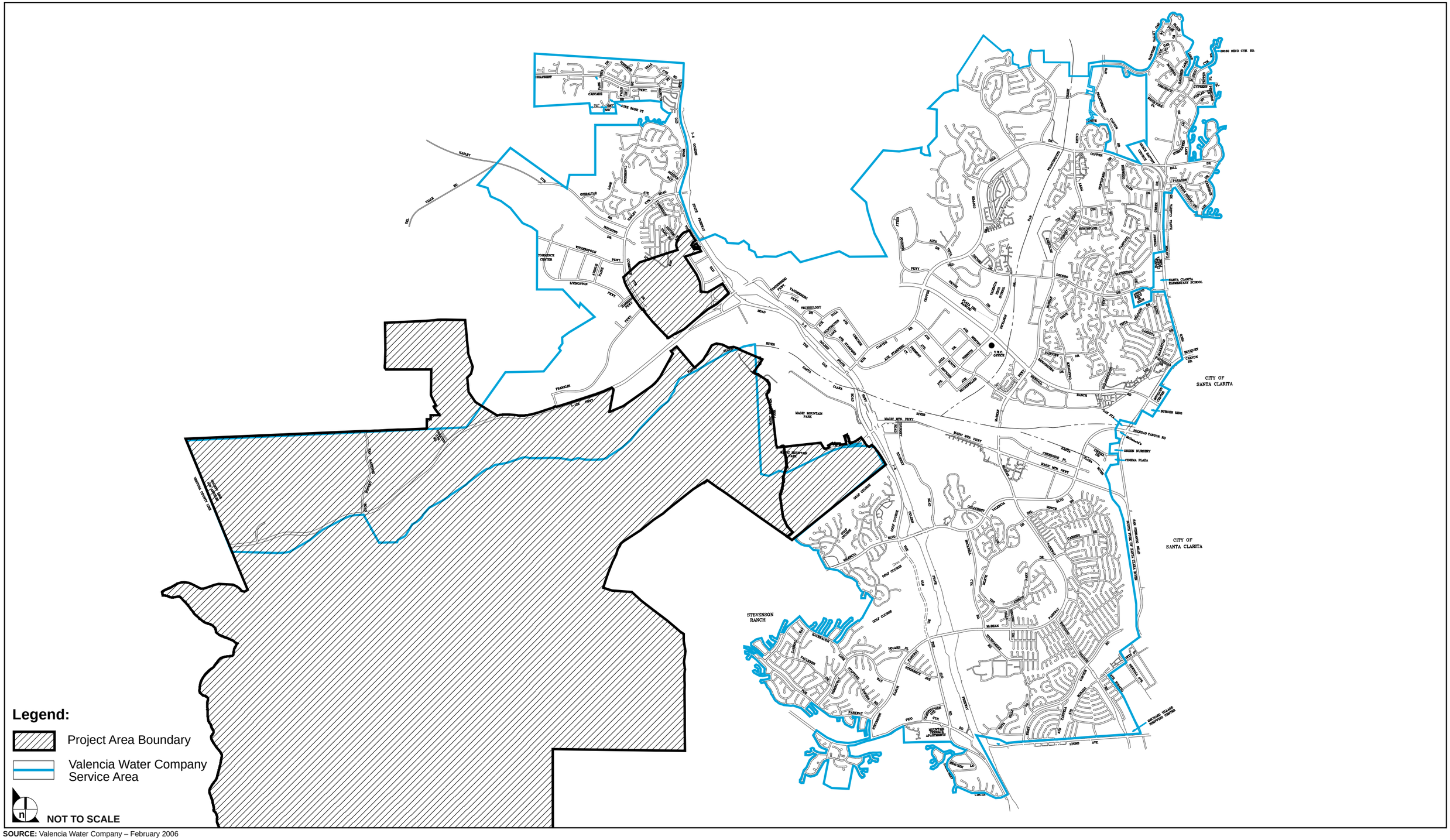
4.3.4.2 State Water Project and Associated Facilities

4.3.4.2.1 SWP Facilities

The SWP is a water supply, storage, and distribution system that includes 28 storage facilities, reservoirs, and lakes; 20 pumping plants; six pumping-generating plants and hydroelectric power plants; and about 660 miles of aqueducts and pipelines.[7] Principal SWP facilities are shown on **Figure 4.3-3**.

In the southern Sacramento-San Joaquin Delta (Delta), water is pumped into the 444-mile-long California Aqueduct at the Clifton Court Forebay by the Banks Pumping Plant (or by agreement with the U.S. Bureau of Reclamation, at the Central Valley Project's (CVP) Tracy Pumping Plant). SWP water exports for users south of the Banks and Tracy pumping plants are currently limited by a series of water quality and operational constraints, governed primarily by the SWRCB Water Right Decision 1641 (D-1641), as amended. D-1641 was adopted by the SWRCB in 1999; prior to that time, SWP water exports from the Delta were limited by the SWRCB's Water Right Decision 1485 (adopted in 1978), Order Water Right (WR) 95-6 (adopted in 1995), and Order WR 98-09 (adopted in 1998). In addition, DWR has

[7] Department of Water Resources. 2001. Bulletin 132-00: Management of the California State Water Project. December 2001.



SOURCE: Valencia Water Company – February 2006

FIGURE **4.3-2**

Valencia Water Company Service Area

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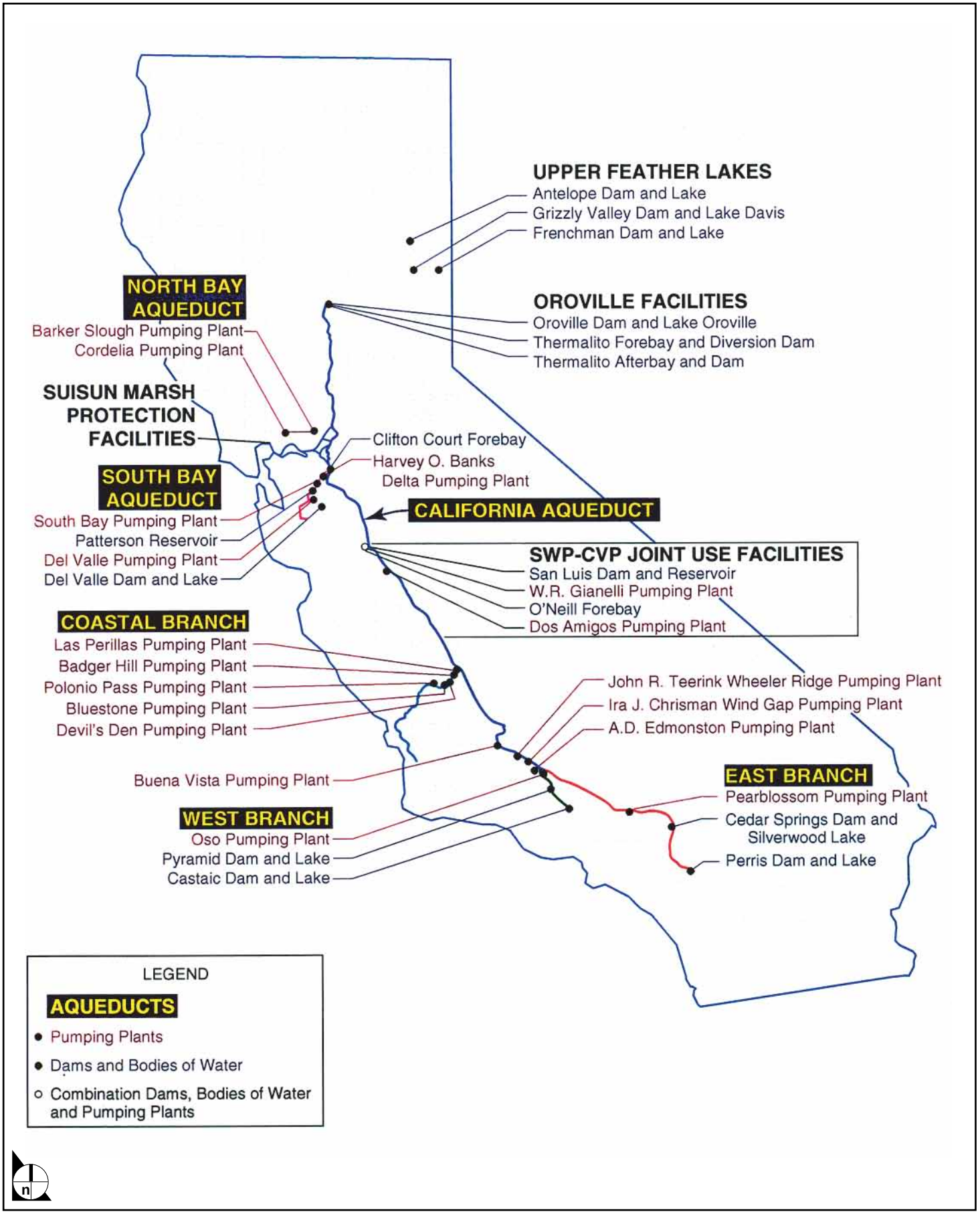


SOURCE: DWR (1997a)

FIGURE **4.3-3**

Principal State Water Program Facilities

acknowledged constraints on the SWP system due to recent federal court litigation (*Natural Resources Defense Council v. Kempthorne*, 506 F.Supp.2d 322 (E.D. Cal. 2007) (*Wanger* Decision - Delta smelt); and *Pacific Coast Federation of Fishermen's Associations, et al. v. Gutierrez, et al.*, No. 06-CV-00245-OWW-GSA (E.D. Cal. 2008) (*Wanger* Decision - Chinook salmon/steelhead). (Copies of these two decisions are available in **Appendix 4.3**.) DWR has stated that it will operate the SWP and its facilities in accordance with all statutory requirements, and, in the immediate short-term time frame, operate the SWP using the remedies imposed by the federal court in the *Wanger* Decision to provide protection for Delta smelt, a listed fish species. Further, DWR has stated that a new Biological Opinion for Delta smelt will replace the trial court's order regarding the operation of the SWP, and the new Biological Opinion would continue to provide the mitigation required to address the SWP's impact on the Delta smelt and other listed fish species. (The current status of the Delta smelt Biological Opinion and the associated litigation is provided below.)

From the southern Delta facilities, water in the California Aqueduct travels along the west side of the San Joaquin Valley and is delivered directly to SWP Contractors or is stored in San Luis Reservoir, the SWP's main storage facility south of the Delta. Water is conveyed via the California Aqueduct to the urban region of the Bay area, and south of San Luis Reservoir, to the primarily agricultural regions in the San Joaquin Valley and the primarily urban regions of the Central Coast and southern California. Water is diverted from the California Aqueduct and delivered directly to SWP Contractors in the central and southern San Joaquin Valley at various locations along the California Aqueduct. The California Aqueduct traverses the west side of the San Joaquin Valley, and water is pumped through a series of four pumping plants (Dos Amigos, Buena Vista, Teerink, and Chrisman) before reaching the Edmonston Pumping Plant. The Edmonston Pumping Plant pumps water over the Tehachapi Mountain Range, and the California Aqueduct then divides into the East Branch and the West Branch. Water intended for use by CLWA is conveyed through the West Branch to Quail and Pyramid Lakes and then to Castaic Lake, the terminus for the West Branch.

4.3.4.2.2 SWP Operations, Deliveries, and Constraints[8]

In the early 1960s, DWR began entering into individual water supply contracts with various urban and agricultural public water supply agencies (*i.e.*, SWP Contractors). The total planned annual delivery capability of the SWP and the sum of all SWP Contractors' maximum Table A amounts specified in the water supply contracts were approximately 4.2 million acre-feet (maf). The initial SWP storage facilities were designed to meet SWP Contractors' water demands in the early years of the project, with construction of additional storage facilities planned as demands increased. Conveyance facilities were generally designed and constructed to deliver full Table A Amounts to SWP Contractors. Water deliveries

[8] Bulletin 132-04, Management of the California State Water Project (September 2005), is the most recent published data by DWR for SWP operations and deliveries to SWP Contractors. Because Bulletin 132-04 covers SWP activities through calendar year 2003, the SWP delivery information presented in this EIS/EIR includes information through calendar year 2003, which is the latest year available. (See, **Appendix 4.3** [Bulletin 132-04, Management of the California State Water Project (September 2005)].)

to SWP Contractors began as initial SWP facilities were completed in the late 1960s and early 1970s; however, no additional SWP storage facilities have been constructed since that time.

From 1990 to 2003, actual SWP annual deliveries of Table A supplies to SWP Contractors ranged from approximately 550,000 af in 1991 to approximately 3.2 maf in 2000 and 2003 (excluding Article 21 deliveries). The primary factors affecting the amount of Table A deliveries are the availability of SWP supplies and the SWP Contractors' demands for this water. Climatic conditions and other factors can also significantly alter and reduce the availability of SWP water in any 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, operational, and environmental constraints, and the SWP Contractors' requests for SWP supplies. Even in years when additional Table A supplies are available, the amount of water DWR allocates is limited to SWP Contractors' requests. The requests of many SWP Contractors during this 14-year period were less than their full Table A Amount, so SWP Contractor requests limited allocations in some years. In addition, since SWP Contractors' water needs may change during the year (*e.g.*, due to higher than anticipated local precipitation and supplies), they may not take delivery of all of the Table A supply allocated to them. Since historically low SWP Contractor demands have limited deliveries in wetter years when additional supplies were available, historic deliveries only provide an indication of actual SWP delivery capability in supply-limited dry years.

To determine the SWP delivery capability under current and future conditions, DWR uses a computer model (currently, CALSIM II) that simulates operations of the SWP and CVP. DWR's most recently published estimates of SWP delivery reliability are included in DWR's State Water Project Delivery Reliability Report 2007 (August 2008).[9]

As background, DWR has assessed the impact of various conditions on SWP supply reliability since 2003. (See DWR Reliability Report, May 2003.) The report assisted SWP contractors in assessing the reliability of the SWP component of their overall supplies. DWR subsequently issued its 2005 SWP Delivery Reliability Report (April 2006). This updated analysis estimated that the SWP, using existing facilities operated under current regulatory and operational constraints, and with all contractors requesting delivery of their full Table A Amounts in most years, could deliver 77 percent of total Table A Amounts on a long-term average basis. The 2005 UWMP's discussion of SWP supply reliability is based on the analysis contained in the DWR 2005 Delivery Reliability Report, April 2006.

Since that time, DWR released the 2007 State Water Project Delivery Reliability Report (August 2008). This Report updates the 2005 Delivery Reliability Report, and describes three areas of uncertainty to SWP delivery reliability: (a) the recent and significant decline in pelagic organisms in the Delta (open-water fish such as striped bass, Delta smelt, and longfin smelt); (b) climate change and sea level rise; and (c) the vulnerability and potential failure of Delta levees. The inclusion of new areas of uncertainty distinguishes the 2007 Delivery Reliability Report from earlier reports by including estimates of the

[9] See **Appendix 4.3** (State Water Project Delivery Reliability Report 2007, August 2008).

potential reductions to SWP delivery reliability due to the pelagic organism decline and future climate changes.

As described in the 2007 Delivery Reliability Report (August 2008), simulations to evaluate future (2027) SWP delivery reliability incorporate the current interim court-ordered operating rules related to Delta smelt and a range of possible climate change impacts to hydrology in the Central Valley. The interim operating rules for Delta smelt are simulated at a more restricted level and a less restricted level for Delta exports to provide a range of estimated water deliveries. Therefore, for 2007, two studies were conducted. For 2027, ten simulations were used to reflect the four assumed scenarios for climate change and the two levels of operating rules.

The 2007 Delivery Reliability Report (August 2008) includes the information presented in **Tables 4.3-4** and **4.3-5**, below, which provide average and dry period estimated deliveries for current conditions (2007) and future conditions (2027), and compares those figures to those in the DWR 2005 Delivery Reliability Report.

Table 4.3-4
Average And Dry Period SWP Table A Deliveries
From The Delta Under Current Conditions

	SWP Table A Delivery from the Delta (in percent of maximum Table A[1])					
Study of Current Conditions	**Long-Term Average[2]**	**Single Dry-Year (1977)**	**2-Year Drought (1976-1977)**	**4-Year Drought (1931-1934)**	**6-Year Drought (1987-1992)**	**6-Year Drought (1929-1934)**
2005 SWP Reliability Report, Study 2005	68%	4%	41%	32%	42%	37%
Update with 2007 Studies[3]	63%	6%	34%	35%	35%	34%

Notes:

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

2 1922-1994 for 2005 Delivery Reliability Report; 1922-2003 for Update with 2007 studies.

3 Values reflect averaging annual deliveries from the two scenarios of Old and Middle River flow targets described in Table 6-3 of the 2007 Delivery Reliability Report.

Source: DWR Delivery Reliability Report, 2007 (August 2008), Table 6-5.

Table 4.3-5
Average And Dry Period SWP Table A Deliveries From The Delta Under Future Conditions

SWP Table A Delivery from the Delta (in percent of maximum Table A[1])						
Study of Future Conditions	**Long-term Average[2]**	**Single dry-year (1977)**	**2-year drought (1976-1977)**	**4-year drought (1931-1934)**	**6-year drought (1987-1992)**	**6-year drought (1929-1934)**
2005 SWP Reliability Report, Study 2025	77%	5%	40%	33%	42%	38%
Update with 2027 Studies[3]	66-69%	7%	26-27%	32-37%	33-35%	33-36%

Notes:

[1] Maximum Table A Amount is 4,133 thousand acre-feet/year.

[2] 1922-1994 for 2005 Delivery Reliability Report; 1922-2003 for Update with 2027 studies.

[3] Range in values reflects four modified scenarios of climate change: annual Table A deliveries were first interpolated between full 2050 level and no climate change scenarios, then averaged over the two scenarios of Old and Middle River flow targets.

Source: DWR Delivery Reliability Report, 2007 (August 2008), Table 6-14.

As shown, under the updated Future Conditions (2027), average SWP delivery amounts may decrease from 8 to 11 percent of maximum Table A Amounts as compared to earlier estimates in the 2005 Delivery Reliability Report. This decrease in reliability results in an estimated average delivery of 66 percent to 69 percent (versus 77 percent as identified in the 2005 Delivery Reliability Report).

Applying the 66 percent figure (most conservative of the 66-69 percent range) to CLWA's Table A Amount of 95,200 af, results in approximately 62,800 af expected under average Future Conditions (2027) according to the 2007 Delivery Reliability Report (August 2008). This is compared to the 77 percent, or 73,300 af, included in the water supply planning in the 2005 UWMP in 2030 in an average year.

Further Discussion of Constraints. A topic of growing concern for water planners and managers is global climate change and the potential impacts it could have on California's future water supplies. DWR's California Water Plan Update 2005 contains the first-ever assessment of such potential impacts in a California Water Plan. Volume 1, Chapter 4 of the Water Plan, *Preparing for an Uncertain Future*, lists the potential impacts of global climate change, based on more than a decade of scientific studies on the subject. In addition, please refer to **Section 8.0**, Global Climate Change, of this EIS/EIR, and, specifically, the appendices to that section. The appendix contains the best available information on the subject of global climate change and its effects on California's water supplies.

Changes in Sierra snowpack patterns (the source of the SWP's water supply in Lake Oroville), hydrologic patterns, sea level, rainfall intensity, and statewide water demands are all possible should global climate change prove to be increasing through time. Computer models (such as CALVIN) have been developed to show water planners what types of effect climate change could have on the water supply. DWR has committed to continue to update and refine these models based on on-going scientific data collection, and

to incorporate this information into future California Water Plans, so that agencies like CLWA and the purveyors can plan accordingly.

DWR's 2007 State Water Project Delivery Reliability Report (August 2008) also addresses global climate change and its effects on the state's water resources, particularly the SWP's ability to deliver water. For the SWP, climate change has the potential to simultaneously affect the availability of source water, the ability to convey water, and users' demands for water. These potential effects are described further in the 2007 Delivery Reliability Report (August 2008), pp. 29-36.

In addition, recent state and federal court litigation has had an impact upon the availability and reliability of imported SWP supplies. For example, in October 2006, plaintiff, Watershed Enforcers, a project of the California Sportfishing Protection Alliance, filed a lawsuit in Alameda County Superior Court alleging that DWR was not in compliance with the CESA and did not have the required state incidental take permit to protect the Delta smelt as part of DWR's pumping operations at the Harvey O. Banks Pumping Plant located near the town of Tracy (*Watershed Enforcers, et al. v. California Department of Water Resources, et al.* Alameda County Superior Court No. RG06292124 [*Watershed* decision]). In April 2007, the court agreed with the plaintiff and ordered a shutdown of pumping from the Delta if appropriate permits could not be obtained in 60 days. In May 2007, DWR filed an appeal of the trial court's decision, which automatically stayed the decision pending the outcome of the appeal. At the same time, DWR entered into a Memorandum of Understanding with CDFG to jointly work with the appropriate federal agencies to develop a federal Biological Opinion that complies with CESA. During preparation of the new Biological Opinion, DWR committed itself to actions related to protecting the Delta smelt and other species through adaptive management provisions. Upon completion of this effort, DWR plans to submit a request to CDFG for a consistency determination under CESA that would allow for incidental take based on the new federal Biological Opinion.

The *Wanger* Decisions also have affected imported SWP supplies. The background of the *Wanger* Decisions and their implications are discussed further below.

2007 *Wanger* Decision. On February 16, 2005, the USFWS issued its Biological Opinion, determining that the operations and criteria for both the CVP and SWP would not result in jeopardy to the Delta smelt. On May 20, 2005, the Natural Resources Defense Council (NRDC) and others filed a supplemental complaint in federal court against the Secretary of the Interior and the Director of USFWS, challenging the adequacy of the 2005 Biological Opinion. On June 9, 2006, plaintiffs filed their motion for summary judgment. On July 6, 2006, in light of new information, the U.S. Bureau of Reclamation (Bureau), operator of CVP, requested that USFWS reinitiate consultation on the operations plan and criteria for the CVP. Notwithstanding the request for reinitiation of consultation, the parties proceeded with briefing their cross-motions for summary judgment and, on May 25, 2007, the U.S. District Court for the Eastern District, the Honorable Oliver W. Wanger, presiding, found that the 2005 Biological Opinion was inadequate and that the no-jeopardy determination was arbitrary, capricious, and contrary to the law.[10]

[10] The 2007 *Wanger* decision (*Natural Resources Defense Council v. Kempthorne*, 506 F.Supp.2d 322 (E.D. Cal. 2007)) is found in **Appendix 4.3** of this EIS/EIR.

Thereafter, on August 31, 2007, Judge Wanger announced an initial ruling, which outlined an operational plan calling for reductions in water supplies to protect the Delta smelt. The Court specified that reduced operations would last until the fall of 2008, while federal agencies develop a revised Biological Opinion for Delta smelt that will ensure the SWP's and CVP's compliance with the requirements of the federal ESA. (The current status of the Delta smelt Biological Opinion and the associated litigation is provided below.)

On December 14, 2007, Judge Wanger issued a final court order, which curtails Delta pumping to protect the Delta smelt. The range of reduced operations is consistent with earlier estimates made by DWR following the Court's initial ruling in August 2007. Following Judge Wanger's final ruling, DWR performed additional modeling and analysis of the impacts of the *Wanger* Decision on Delta pumping. According to DWR, the final ruling will primarily affect export pumping between January and June 2008, when juvenile Delta smelt are at greatest risk of entrainment in pumps. Further, DWR has stated that the actual impact on SWP water supply will depend on a number of factors, including the locations where adult smelt spawn and off-spring hatch, levels of precipitation for the year, and water temperatures affecting how quickly the fish migrate. The Court's restrictions on SWP/CVP operations will last until the fall of 2008, while the revised Biological Opinion for Delta smelt is completed (see below). The revised Biological Opinion is expected to impose restrictions that may continue reduced pumping operations in the SWP/CVP until broader solutions are implemented for the Bay-Delta.

2008 *Wanger* Decision. U.S. District Court Judge Oliver Wanger also recently invalidated a 2004 biological opinion issued by the National Marine Fisheries Service (NMFS). The 2004 NMFS Biological Opinion determined that, pursuant to section 7 of the federal ESA, the operation of the Delta pumps would not jeopardize the continued existence of three listed Delta fish species protected under the federal ESA, namely, the winter-run Chinook salmon, the Central Valley spring-run Chinook salmon, and the Central Valley steelhead. Judge Wanger invalidated the biological opinion by relying on several of the factual findings made by NMFS in that opinion. Judge Wanger also faulted the biological opinion for, among other issues, failing to adequately analyze the impact of the operations plan on the critical habitat of the three species.[11]

After Judge Wanger's ruling, the court held hearings in June and July 2008 on possible remedies; however, no further remedies were imposed beyond the curtailments already issued with respect to the Delta smelt in the prior 2007 *Wanger* Decision.

On November 14, 2008, the California Fish and Game Commission listed the longfin smelt as a threatened species under the California Endangered Species Act. The Commission also voted to change the state-protected status of the Delta smelt from threatened to endangered. In response, on December 9, 2008, the State Water Contractors and other water agencies filed litigation challenging the Commission's decision on the longfin smelt under the California Endangered Species Act. The litigation is still pending, and the outcome of the litigation cannot be predicted as of this writing.

[11] The 2008 *Wanger* decision (*Pacific Coast Federation of Fishermen's Associations, et al. v. Gutierrez, et al.*, No. 06-CV-00245-OWW-GSA (E.D. Cal. 2008)) is found in **Appendix 4.3** of this EIS/EIR.

On December 15, 2008, USFWS issued the new Biological Opinion for Delta smelt. The Opinion continues restrictions on SWP and federal CVP operations that have been in place under Judge Wanger's order concerning Delta smelt. However, the Opinion also imposes new requirements for Delta outflows under certain conditions and requires increased reservoir releases in the fall of some years to reduce salinity. DWR has not yet issued a new "State Water Project Delivery Reliability Report," which is expected to address the ramifications of the new Biological Opinion, and its effects on SWP supplies and deliveries. DWR is expected to issue the 2009 State Water Project Delivery Reliability Report in 2010. In response to the Biological Opinion, on March 5, 2009, the State Water Contractors and others filed litigation challenging the new Delta smelt Biological Opinion under provisions of the federal Endangered Species Act. The litigation is still pending, and the outcome of the litigation cannot be predicted as of this writing.

The *Watershed* and the two *Wanger* Decisions, and the recent actions taken by USFWS and California Fish and Game Commission, as well as the associated litigation, have serious implications on imported SWP/CVP water supplies throughout California. These implications are outlined below based on the best available information.

In terms of short-term water supply availability, there have been short-term effects related to issues presented in the *Watershed* and *Wanger* Decisions. For example, pumping operations were shut down for approximately nine days in June 2007 due to concerns over the declining number of Delta smelt. DWR then operated the pumps at limited levels for several weeks while waiting for the smelt to migrate to cooler waters. DWR then resumed normal operations in July 2007. There is also concern that the remedy adopted by the District Court could ultimately become part of the conditions in the new incidental take permit, which is currently subject to litigation. These concerns, if they materialize, could limit the percentage of SWP water that can be delivered to SWP Contractors, including CLWA. If such remedies are not ultimately part of the incidental take permit, the permit itself may contain conditions that would lower the percentage of SWP water made available for delivery to Southern California, including the Santa Clarita Valley.

Because of these concerns, Governor Schwarzenegger directed DWR to take immediate action to improve conditions in the Delta.[12] According to the Office of the Governor, the Governor is building on his Strategic Growth Plan from last year, which consists of approximately $6 billion to upgrade California's water systems. The Governor's plan invests $4.5 billion to develop additional surface and groundwater storage. The plan also includes $1 billion toward restoration of the Delta, including development of a new conveyance system, $250 million to support restoration projects on the Kalamath, San Joaquin, and Sacramento rivers, and the Salton Sea project, and $200 million for grants to California communities to help conserve water. Using existing resources, DWR will implement numerous actions, including screening Delta agriculture intake pumps to protect smelt, restoring the North Delta's natural habitat, improving the Central Delta water flow patterns, and improving DWR’s ability to respond to Delta emergencies, such as levee failures.

[12] For the Governor's release issued July 17, 2007, please refer to **Appendix 4.3** of this EIS/EIR.

The Governor also has directed the Delta Vision Blue Ribbon Task Force to develop a delta management plan. The Task Force presented its findings and recommendations in early 2008, and its strategic plan was issued at the end of 2008. The final report includes a suite of strategic recommendations for long-term, sustainable management of the Bay-Delta. Please refer to the Delta Vision website for the final report and associated information (http://deltavision.ca.gov/ [last visited April 6, 2009]). The Bay-Delta Conservation Plan is also underway. The Plan is intended to ensure compliance with federal and state Endangered Species Act requirements in the Delta. The $1 billion proposed in the Governor's comprehensive plan will be used to fund recommendations from both the Delta Vision Task Force and the Conservation Plan.[13]

Over the long-term, water supply availability and reliability will continue to be assessed by DWR in DWR's biennial SWP delivery reliability reports. These reports take into account a myriad of factors in evaluating long-term water supply availability and reliability. These factors include multiple sources of water, a range of water demands, timing of water uses, hydrology, available facilities, regulatory restraints, including pumping constraints due to impacts on listed fish species, water conservation strategies, and future weather patterns. The *Watershed* and the two *Wanger* decisions highlight the regulatory restraints applicable to SWP supplies, which have impacted DWR deliveries of SWP supplies in the past, and could curtail such deliveries in the future.

Following the final court order issued in the 2007 *Wanger* Decision, representatives of CLWA and the four local retail water purveyors met with Los Angeles County and City of Santa Clarita planning staff to coordinate water supply and land use planning activities for the Santa Clarita Valley. In addition, DWR has since issued the 2007 Delivery Reliability Report (August 2008).

Based on this updated information, CLWA has determined that, while the court-ordered operating rules related to Delta smelt (or a Biological Opinion premised on those operating rules) are in effect, there are sufficient water supplies available for pending and future residential and commercial development within the CLWA service area for the foreseeable future through 2030 as set forth in the 2005 UWMP.[14]

4.3.4.3 CLWA Imported Water Supplies

4.3.4.3.1 CLWA Facilities

CLWA receives SWP water through the terminus of the West Branch of the California Aqueduct at Castaic Lake. Water supplies (whether derived from local or imported water supplies) require treatment (filtration and disinfection) prior to distribution. The SWP water from Castaic Lake is treated at the Earl Schmidt Filtration Plant (ESFP) and Rio Vista Water Treatment Plant (RVWTP) (both owned and operated by CLWA), and is distributed to the four retail water purveyors through a system of pipelines.

[13] Please refer to the DWR 2007 Delivery Reliability Report (August 2008) for the current status of planning activities that may affect SWP delivery reliability, pp. 25-28 (a copy of which is found in **Appendix 4.3** of this EIS/EIR).

[14] Please refer to CLWA's letter to the Los Angeles County Department of Regional Planning (February 5, 2008), a copy of which is found in **Appendix 4.3** of this EIS/EIR.

The RVWTP is planned for future expansion from its current 30 million gallons per day (mgd) treatment capacity to 60 mgd, and eventually to 90 mgd as demands increase for treated water. The ESFP operates at a treatment capacity of 56 mgd. The current combined capacity of the two treatment plants is approximately 86 mgd.

4.3.4.3.2 Santa Clarita Valley Water Supply

The current water supply for the Santa Clarita Valley is derived from both local and imported sources. The principal components of this supply are imported water from the SWP and local groundwater from both the Alluvial aquifer and the Saugus Formation. Since 2003, these water supplies have been augmented by the initiation of deliveries from CLWA's recycled water program.

In addition to these supplies, which are available and used to meet service area demands every year, CLWA also has storage programs that are planned for use under shortage situations (*e.g.*, during drier years when imported supplies are limited). These storage programs improve the reliability of CLWA's overall supplies by enabling existing supplies that are not needed in wetter years to be stored for use in drier years, but they do not increase the supplies available to meet service area demand every year.

Table 4.3-6 summarizes the existing and planned water supplies and banking programs for the CLWA service area. According to CLWA, the information presented on this table is not intended to be an operational plan for how supplies would be used in a particular year, but rather an identification of the complete range of water supplies available under varying hydrologic conditions. Diversity of supply allows CLWA and the local retail purveyors the option of drawing on multiple sources of supply in response to changing conditions, such as varying weather patterns (average/normal years, single-dry years, multiple dry years), fluctuations in delivery amounts of SWP water, natural disasters, perchlorate-impacted wells, and other factors. Based on CLWA's conservative water supply and demand assumptions over the next 20 years (*i.e.*, through 2030 as described in the 2005 UWMP), in combination with conservation of non-essential demand during certain dry years, the water supply plan described in the 2005 UWMP achieves CLWA's and the local retail purveyors' goal of delivering reliable and high-quality water supply for their customers, even during dry periods.[15] Additional tables are provided below that address available water supplies in the Santa Clarita Valley in normal/average years, single-dry years, and multiple-dry years over a 20-year planning horizon.

Average/Normal Year. Table 4.3-7 summarizes water supplies available to meet demands over the 20-year planning period during an average/normal year. As presented in the table, water supply is broken down into existing and planned water supply sources, including wholesale (imported) water, local supplies, and banking programs. Demands also are reflected on the table, both with and without the

[15] CLWA recently articulated the above determinations, through its retail water division (CLWA Santa Clarita Water Division), in the *Final SWP SB 610 Water Supply Assessment for the Skyline Project* (September 2008), p. 30. This document is available for public inspection and review at the County of Los Angeles Public Library, Valencia Branch, 23743 West Valencia Boulevard, Santa Clarita, California 91355-2191, and is incorporated by reference in this EIS/EIR.

Table 4.3-6
Summary of Current and Planned Water Supplies and Banking Programs[1]

Water Supply Sources	Supply (af)					
	2007	2010	2015	2020	2025	2030
Existing Supplies[1]						
Wholesale (Imported)	64,680	78,667	79,667	79,287	80,287	80,287
SWP Table A Supply[2]	60,000	60,000	61,000	62,000	63,000	63,000
Buena Vista-Rosedale	0	11,000	11,000	11,000	11,000	11,000
Nickel Water - Newhall Land	0	1,607	1,607	1,607	1,607	1,607
Flexible Storage Account (CLWA)[3]	4,680	4,680	4,680	4,680	4,680	4,680
Flexible Storage Account (Ventura County)[3, 4]	0	1,380	1,380	0	0	0
Local Supplies						
Groundwater	40,000	46,000	46,000	46,000	46,000	46,000
Alluvial Aquifer	35,000	35,000	35,000	35,000	35,000	35,000
Saugus Formation	5,000	11,000	11,000	11,000	11,000	11,000
Recycled Water	1,700	1,700	1,700	1,700	1,700	1,700
Total Existing Supplies	106,380	126,367	127,367	126,987	127,987	127,987
Existing Banking Programs[3]						
Semitropic Water Bank[5]	50,870	50,870	0	0	0	0
Rosedale-Rio Bravo[7]	0	64,898	64,898	64,898	64,898	64,898
Semitropic Water Bank – Newhall Land[8]	0	18,828	18,828	18,828	18,828	18,828
Total Existing Banking Programs	50,870	134,596	83,726	83,726	83,726	83,726
Planned Supplies[1]						
Local Supplies						
Groundwater	0	10,000	10,000	20,000	20,000	20,000
Restored wells (Saugus Formation)	0	10,000	10,000	10,000	10,000	10,000
New Wells (Saugus Formation)	0	0	0	10,000	10,000	10,000
Recycled Water - CLWA[6]	0	0	1,600	6,300	11,000	15,700
Recycled Water - Newhall Ranch	0	0	1,500	2,500	3,500	5,400
Total Planned Supplies	0	10,000	13,100	28,800	34,500	41,100
Planned Banking Programs[3]						
Additional Planned Banking	0	0	20,000	20,000	20,000	20,000
Total Planned Banking Programs	0	0	20,000	20,000	20,000	20,000

[1] The values shown under "Existing Supplies" and "Planned Supplies" are supplies projected to be available in average/normal years. The values shown under "Existing Banking Programs" and "Planned Banking Programs" are the total amounts currently in storage; the values shown under "Planned Banking Programs" represent the annual maximum withdrawal capacity. In 2008, CLWA also acquired approximately 850 af of non-SWP water supply by entering into a water transfer agreement with Yuba County Water Agency (YCWA); however, CLWA has not yet updated its water supplies/demand tables to reflect this additional non-SWP supply.

[2] SWP supplies are calculated by multiplying CLWA's Table A Amount of 95,200 af by percentages of average deliveries projected to be available, based on Tables 6-5 and 6-14 of DWR's "State Water Project Delivery Reliability Report 2007." Year 2030 figure is calculated by multiplying by DWR's 2027 percentage of 66%.

[3] Supplies shown are total amounts that can be withdrawn, and would typically be used only during dry years.

[4] Initial term of the Ventura County entities' flexible storage account is ten years (from 2006 to 2015).

[5] Supplies shown are the total amount currently in storage, and would typically be used only during dry years. Once the current storage amount is withdrawn, this supply would no longer be available and in any event, is not available after 2013.

[6] Recycled water supplies based on projections provided in CLWA's 2005 UWMP Chapter 4, Recycled Water.

[7] CLWA has 64,900 af of recoverable water as of 12/31/07 in the Rosedale-Rio Bravo Water Banking and Recovery Program.

[8] Supplies shown are the total amount currently in storage. As of December 31, 2007, there is 18,828 af of water stored in the Semitropic Groundwater Storage Bank by The Newhall Land and Farming Company for the Newhall Ranch Specific Plan. The stored water can be extracted from the bank in dry years in amounts up to 4,950 afy. Newhall Ranch is located within the CLWA service area.
Source: Landmark Village Revised WSA (April 2009)

Table 4.3-7
Projected Average/Normal Year Supplies and Demands

Water Supply Sources	Supply (af)				
	2010	2015	2020	2025	2030
Existing Supplies					
Wholesale (Imported)	73,007	73,707	74,407	75,107	75,407
SWP Table A Supply[1]	60,400	61,100	61,800	62,500	62,800
Buena Vista-Rosedale	11,000	11,000	11,000	11,000	11,000
Nickel Water - Newhall Land	1,607	1,607	1,607	1,607	1,607
Flexible Storage Account (CLWA)[2]	0	0	0	0	0
Flexible Storage Account (Ventura County)[2]	0	0	0	0	0
Local Supplies					
Groundwater	46,000	46,000	46,000	46,000	46,000
Alluvial Aquifer	35,000	35,000	35,000	35,000	35,000
Saugus Formation	11,000	11,000	11,000	11,000	11,000
Recycled Water	1,700	1,700	1,700	1,700	1,700
Total Existing Supplies	120,707	121,407	122,107	122,807	123,107
Existing Banking Programs					
Semitropic Water Bank[2]	0	0	0	0	0
Rosedale-Rio Bravo[2]	0	0	0	0	0
Semitropic Water Bank - Newhall Land[2]	0	0	0	0	0
Total Existing Banking Programs	0	0	0	0	0
Planned Supplies					
Local Supplies					
Groundwater	0	0	0	0	0
Restored wells (Saugus Formation)[2]	0	0	0	0	0
New Wells (Saugus Formation)[2]	0	0	0	0	0
Recycled Water - CLWA[3]	0	1,600	6,300	11,000	15,700
Recycled Water - Newhall Ranch	0	1,500	2,500	3,500	5,400
Total Planned Supplies	0	3,100	8,800	14,500	21,100
Planned Banking Programs					
Additional Planned Banking[2]	0	0	0	0	0
Total Planned Banking Programs	0	0	0	0	0
Total Existing and Planned Supplies and Banking	120,707	124,507	130,907	137,307	144,207
Total Estimated Demand (w/o conservation)[4]	100,050	109,400	117,150	128,400	138,300
Conservation[5]	(8,600)	(9,700)	(10,700)	(11,900)	(12,900)
Total Adjusted Demand	91,450	99,700	106,450	116,500	125,400

[1] SWP supplies are calculated by multiplying CLWA's Table A Amount of 95,200 af by percentages of average deliveries projected to be available on Tables 6-5 and 6-14 of DWR's "State Water Project Delivery Reliability Report 2007." Year 2030 figure is calculated by multiplying by DWR's 2027 percentage of 66%.

[2] Not needed during average/normal years.

[3] Recycled water supplies based on projections provided in CLWA's 2005 UWMP Chapter 4, Recycled Water.

[4] Demands are for uses within the existing CLWA service area. Demands for any annexations to the CLWA service area are not included.

[5] A 10 percent reduction on urban portion of total normal demand is estimated to result from conservation best management practices, as discussed in CLWA's 2005 UWMP, Chapter 7.

Source: Landmark Village Revised WSA (April 2009)

effects of an estimated 10 percent urban reduction resulting from the implementation of conservation Best Management Practices.

Single-Dry Year. Table 4.3-8 shows the existing and planned water supplies available to meet demands for the CLWA service area over the 20-year planning period, during a single-dry year. The SWP supplies projected to be available in a single-dry year are based on a repeat of the worst-case hydrologic conditions that occurred in California in 1977. Demand during dry years was estimated to increase by 10 percent.

Multiple-Dry Years. Table 4.3-9 shows the existing and planned water supplies available to meet demands for the CLWA service area over the 20-year planning period, during multiple-dry years. The multiple-dry year is based on a repeat of the worst-case four-year drought in California from 1931-1934. Demand during multiple-dry years was estimated to increase by 10 percent.

As shown on each table, SWP supply estimates are based on the data presented in the DWR 2007 Delivery Reliability Report (August 2008), with SWP water supplies allocated among SWP Contractors in accordance with their water supply contract provisions currently in effect.[16]

4.3.4.3.3 Additional Annual Imported Water Supplies

According to CLWA, as shown on **Tables 4.3-6 through 4.3-9**, the following existing additional annual water supplies are available to meet demands when necessary.

[16] The water supply contracts between DWR and the SWP Contractors include provisions regarding how total available SWP water supplies are allocated among SWP Contractors. The allocation provisions currently in effect are as they were amended by the Monterey Amendments. The Monterey Amendments have been in effect for more than ten years, but pursuant to litigation, is undergoing a second environmental review by DWR. In October 2007, DWR released the new Draft EIR analyzing the Monterey Amendments to the SWP contracts, including Kern water bank transfers and associated actions as part of the Monterey Settlement Agreement (SCH No. 2003011118). This Draft EIR, also known as the Monterey Plus Draft EIR, addresses the significant environmental impacts of changes to the SWP operations that are a consequence of the Monterey Amendments and the Monterey Settlement Agreement. It also discusses the project alternatives, growth inducement, water supply reliability, as well as potential areas of controversy and concern. See *Monterey Plus Draft EIR*, California Department of Water Resources, available online at http://www.des.water.ca.gov/mitigation_restoration_branch/rpmi_section/projects/EIR_index.cfm (last visited April 4, 2009). The Monterey Plus Draft EIR is incorporated by reference in this EIS/EIR, and available for public review and inspection at the County of Los Angeles Public Library, Valencia Branch, 23743 West Valencia Boulevard, Santa Clarita, California 91355-2191.

Table 4.3-8
Projected Single-Dry Year Supplies and Demands

Water Supply Sources	Supply (af)				
	2010	2015	2020	2025	2030
Existing Supplies					
Wholesale (Imported)	24,567	24,767	23,587	23,887	23,987
SWP Table A Supply[1]	5,900	6,100	6,300	6,600	6,700
Buena Vista-Rosedale	11,000	11,000	11,000	11,000	11,000
Nickel Water - Newhall Land	1,607	1,607	1,607	1,607	1,607
Flexible Storage Account (CLWA)	4,680	4,680	4,680	4,680	4,680
Flexible Storage Account (Ventura County)[2]	1,380	1,380	0	0	0
Local Supplies					
Groundwater	47,500	47,500	47,500	47,500	47,500
Alluvial Aquifer	32,500	32,500	32,500	32,500	32,500
Saugus Formation	15,000	15,000	15,000	15,000	15,000
Recycled Water	1,700	1,700	1,700	1,700	1,700
Total Existing Supplies	73,767	73,967	72,787	73,087	73,187
Existing Banking Programs					
Semitropic Water Bank[3]	17,000	0	0	0	0
Rosedale-Rio Bravo[5]	20,000	20,000	20,000	20,000	20,000
Semitropic Water Bank – Newhall Land[10]	4,950	4,950	4,950	4,950	4,950
Total Existing Banking Programs	41,950	24,950	24,950	24,950	24,950
Planned Supplies					
Local Supplies					
Groundwater	10,000	10,000	20,000	20,000	20,000
Restored wells (Saugus Formation)	10,000	10,000	10,000	10,000	10,000
New Wells (Saugus Formation)	0	0	10,000	10,000	10,000
Recycled Water - CLWA[4]	0	1,600	6,300	11,000	15,700
Recycled Water - Newhall Ranch	0	1,500	2,500	3,500	5,400
Total Planned Supplies	10,000	13,100	28,800	34,500	41,100
Planned Banking Programs					
Additional Planned Banking[6]	0	20,000	20,000	20,000	20,000
Total Planned Banking Programs	0	20,000	20,000	20,000	20,000
Total Existing and Planned Supplies and Banking	125,717	132,017	146,537	152,537	159,237
Total Estimated Demand (w/o conservation)[7, 8]	110,100	120,300	128,900	141,200	152,100
Conservation[9]	(9,500)	(10,700)	(11,700)	(13,100)	(14,200)
Total Adjusted Demand	100,600	109,600	117,200	128,100	137,900

[1] SWP 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 Tables 6-5 and 6-14 of DWR's "State Water Project Delivery Reliability Report 2007". Year 2030 figure is calculated by multiplying by DWR's 2027 percentage of 7%.

[2] Initial term of the Ventura County entities' flexible storage account is ten years (from 2006 to 2015).

[3] The total amount of water currently in storage is 50,870 af, available through 2013. Withdrawals of up to this amount are potentially available in a dry year, but given possible competition for withdrawal capacity with other Semitropic banking partners in extremely dry years, it is assumed here that about one third of the total amount stored could be withdrawn.

[4] Recycled water supplies based on projections provided in CLWA's 2005 UWMP Chapter 4, Recycled Water.

[5] CLWA has 64,900 af of recoverable water as of 12/31/07 in the Rosedale-Rio Bravo Water Banking and Recovery Program.

[6] Assumes additional planned banking supplies available by 2014.

[7] Assumes increase in total demand of 10 percent during dry years.

[8] Demands are for uses within the existing CLWA service area. Demands for any annexations to the CLWA service area are not included.

[9] A 10 percent reduction on urban portion of total normal year demand is estimated to result from conservation best management practices ([urban portion of total normal year demand x 1.10] * 0.10), as discussed in CLWA's 2005 UWMP, Chapter 7.

[10] Delivery of stored water from the Newhall Land Semitropic Groundwater Bank requires further agreements between CLWA and Newhall.

[11] In 2008, CLWA also acquired approximately 850 af of non-SWP water supply by entering into a water transfer agreement with Yuba County Water Agency (YCWA); however, CLWA has not yet updated its water supplies/demand tables to reflect this additional non-SWP supply.

Source: Landmark Village Revised WSA (April 2009)

Table 4.3-9
Projected Multiple-Dry Year Supplies and Demands[1]

Water Supply Sources	Supply (af)				
	2010	2015	2020	2025	2030
Existing Supplies					
Wholesale (Imported)	47,017	46,317	45,277	44,477	44,277
SWP Table A Supply[2]	32,900	32,200	31,500	30,700	30,500
Buena Vista-Rosedale	11,000	11,000	11,000	11,000	11,000
Nickel Water - Newhall Land	1,607	1,607	1,607	1,607	1,607
Flexible Storage Account (CLWA)[3]	1,170	1,170	1,170	1,170	1,170
Flexible Storage Account (Ventura County)[3]	340	340	0	0	0
Local Supplies					
Groundwater	47,500	47,500	47,500	47,500	47,500
Alluvial Aquifer	32,500	32,500	32,500	32,500	32,500
Saugus Formation[4]	15,000	15,000	15,000	15,000	15,000
Recycled Water	1,700	1,700	1,700	1,700	1,700
Total Existing Supplies	96,217	95,517	94,477	93,677	93,477
Existing Banking Programs					
Semitropic Water Bank[3]	12,700	0	0	0	0
Rosedale-Rio Bravo[6, 7]	5,000	15,000	15,000	15,000	15,000
Semitropic Water Bank – Newhall Land[12]	4,950	4,950	4,950	4,950	4,950
Total Existing Banking Programs	22,650	19,950	19,950	19,950	19,950
Planned Supplies					
Local Supplies					
Groundwater	6,500	6,500	6,500	6,500	6,500
Restored wells (Saugus Formation)[4]	6,500	6,500	5,000	5,000	5,000
New Wells (Saugus Formation)[4]	0	0	1,500	1,500	1,500
Recycled Water[5]	0	1,600	6,300	11,000	15,700
Recycled Water - Newhall Ranch	0	1,500	2,500	3,500	5,400
Total Planned Supplies	6,500	9,600	15,300	21,000	27,600
Planned Banking Programs					
Additional Planned Banking[7, 8]	0	5,000	15,000	15,000	15,000
Total Planned Banking Programs	0	5,000	15,000	15,000	15,000
Total Existing and Planned Supplies and Banking	125,367	130,067	144,727	149,627	156,027
Total Estimated Demand (w/o conservation)	110,100	120,300	128,900	141,200	152,100
Conservation[11]	(9,500)	(10,700)	(11,700)	(13,100)	(14,200)
Total Adjusted Demand	100,600	109,600	117,200	128,100	137,900

[1] Supplies shown are annual averages over four consecutive dry years (unless otherwise noted).
[2] SWP supplies are calculated by multiplying CLWA's Table A Amount of 95,200 af by percentages of average deliveries projected to be available during the worst case four-year drought of 1931-1934 as provided in Tables 6-5 and 6-14 of DWR's "State Water Project Delivery Reliability Report 2007." Year 2030 figure is calculated by multiplying by DWR's 2027 percentage of 32%.
[3] Based on total storage amount available ÷ by 4-yr dry pd.). Initial term of the Ventura County entities' flexible storage account is 10 years (2006-2015).
[4] Total Saugus pumping is the avg. annual amount that would be pumped under the groundwater operating plan summarized in Table 3-6, 2005 UWMP.
[5] Recycled water supplies based on projections provided in CLWA's 2005 UWMP Chapter 4, Recycled Water.
[6] CLWA has 64,900 af of recoverable water as of 12/31/07 in the Rosedale-Rio Bravo Water Banking and Recovery Program.
[7] Average dry year period supplies could be up to 20,000 af for each program depending on storage amounts at the beginning of the dry period.
[8] Assumes additional planned banking supplies available by 2014.
[9] Assumes increase in total demand of 10 percent during dry years.
[10] Demands are for uses within the existing CLWA service area. Demands for any annexations to the CLWA service area are not included.
[11] A 10 percent reduction on urban portion of total normal year demand is estimated to result from conservation best management practices ([urban portion of total normal year demand x 1.10] * 0.10), as discussed in CLWA's 2005 UWMP, Chapter 7.
[12] Delivery of stored water from the Newhall Land Semitropic Groundwater Bank requires further agreements between CLWA and Newhall.
[13] In 2008, CLWA also acquired approximately 850 af of non-SWP water supply by entering into a water transfer agreement with Yuba County Water Agency (YCWA); however, CLWA has not yet updated its water supplies/demand tables to reflect this additional non-SWP supply.
Source: Landmark Village Revised WSA (April 2009)

Buena Vista/Rosedale-Rio Bravo Water Acquisition Project. CLWA has finalized a Water Acquisition Agreement with the Buena Vista and the Rosedale-Rio Bravo districts in Kern County. Under this program, Buena Vista's high flow Kern River entitlements (and other acquired waters that may become available) are captured and recharged within Rosedale-Rio Bravo's service area on an ongoing basis. CLWA will receive 11,000 af per year of these supplies annually either through direct delivery of water to the California Aqueduct via the Cross Valley Canal or by exchange of Buena Vista's and Rosedale-Rio Bravo's SWP supplies.[17]

Nickel Water. The Newhall Ranch Revised Additional Analysis (Volume VIII, May 2003) provides that the Specific Plan applicant has secured 1,607 af of water under contract with Nickel Family LLC in Kern County. This water supply is 100 percent reliable on a year-to-year basis and not subject to the annual fluctuations that can occur to the SWP in dry-year conditions. The Nickel water is part of a 10,000 acre-foot quantity of annual water supply that Nickel obtained from Kern County Water Agency ("KCWA") in 2001 pursuant to an agreement between Nickel, KCWA and Olcese Water District ("Olcese"). Under that agreement, Nickel has the right to sell the 10,000 AFY to third parties both within or outside Kern County. This additional supply was added by CLWA to the updated water supply/demand tables to reflect current information (see **Tables 4.3-6 through 4.3-9**).

4.3.4.3.4 Additional Imported Water Supplies from Banking Programs

According to CLWA, as shown on **Tables 4.3-6**, **4.3-8**, and **4.3-9**, the following existing additional water supplies are available from banking programs to meet demands when necessary.

Flexible Storage Accounts. One of CLWA's Flexible Storage Accounts described in its 2005 UWMP permits it to store up to 4,684 af in Castaic Lake. Any of this amount that CLWA withdraws must be replaced by CLWA within five 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 portions of it) during dry periods. The account is refilled during the next year that adequate SWP supplies are available to CLWA to do so. CLWA also has recently negotiated with Ventura County water agencies to obtain the use of its Flexible Storage Account. This will allow CLWA access to another 1,376 af of storage in Castaic Lake. CLWA's access to this additional storage is available on a year-to-year basis for ten years, beginning in 2006.

Semitropic Water Storage District Banking. The 2005 UWMP identifies two existing contracts with the Semitropic Water Storage District under which CLWA has stored 59,000 acre-feet of water. (2005 UWMP, p. 3-22.) In accordance with the terms of CLWA's storage agreements with Semitropic, 90 percent of the banked amount, or a total of 50,870 af, is recoverable through 2012-2013 to meet CLWA water demands when needed. CLWA's approval of one of the contracts (for the 2002 banking program) was challenged in *California Water Network v. Castaic Lake Water Agency*, Ventura Superior Court Case No. CIV 215327. The trial court entered judgment in favor of CLWA. This ruling was appealed. All

[17] Please refer to footnote 6, above.

issues regarding the 2002 banking program with Semitropic were conclusively resolved in favor of CLWA in June 2006.

Rosedale-Rio Bravo Water Banking. The 2005 UWMP identifies one existing contract with the Rosedale-Rio Bravo Water Storage District under which CLWA has 64,900 af of recoverable water as of December 31, 2007. (2005 UWMP, p. 3-23.) This banking program currently offers storage and pump-back capacity of 20,000 afy, with up to 100,000 af of storage capacity. This stored water will be called upon to meet demands when required and is recoverable through 2035.

Newhall Land - Semitropic Water Storage District Banking. The Newhall Land and Farming Company applicant has entered into an agreement to reserve and purchase water storage capacity of up to 55,000 af in the Semitropic Water Storage District Groundwater Banking Project (Newhall Ranch Revised Additional Analysis [Volume VIII, May 2003]). Sources of water that could be stored include, but are not limited to, the Nickel Water. The stored water could be extracted in dry years in amounts up to 4,950 afy. As of December 31, 2007, there is 18,828 af of water stored in the Semitropic Groundwater Storage Bank by the Specific Plan applicant for the Specific Plan. Newhall Ranch is located within the CLWA service area. Delivery of stored water from the Newhall Semitropic Groundwater Bank requires further agreements between CLWA and the Specific Plan applicant. However, the Nickel water would only be needed on the Specific Plan site in years when all of the Newhall agricultural water has been used, which is estimated to occur after the 21st year of project construction. As a result, there is more than ample time for CLWA and the applicant to arrive at the necessary delivery arrangements and related agreements.

The 2005 UWMP also discusses water banking storage and pumpback capacity both north and south of CLWA's service area, the latter of which would provide an emergency supply in case of catastrophic outage along the California Aqueduct. With short-term storage now in place in the Semitropic banking program and long-term storage now existing with Rosedale-Rio Bravo, CLWA is assessing southern water banking opportunities. Such banking programs enhance the reliability of both existing and planned future water supplies in the Santa Clarita Valley. As shown on **Tables 4.3-8** and **4.3-9**, CLWA's additional planned banking supplies are anticipated to be 20,000 acre-feet by 2014.

4.3.4.3.5 CLWA Recycled Water

As shown on **Tables 4.3-6 through 4.3-9**, above, 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 Los Angeles County Sanitation District for 1,700 afy of recycled water. This supply is available in an average/normal year, a single-dry year, and in each year of a multiple-dry year period.

In addition, in the 2005 UWMP, CLWA projects an increase of 15,700 afy in recycled water by 2030. Similar to the existing recycle water supply, the 15,700 afy of planned recycled water supply is to be available in an average/normal year, a single-dry year, and in each year of a multiple-dry year period.

As the Specific Plan is developed, recycled water also will be available to the Specific Plan from the Newhall Ranch WRP. Water from the Newhall Ranch WRP would be used to meet the non-potable

demands of the Specific Plan. Areas that would use recycled water include common areas, slopes, landscaped areas, and parks.

4.3.4.3.6 CLWA Service Area Water Demand

Table 4.3-10 shows CLWA's 2010 and projected water demands based on the 2005 UWMP and other information provided by CLWA. CLWA's demands vary from year-to-year depending on local hydrologic and meteorologic conditions, with demands generally increasing in years of below average local precipitation and decreasing in years of above average local precipitation.

In 2001, CLWA signed the Memorandum of Understanding Regarding Urban Water Conservation in California (MOU) on behalf of the CLWA service area. By signing the MOU, CLWA became a member of the California Urban Water Conservation Council (CUWCC) and pledged to implement all cost-effective Best Management Practices (BMPs) for water conservation. CLWA has estimated that conservation measures within the service area can reduce the urban demand water demand by 10 percent. The BMPs include:

- System Water Audits, Leak Detection and Repair; Public Information Programs; School Education Programs;
- Wholesale Agency Programs;
- Conservation Pricing;
- Water Conservation Coordinator;
- Water survey programs for single-family residential and multi-family residential customers;
- System water audits, leak detection and repair;
- Metering with commodity rates for all new connections and retrofit of existing connections;
- Large landscape conservation programs and incentives;
- High-efficiency clothes washing machine financial incentive programs;
- Conservation programs for commercial, industrial, and institutional (CII) accounts; and
- Water waste prohibition.

Table 4.3-10
CLWA's Projected Water Demands

	Demand (af)				
	2010	**2015**	**2020**	**2025**	**2030**
All Purveyors[1]	86,100	97,100	106,500	119,400	129,300
Agricultural/Private Uses	13,950	12,300	10,650	9,000	9,000
Conservation[2]	-8,610	-9,710	-10,650	-11,940	-12,930
Total (w/conservation)	91,440	99,690	106,500	116,460	125,370

Notes:

[1] Purveyors refer to CLWA SCWD, NCWD, VWC, and Los Angeles County Waterworks District No. 36.

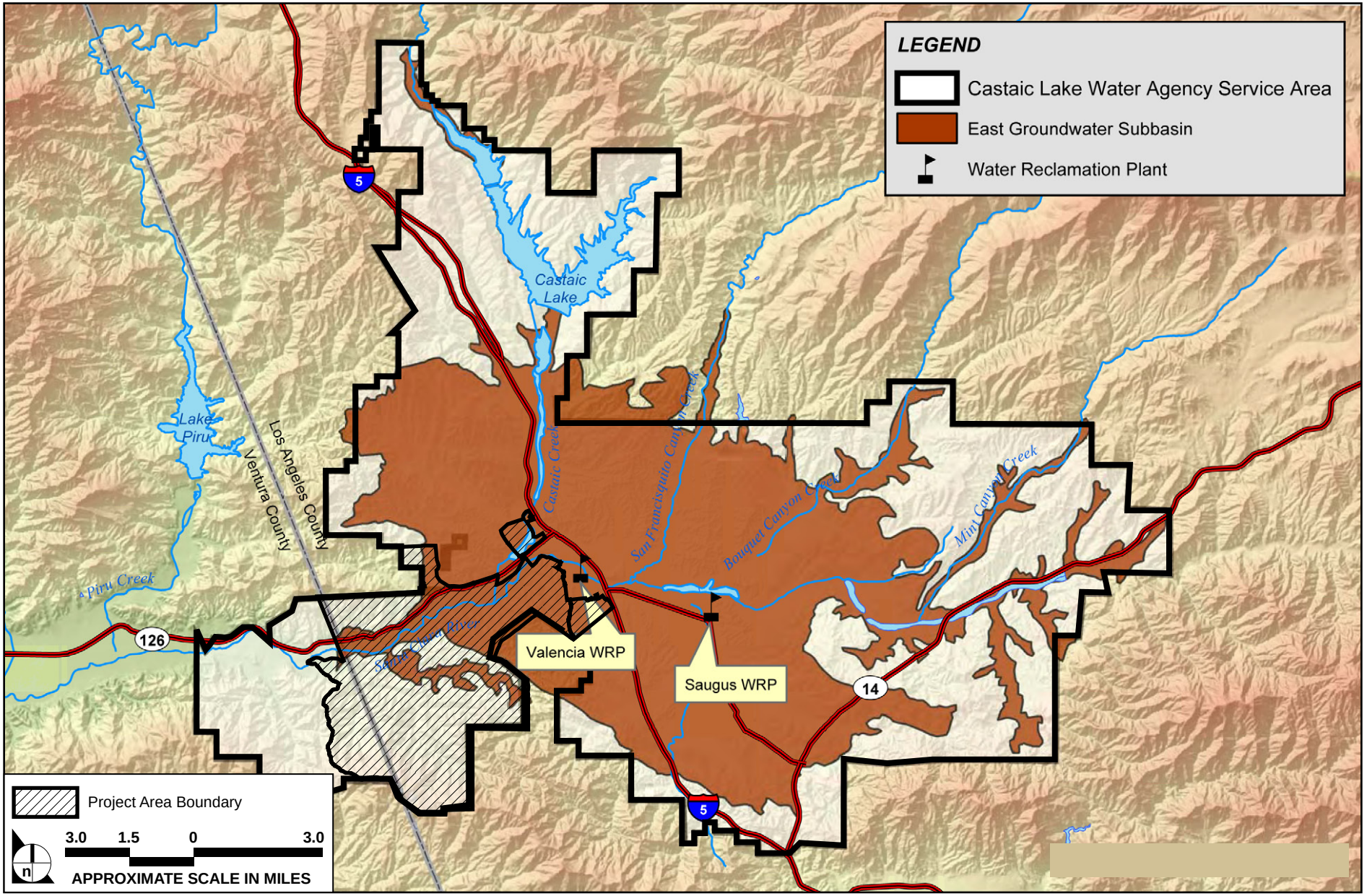
[2] A 10 percent reduction on the urban portion of the normal year demand is estimated to result from conservation BMPs.

Source: CLWA (October 2008)

4.3.4.4 Description of Groundwater Supplies

The Project area lies within the groundwater basin identified in DWR Bulletin 118 (2003 Update) as the Santa Clara River Valley Groundwater Basin, East Subbasin (Basin). The Basin is comprised of two aquifer systems, the Alluvium (also referred to as the Alluvial aquifer) and the Saugus Formation. The Alluvium generally underlies the Santa Clara River and its several tributaries, and the Saugus Formation underlies practically the entire Upper Santa Clara River area. There are also some scattered outcrops of terrace deposits in the Basin that likely contain limited amounts of groundwater. Since these deposits are located in limited areas situated at elevations above the regional water table and are also of limited thickness, they are of no practical significance as aquifers and, consequently, have not been developed for any significant water supply. **Figure 4.3-4** illustrates the mapped extent of the Santa Clara River Valley East Subbasin, which approximately coincides with the outer extent of the Alluvium and Saugus Formation. The CLWA service area and the location of the two existing WRPs in the Valley also are shown on **Figure 4.3-4**.

Groundwater Operating Plan. The groundwater component of overall water supply in the Santa Clarita Valley derives from a groundwater operating plan developed by CLWA and the local retail purveyors over the past 20 years to meet water requirements (municipal, agricultural, small domestic), while maintaining the Basin in a sustainable condition (*i.e.*, no long-term depletion of groundwater or interrelated surface water). This operating plan also addresses groundwater contamination issues in the Basin, all consistent with both the GWMP and the MOU described above. This 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, and to collectively assure that the Basin is adequately replenished through various wet/dry cycles. As described in the GWMP and the MOU, the operating yield concept has been quantified as ranges of annual pumping volumes.



SOURCE: Luhdorff & Scalmanini Consulting Engineers – January 2006

FIGURE **4.3-4**

Santa Clara River Valley East Groundwater Basin – East Subbasin

The ongoing work of the MOU has produced two important reports. The first report, dated April 2004, documents the development and calibration of the groundwater flow model for the Santa Clarita Valley.[18] The second report, dated August 2005, presents the modeling analysis of the CLWA/retail water purveyor groundwater operating plan for the Valley, and concludes that the plan will not cause detrimental short or long-term effects to the groundwater and surface water resources in the Valley and, therefore, the plan is a reliable, sustainable component of water supply for the Valley.[19] The analysis of sustainability for groundwater and interrelated surface water is described further in Appendix C to the 2005 UWMP (see EIS/EIR, **Appendix 4.3**, for the 2005 UWMP).

The groundwater operating plan, summarized in **Table 4.3-11**, is further described below. The operating plan addresses both the Alluvium and Saugus Formation.

Table 4.3-11
Groundwater Operating Plan For The Santa Clarita Valley

	Groundwater Production (af)			
Aquifer	**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: 2005 UWMP and 2007 Santa Clarita Valley Water Report (April 2008)

Alluvium. As stated in the 2005 UWMP and the 2007 Santa Clarita Valley Water Report (2007 Water Report), the operating plan for the Alluvial aquifer involves pumping from the Alluvial aquifer 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 during locally dry years.[20]

Saugus Formation. As stated in the 2005 UWMP and 2007 Water Report, pumping from the Saugus Formation in a given year is tied directly to the availability of other water supplies, particularly from the SWP. During average year conditions within the SWP system, Saugus pumping ranges between 7,500

[18] See, Regional Groundwater Flow Model for the Santa Clarita Valley: Model Development and Calibration, prepared for the Upper Basin Water Purveyors by CH2MHill, April 2004. This report was updated by CH2MHill in a report entitled, Calibration Update of the Regional Groundwater Flow Model for the Santa Clarita Valley, Santa Clarita, California, August 2005. Copies of these two reports are found in **Appendix 4.3** of this EIS/EIR.

[19] See, Analysis of Groundwater Basin Yield, Upper Santa Clara River Groundwater Basin, East Subbasin, Los Angeles County, California, prepared by CH2MHill in cooperation with Luhdorff & Scalmanini Consulting Engineers, August 2005. This report is found in **Appendix 4.3** of this EIS/EIR.

[20] See, the EIS/EIR, **Appendix 4.3**, for the 2007 Santa Clarita Valley Water Report (April 2008).

and 15,000 afy. Planned dry-year pumping from the Saugus Formation 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 would be 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 would recover water levels and groundwater storage volumes after the higher pumping during dry years.

For reference to the groundwater operating plan historical and projected groundwater pumping by retail water purveyor, please refer to **Tables 4.3-12** and **4.3-13**, below.

Table 4.3-12
Historical Groundwater Production by Retail Water Purveyor

Santa Clara River Valley East Subbasin	Groundwater Pumped (af)[1]						
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
CLWA Santa Clarita Water Division							
Alluvium	9,896	9,513	6,424	7,146	12,408	13,156	10,686
Saugus Formation	0	0	0	0	0	0	0
LA County Waterworks District #36							
Alluvium	0	0	0	380	343	0	0
Saugus Formation	0	0	0	0	0	0	0
Newhall County Water District							
Alluvium	1,641	981	1,266	1,582	1,389	2,149	1,806
Saugus Formation	2,432	3,395	2,513	3,739	3,435	3,423	3,691
Valencia Water Company							
Alluvium	10,518	11,603	11,707	9,862	12,228	11,884	13,140
Saugus Formation	835	965	1,068	1,962	2,513	2,449	2,367
Total	25,322	26,457	22,978	24,671	32,316	33,061	31,690
Alluvium	22,055	22,097	19,397	18,970	26,368	27,189	25,632
Saugus Formation	3,267	4,360	3,581	5,701	5,948	5,872	6,058
% of Total Municipal Water Supply	42%	39%	34%	34%	46%	45%	35%

Notes:

1 Pumping for municipal and industrial uses only; does not include pumping for agricultural and miscellaneous uses.

Source: 2007 Santa Clarita Valley Water Report (April 2008), Tables II-2 - II-5.

Table 4.3-13
Projected Groundwater Production (Normal Year)

	Range of Groundwater Pumping (af)[1,2,3]				
Santa Clara River Valley East Subbasin	**2010**	**2015**	**2020**	**2025**	**2030**
CLWA Santa Clarita Water Division					
Alluvium	6,000-14,000	6,000-14,000	6,000-14,000	6,000-14,000	6,000-14,000
Saugus Formation	3,000	3,000	3,000	3,000	3,000
LA County Waterworks District #36					
Alluvium		0	0	0	0
Saugus Formation	500-1,000	500-1,000	500-1,000	500-1,000	500-1,000
Newhall County Water District					
Alluvium	1,500-3,000	1,500-3,000	1,500-3,000	1,500-3,000	1,500-3,000
Saugus Formation	3,000-6,000	3,000-6,000	3,000-6,000	3,000-6,000	3,000-6,000
Valencia Water Company					
Alluvium	12,000-20,000	12,000-20,000	12,000-20,000	12,000-20,000	12,000-20,000
Saugus Formation	2,500-5,000	2,500-5,000	2,500-5,000	2,500-5,000	2,500-5,000

Notes:

[1] The range of groundwater production capability for each purveyor varies based on a number of factors, including each purveyor's capacity to produce groundwater, the location of its wells within the Alluvium and Saugus Formation, local hydrology, availability of imported water supplies, and water demands.

[2] To ensure sustainability, the purveyors have committed that the annual use of groundwater pumped collectively in any given year will not exceed the purveyors' operating plan as described in the Basin Yield Study and reported annually in the Santa Clarita Valley Water Report. As noted in the discussion of the purveyors' operating plan for groundwater in Table 3-6 of the 2005 UWMP, the "normal" year quantities of groundwater pumped from the Alluvium and Saugus Formation are 30,000 to 40,000 afy and 7,500 to 15,000 afy, respectively.

[3] Groundwater pumping shown for purveyor municipal and industrial uses only.

Source: 2005 UWMP

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) protection of groundwater sources (wells) 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 Chapter 5 and Appendices C and D to the 2005 UWMP (see EIS/EIR, **Appendix 4.3**, for the 2005 UWMP).

Alluvial Aquifer. Based on a combination of historical operating experience and recent 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 and an estimated pumping of up to about 500 afy by small private pumpers. 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.

Background. Total pumping from the Alluvium in 2007 was about 38,800 acre-feet (af), a decrease of about 4,200 af from the preceding year. Approximately 7,700 af was pumped from the underlying, deeper Saugus Formation, which was slightly higher than in 2006 by about 400 af. Neither pumping volume resulted in any notable overall change in groundwater conditions (water levels, water quality, etc.) in either aquifer system. Total water requirements in 2007 were met by a combination of about 46,500 af from local groundwater resources (about 31,700 af for municipal and about 1,400 af for agricultural and other uses), about 45,300 af of SWP and other imported water, and about 470 af of recycled water.

In a longer-term context, there has been a change in municipal/agricultural pumping distribution since SWP deliveries began in 1980, toward a slightly higher fraction for municipal water supply, which reflects the general land use changes in the area. Ultimately, on a long-term average basis since the importation of SWP water, total Alluvial pumping has been almost 31,500 afy, which is at the lower end of the range of operational yield of the Alluvium. The overall historic record of Alluvial pumping is illustrated in Figure III-2 of the 2007 Water Report.

Groundwater levels in various parts of the basin have historically exhibited different responses to both pumpage and climatic fluctuations. During the last 20 to 30 years, depending on location, Alluvial groundwater levels have remained nearly constant (generally toward the western end of the basin), or have fluctuated from near the ground surface when the basin is full, to as much as 100 feet lower during intermittent dry periods of reduced recharge (generally toward the eastern end of the basin). For illustration of the various groundwater level conditions, the Alluvial wells have been grouped into areas with similar groundwater level patterns as illustrated in Figure III-3 of the 2007 Water Report. Figures III-4 and III-5 of the 2007 Water Report present historical groundwater levels organized into hydrograph form (groundwater elevation v. time) for four areas throughout the basin. The other areas shown in Figure III-3 exhibit groundwater level responses that are similar to those illustrated in the four areas.

The "Mint Canyon" area, located at the far eastern end of the groundwater basin, and the nearby "Above Saugus WRP" and "Bouquet Canyon" areas generally exhibit similar groundwater level responses. Those parts of the Alluvium have historically experienced a number of alternating wet and dry hydrologic

conditions (2007 Water Report, Figure III-4) during which groundwater level declines have been followed by returns to historic highs. When water levels are low, well yields and pumping capacities in this area can be impacted. The affected purveyors typically respond by increasing use of Saugus Formation and imported SWP supplies, as shown in Table II-8 of the 2007 Water Report. The purveyors also shift a fraction of the Alluvial pumping that would normally be supplied by "Mint Canyon" area wells to areas further west, where well yields and pumping capacities remain fairly constant because of smaller groundwater level fluctuations. As shown in Figure III-6 of the 2007 Water Report, the purveyors decreased total Alluvial pumping from the "Mint Canyon" area steadily from 2000 through 2003, and correspondingly increased pumping in the "Below Saugus WRP" and "Below Valencia WRP" areas. In spite of a continued period of below-average precipitation from 1999 to 2003, that progressive decrease in pumping resulted in a cessation of groundwater level decline in the "Mint Canyon" area in 2002 and 2003. Subsequently, wet conditions in late 2004, continuing into 2005, resulted in full recovery of groundwater storage. With such high groundwater levels, pumping in the "Mint Canyon" area was increased in 2005 and further increased in 2006, with no significant change in groundwater levels in 2005 and a slight decrease in 2006.

The "Below Saugus WRP" area (2007 Water Report, Figure III-4), along the Santa Clara River immediately downstream of the Saugus WRP, and the "San Francisquito Canyon" area generally exhibit similar groundwater levels. In this middle part of the basin, historical groundwater levels were lower in the 1950s and 1960s than current levels. Groundwater levels in this area notably recovered as pumping declined through the 1960s and 1970s. They have subsequently sustained generally high levels for much of the last 30 years, with three dry-period exceptions: mid-1970s, late 1980s to early 1990s, and the late 1990s to early 2000s. Recoveries to previous high groundwater levels followed both of the short dry-period declines in the 1970s and 1990s. Most recently, groundwater levels recovered significantly following a wetter-than-average year in 2004 and significantly wet 2005. In 2007, groundwater levels remained largely unchanged in this area.

The "Castaic Valley" area is located along Castaic Creek below Castaic Lake. In that area, groundwater levels have remained fairly constant, with slight responses to climatic and other fluctuations, since the 1950s (2007 Water Report, Figure III-5). Small changes in groundwater levels in 2007 were consistent with other short-term historical fluctuations. The long-term, generally constant trend remained through 2007.

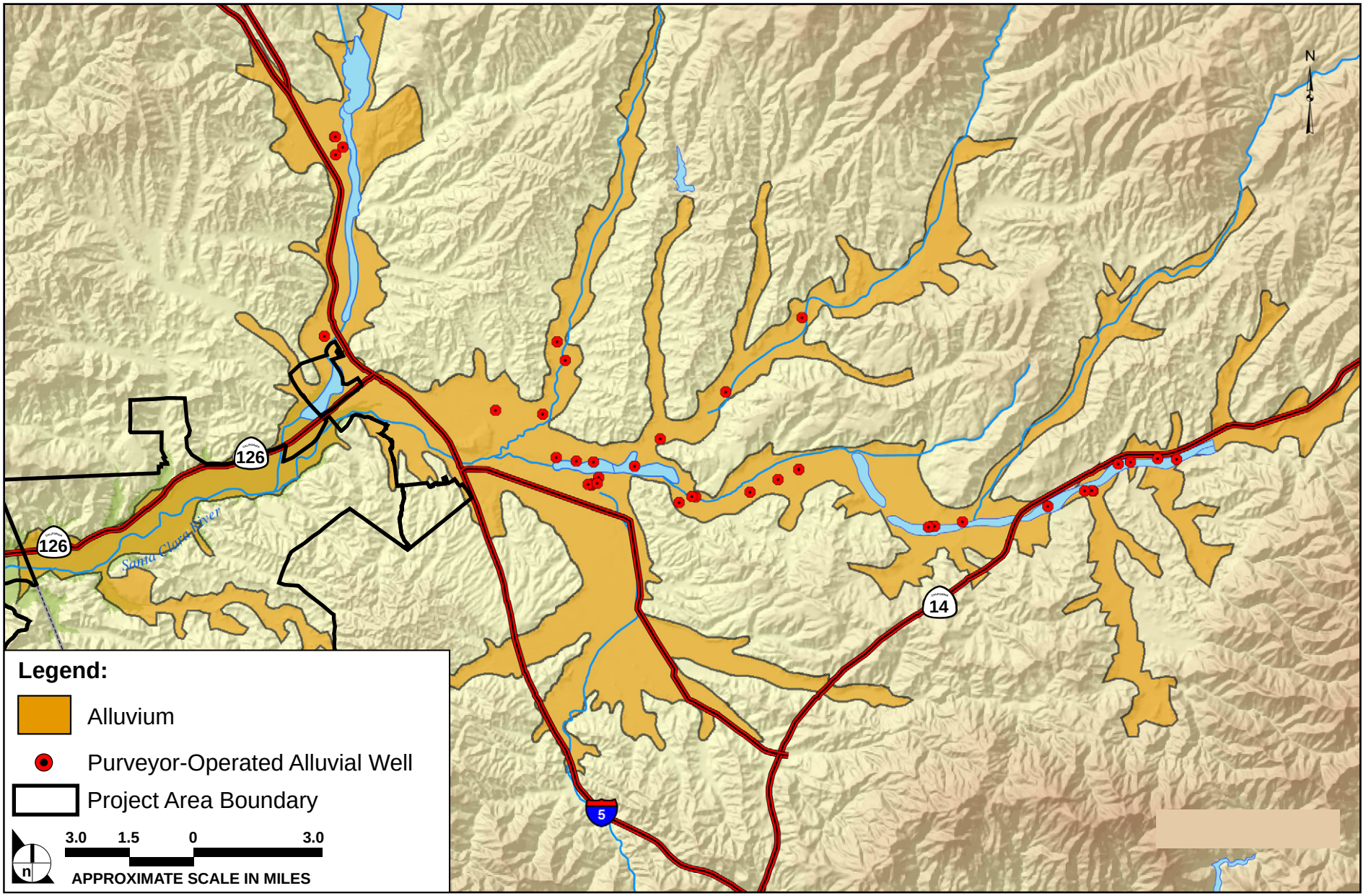
The "Below Valencia WRP" area is located along the Santa Clara River downstream of the Valencia WRP, where discharges of treated effluent from the Valencia WRP to the Santa Clara River contribute to groundwater recharge. Groundwater levels in this area exhibit slight, if any, response to climatic fluctuations, and have remained fairly constant since the 1950s despite, over the last 20 years, a notable increase in pumping that continued through 2007 in that area (2007 Water Report, Figure III-5 and III-6).

In summary, depending on the period of available data, all the history of groundwater levels in the Alluvium shows the same general picture: recent (last 30 years) groundwater levels have exhibited historic highs; in some locations, there are intermittent dry-period declines (resulting from use of some groundwater from storage) followed by wet-period recoveries (and associated refilling of storage space). On a long-term basis, whether over the last 27 years since importation of supplemental SWP water, or over the last 40 to 50 years (since the 1950s - 1960s), the Alluvium shows no signs of water level-related

overdraft (i.e., no trend toward decreasing water levels and storage). Consequently, pumping from the Alluvium has been and continues to be sustainable, well within the operational yield of that aquifer on a long-term average basis, and also within the operating yield in almost every individual year.

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 (not contaminated by perchlorate) of 36,120 gpm, which translates into a current full-time Alluvial source capacity of approximately 58,000 afy.[21] This is more than sufficient to meet the municipal (or urban) component of groundwater supply from the Alluvium, which is currently 20,000 to 25,000 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.) Alluvial pumping capacity from all the active municipal supply wells is summarized in **Table 4.3-14**. The locations of the various municipal Alluvial wells throughout the Basin are illustrated on **Figure 4.3-5**. These capacities do not include one Alluvial aquifer well that has been inactivated due to perchlorate contamination, the SCWD Stadium well, which represents another 800 gpm of pumping capacity, or full-time source capacity of about 1,290 afy.

[21] As stated, this figure includes the pumping capacity of VWC's Well Q2, which was returned to active service as a result of the permitting and installation of wellhead treatment that removes perchlorate pumped from the well to a non-detect level.



SOURCE: Luhdorff & Scalmanini Consulting Engineers – January 2006

FIGURE **4.3-5**

Municipal Alluvial Well Locations; Santa Clara River Valley, East Groundwater Subbasin

Table 4.3-14
Active Municipal Groundwater Source Capacity – Alluvial Aquifer Wells

Wells	Pump Capacity (gpm)	Max Annual Capacity (af)	Normal Year Production[1] (af)	Dry-Year Production (af)
NCWD				
Castaic 1	600	960	385	345
Castaic 2	425	680	166	125
Castaic 4	270	430	100	45
Pinetree 1	300	480	164	N/A
Pinetree 3	550	880	545	525
Pinetree 4	500	800	300	N/A
NCWD Subtotal	2,645	4,230	1,660	1,040
SCWD				
Clark	600	960	782	700
Guida	1,000	1,610	1,320	1,230
Honby	950	1,530	696	870
Lost Canyon 2	850	1,370	741	640
Lost Canyon 2A	825	1,330	1,034	590
Mitchell 5B	700	1,120	557	N/A
N. Oaks Central	1,000	1,610	822	1,640
N. Oaks East	950	1,530	1,234	485
N. Oaks West	1,400	2,250	898	N/A
Sand Canyon	750	1,200	930	195
Sierra	1,500	2,410	846	N/A
SCWD Subtotal	10,525	16,920	9,860	6,350
Valencia Water Co.				
Well D	1,050	1,690	690	690
Well E-15	1,400	2,260	N/A	N/A
Well N	1,250	2,010	620	620
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	985	985
Well S6	2,000	3,220	865	865
Well S7	2,000	3,220	865	865
Well S8	2,000	3,220	865	865
Well T7	1,200	1,930	970	970
Well U4	1,000	1,610	935	935
Well U6	1,250	2,010	825	825
Well W9	800	1,290	600	600
Well W10	1,500	2,410	865	865
Well W11	1,000	1,610	350	350
Valencia Subtotal	22,650	36,470	11,065	11,065
Total Purveyors	**35,8201**	**57,6202**	**22,5852**	**18,4552**

Notes:

1 Based on recent annual pumping.

2 Currently active wells only; capacity will slightly increase by restoration of perchlorate-contaminated wells.

Source: Valencia Water Company, 2008.

Sustainability. Until recently, the long-term renewability of Alluvial groundwater was empirically determined from approximately 60 years of recorded experience. This empirical data confirmed long-term 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. These empirical observations have been complemented by the development and application of a numerical groundwater flow model, which has been used to predict aquifer response to the planned operating ranges of pumping. The numerical groundwater flow model also has been used to analyze the control of perchlorate contaminant migration under selected pumping conditions that would restore, with treatment, pumping capacity inactivated due to perchlorate contamination detected in some wells in the Basin. The pumping conditions call for pumping two existing Saugus Formation wells up to 1,200 gpm each for a total of up to 2,400 gpm. For additional information, please see EIS/EIR, **Appendix 4.3** (Appendix D and Appendix E of the 2005 UWMP).

To examine the yield of the Alluvium or, the sustainability of the Alluvium on a renewable basis, the 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 and wet conditions, and in the 30,000 to 35,000 afy range under locally dry conditions. To examine the response of the entire aquifer system, the model also incorporated pumping from the Saugus Formation in accordance with the normal (7,500-15,000 afy) and dry year (15,000-35,000 afy) 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. The selected 78-year simulation period was assembled from an assumed recurrence of 1980 to 2003 conditions, followed by an assumed recurrence of 1950 to 2003 conditions. The 78-year period was analyzed to define both local hydrologic conditions (normal and dry), which affect the rate of pumping from the Alluvium, and hydrologic conditions that affect SWP operations, which in turn affect the rate of pumping from the Saugus. The resultant simulated pumping cycles included the distribution of pumping for each of the existing Alluvial aquifer wells, for normal and dry years, respectively, as shown in **Table 4.3-14**.

Simulated Alluvial aquifer response to the range of hydrologic conditions and pumping stresses is essentially a long-term repeat of the historical conditions that have resulted from similar pumping over the last several decades. The resultant response consists of: (1) 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; (2) variations in recharge that directly correlate with wet and dry hydrologic conditions; and (3) no long-term decline in groundwater levels or storage. The Alluvial aquifer is considered a sustainable water supply source to meet the Alluvial portion of the operating plan for the Basin. This is based on the combination of actual experience with Alluvial aquifer pumping at capacities similar to those planned for the future and the resultant sustainability (recharge) of groundwater levels and storage, and further based on modeled projections of aquifer response to planned pumping rates that also show no depletion of groundwater.

Aquifer Protection. After addressing the issues of pumping capacity and long-term sustainability of the Alluvial aquifer, the remaining key consideration related to current and future use of the Alluvium is the impact of perchlorate contamination. As of this writing, perchlorate has been detected in two Alluvial municipal-supply wells in the basin; however, wellhead treatment has been permitted and installed at one

of the two impacted wells, VWC's Well Q2. The treatment removes perchlorate pumped from the well to a non-detect level (the method reporting level approved by the Department of Public Health (DPH) for drinking water is 4 ppb). As discussed in the 2005 UWMP, Chapter 5 and Appendix D, there has been extensive investigation of the extent of perchlorate contamination which, in combination with the groundwater modeling previously described, led to the current plan for integrated control of contamination migration and restoration of impacted pumping (well) capacity in 2006.

The short-term response plan for the protection of other Alluvial wells, down-gradient from the former Whittaker-Bermite site, is to promptly install wellhead treatment to ensure adequate water supplies. This plan complements the longer-term source control actions being undertaken by the Whittaker-Bermite property owner under supervision of the Department of Toxic Substances Control (DTSC) to address perchlorate contamination in the northern Alluvium (to the north of the former Whittaker-Bermite site), and the subsequent restoration of the one other perchlorate-contaminated Alluvial well (Stadium well). The long-term plan also includes the CLWA groundwater containment, treatment and restoration project to prevent further downstream migration of perchlorate, the treatment of water extracted as part of the containment process, and the recovery of lost local groundwater production from the Saugus Formation.[22]

Saugus Formation. Based on historical operating experience and extensive recent testing and 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.

Background. Total pumping from the Saugus in 2007 was about 7,700 af, or about 400 af more than in the preceding year. Of the total Saugus pumping in 2007, most (nearly 6,000 af) was for municipal water supply, and the balance (about 1,700 af) was for agricultural and other irrigation uses. Historically, groundwater pumping from the Saugus peaked in the early 1990s and then steadily declined through the remainder of that decade. Since then, Saugus pumping had been in the range of about 4,000 to 6,500 afy, with the increase to about 7,700 af in 2007. On a long-term average basis since the importation of SWP water, total pumping from the Saugus Formation has ranged between a low of about 3,700 afy (in 1999) and a high of nearly 15,000 afy (in 1991); average pumping from 1980 to present has been about 6,700 afy. These pumping rates remain well within, and generally at the lower end of, the range of operational yield of the Saugus Formation. The overall historic record of Saugus pumping is illustrated in Figure III-8 of the 2007 Water Report.

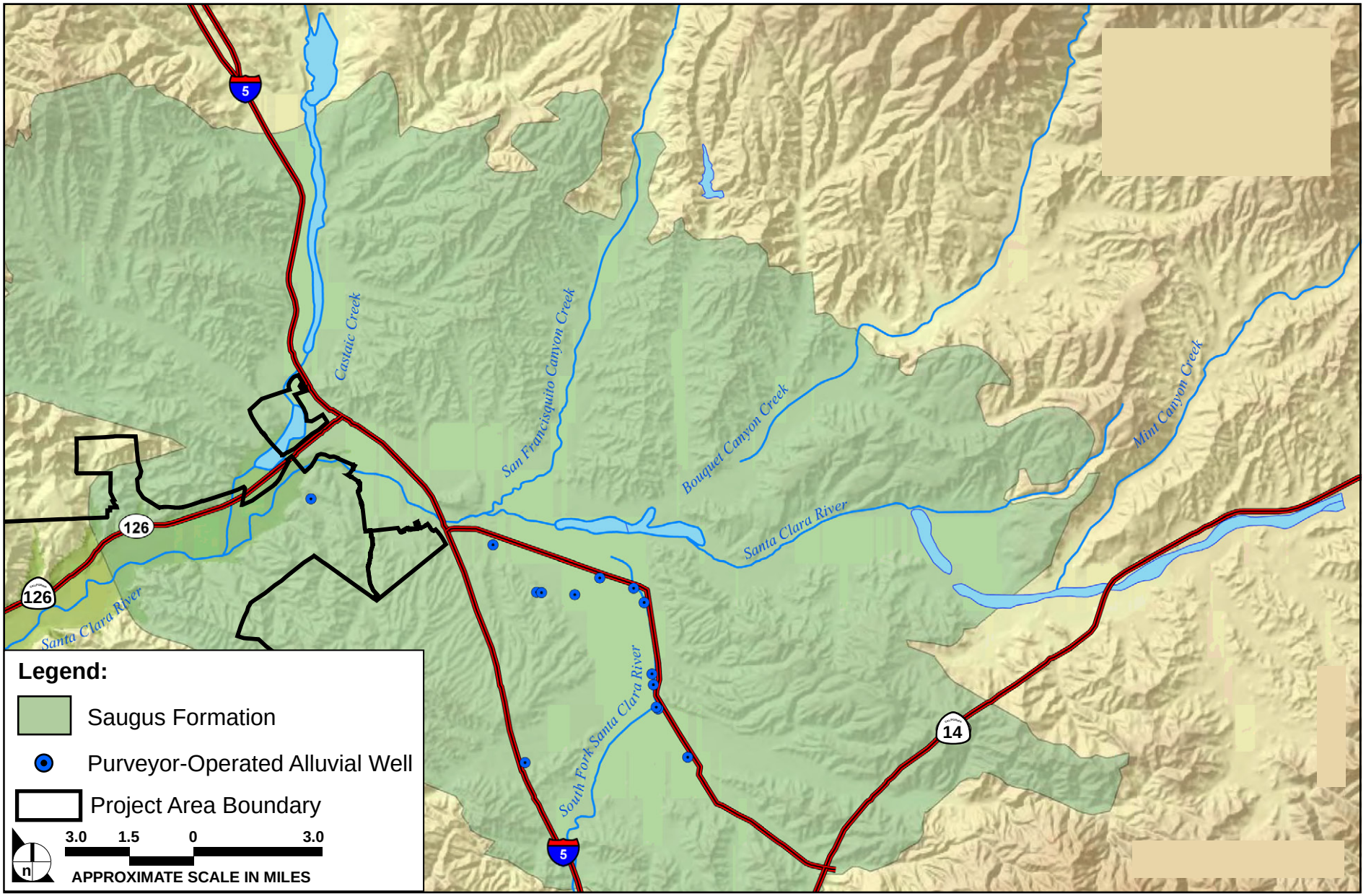
Unlike the Alluvium, which has an abundance of wells with extensive water level records, the water level data for the Saugus Formation are limited by both the distribution of the wells in that Formation and the periods of water level record. The wells that do have water level records extending back to the mid-1960s

[22] For further information regarding CLWA's groundwater containment, treatment and restoration project, please refer to Appendix E of the 2005 UWMP (see EIS/EIR, **Appendix 4.3**, for the 2005 UWMP).

indicate that groundwater levels in the Saugus Formation were highest in the mid-1980s and are currently higher than they were in the mid-1960s (2007 Water Report, Figure III-9). Based on these data, there is no evidence of any historic or recent trend toward permanent water level or storage decline.

Consistent with the 2001 Update Report (Slade), the 2005 Basin Yield Report (CH2MHill and Luhdorff and Scalmanini Consulting Engineers), and the 2005 UWMP, the management practice of the purveyors continues to be to maintain groundwater storage and associated water levels in the Saugus Formation so that supply is available during drought periods, when Alluvial pumping might be reduced and SWP supplies also could be decreased. The period of increased pumping during the early 1990s is a good example of this management strategy. Most notably, in 1991, when SWP deliveries were substantially reduced, increased pumping from the Saugus made up almost half of the decrease in SWP deliveries. The increased Saugus pumping over several consecutive dry years (1991-1994) resulted in short-term declining groundwater levels, reflecting the use of water from storage. However, groundwater levels subsequently recovered when pumping declined, reflecting recovery of groundwater storage in the Saugus Formation.

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 Saugus wells (not contaminated by perchlorate) of 14,900 gpm, which translates into a full-time Saugus source capacity of 24,000 afy. Saugus pumping capacity from all the active municipal supply wells is summarized in **Table 4.3-15**, and the locations of the various active municipal Saugus wells are illustrated on **Figure 4.3-6**. These capacities do not include the four Saugus wells contaminated by perchlorate, although they indirectly reflect the capacity of one of the contaminated wells, VWC's Well 157, which has been sealed and abandoned and replaced by VWC's Well 206 in a non-impacted part of the Basin. The four contaminated wells, one owned by NCWD and two owned by SCWD, in addition to the VWC well, represent a total of 7,900 gpm of pumping capacity (or full-time source capacity of about 12,700 afy) inactivated due to perchlorate contamination. The two SCWD Saugus Formation wells are closed due to perchlorate contamination. These wells will return to service as part of the pump and treat containment project planned to come on-line in 2009.



SOURCE: Luhdorff & Scalmanini Consulting Engineers – January 2006

FIGURE **4.3-6**

Saugus Well Locations; Santa Clara River Valley, East Groundwater Subbasin

Table 4.3-15
Active Municipal Groundwater Source Capacity – Saugus Formation Wells

Wells	Pump Capacity (gpm)	Max Annual Capacity (af)	Normal Year Production[1] (af)	Dry-Year Production (af)
NCWD				
12	2,300	3,700	1,315	2,044
13	2,500	4,030	1,315	2,044
NCWD Subtotal	4,800	7,730	2,630	4,088
Valencia Water Co.				
159	500	800	50	50
160	2,000	3,220	1,000	1,330
201	2,400	3,870	100	3,577
205	2,700	4,350	1,000	3,827
206	2,500	4,030	1,175	3,500
Valencia Subtotal	10,100	16,270	3,325	12,284
Total Purveyors	**14,900**	**24,000**[2]	**5,955**[2]	**16,372**

Notes:

[1] Based on recent annual pumping.

[2] Currently active wells only; additional capacity to meet dry-year operating plan would be met by restoration of contaminated wells and new well construction.

Source: Valencia Water Company, 2007.

In terms of adequacy and availability, the combined active Saugus groundwater source capacity of municipal wells of 24,000 afy, is more than sufficient to meet the planned use of Saugus groundwater in normal years of 7,500 to 15,000 afy. During the currently scheduled time frame for restoration of impacted Saugus capacity (as discussed further in Chapter 5 of the 2005 UWMP), this currently active capacity is more than sufficient to meet water demands, in combination with other sources, if the next two years are dry. At that time, the combination of currently active capacity and restored impacted capacity, through a combination of treatment at two of the impacted wells and replacement well construction, will provide sufficient total Saugus capacity to meet the planned use of Saugus groundwater during dry-years of between 21,500 af to 35,000 af (see **Tables 4.3-5** and **4.3-6**, above).

Sustainability. Until recently, the long-term sustainability of Saugus groundwater was empirically determined from limited historical experience. The historical record shows fairly low annual pumping in most years, with one four-year period of increased pumping up to about 15,000 afy that produced no long-term depletion of the substantial groundwater storage in the Saugus. Those empirical observations have now been complemented by the numerical groundwater flow model, which has been used to examine aquifer response to the operating plan and to examine the effectiveness of pumping for contaminant control within the Saugus Formation. The latter aspects of Saugus pumping are discussed in further detail in Chapter 5 of the 2005 UWMP (see EIS/EIR, **Appendix 4.3**, for the 2005 UWMP).

To examine the yield of the Saugus Formation or, its sustainability on a renewable basis, the 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 (purveyors believe that this period best represents potential variations in pumping). The pumping simulated in the model was in accordance with

the operating plan for the Basin. For the Saugus, simulated pumpage included the planned restoration of recent historic pumping from the perchlorate-impacted wells. In addition to assessing the overall recharge of the Saugus, that pumping was analyzed to assess the effectiveness of controlling the migration of perchlorate by extracting and treating contaminated water close to the source of contamination. For a discussion regarding the effects of climate change on water supplies, please see **Subsection 4.3.3.2.2**, Water Supply and Demand, above. In addition, please refer to this EIS/EIR, **Section 8.0**, Global Climate Change, and, specifically, the appendices to that section. The appendix contains the best available information on the subject of global climate change and its effects on California's water supplies.

Simulated Saugus Formation response to the ranges of pumping under assumed recurrent historical hydrologic conditions is consistent with actual experience under smaller pumping rates. The response consists of: (1) short-term declines in groundwater levels and storage near pumped wells during dry-period pumping; (2) rapid recovery of groundwater levels and storage after cessation of dry-period pumping; and (3) no long-term decreases or depletion of groundwater levels or storage. The combination of actual experience with Saugus pumping and recharge up to about 15,000 afy, now complemented by modeled projections of aquifer response that show 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, shows that the Saugus Formation can be considered a sustainable water supply source to meet the Saugus portion of the operating plan for the Basin.

Aquifer Protection. The remaining key consideration related to current and future use of the Saugus Formation is the impact of perchlorate contamination. The nature and extent of the contamination, and the plans to contain the migration of perchlorate and restore impacted Saugus well capacity are addressed in CLWA's groundwater containment, treatment and restoration project, as discussed in the 2005 UWMP, Chapter 5 and Appendix E (see EIS/EIR, **Appendix 4.3**, for the 2005 UWMP). This project proposes to contain further downstream migration of perchlorate from the former Whittaker-Bermite site, treat water extracted as part of the containment process, and recover lost groundwater production from the impacted wells in the Saugus Formation.

Impacted Alluvial and Saugus Wells. A small group of wells that have been impacted by perchlorate represent a temporary loss of well capacity within the CLWA service area. Of the six wells that were initially removed from active water supply service upon the detection of perchlorate, four wells with a combined flow rate of 7,200 gallons per minute (gpm) remain out of service, as discussed further in Chapter 5 of the 2005 UWMP. However, CLWA and the local retail purveyors have developed an implementation plan that would restore this well capacity. The implementation plan includes a combination of treatment facilities and replacement wells.

Treatment facilities for impacted wells are under construction (treatment facilities are well over 75 percent completed, and pipelines are over 35 percent completed). The start-up and operation is scheduled for 2009.

CLWA, in conjunction with the local retail water purveyors, is proceeding with a two-prong perchlorate contamination program. The first prong is to protect non-impacted wells by pumping contaminated groundwater near the former Whittaker-Bermite site, thus preventing further migration within the aquifer and recovering costs incurred in responding to the perchlorate contamination. The second prong of the program is to restore the production capacity and water supply from wells that have been temporarily

closed due to the detection of perchlorate. As outlined below, CLWA's containment and water supply restoration program is well underway.

CLWA developed an Interim Remedial Action Plan (IRAP) to address the groundwater perchlorate contamination, and that action plan was approved by DTSC in January 2006. A groundbreaking ceremony for construction of the perchlorate treatment system and associated pipelines took place in August 2006. Monitoring wells required for the project have been constructed. The final design for treatment facilities and pipelines was completed in May 2007. Bidding has been completed, the contract has been awarded, and construction has commenced for the major construction work.

Significantly, CLWA and the retail water purveyors entered into a settlement agreement in connection with the 2000 lawsuit brought against Whittaker-Bermite whereby CLWA and the purveyors estimate they will receive up to $100 million to construct the necessary perchlorate treatment facilities and pipelines; establish replacement wells as necessary; and, fund the operation and maintenance of these facilities for a period up to 30 years.

Under the terms of the settlement agreement, the current and former owners of the Whittaker-Bermite site and their insurers will provide funding to construct replacement wells for the Stadium well and the NC-11 well, and a treatment plant to remove perchlorate from Saugus wells 1 and 2. Funding also will be provided to pay for the replacement of well V-157 (already undertaken), and the installation of wellhead treatment at well Q2, also already undertaken. The settlement agreement provides funds to operate and maintain the treatment system for up to 30 years, an amount the water agencies estimate could be as much as $50 million.

As noted above, the treatment facilities already have been designed and the settlement agreement provides almost $12 million to reimburse the agencies for past expenditures. In addition, a $10 million "rapid response fund" will be established to allow the water agencies to immediately treat specified wells that could become impacted by perchlorate contamination in the future. Costs not covered in the settlement agreement, such as the federal government's fair share of monitoring and treatment, will be sought *via* grant funding, including money made available by the Department of Defense.

Because certain defendants had previously filed for bankruptcy protection, the settlement agreement required approval by the U.S. Bankruptcy Court. On June 14, 2007, the Bankruptcy Court granted that approval. Final approval of the settlement agreement also required good-faith settlement determination by the U.S. District Court; that approval was granted on July 13, 2007. The District Court's action constitutes the final required court approval; accordingly, all payments under the settlement agreement were due by approximately August 13, 2007.[23] Payment under the settlement was received in August 2007.

[23] The "Castaic Lake Water Agency Litigation Settlement Agreement," and the "Order Granting Joint Motion for Court Approval, Good Faith Settlement Determination and Entry of Consent Order," filed July 13, 2007, which are incorporated by reference, are available for public inspection and review at the County of Los Angeles Public Library, Valencia Branch, 23743 West Valencia Boulevard, Santa Clarita, California 91355-2191.

4.3.4.5 Description of Water Quality

The groundwater quality of the Alluvial aquifer and the Saugus Formation consistently meets drinking water standards set by the USEPA and DPH. The water is delivered by the local retail purveyors in the CLWA service area for domestic use without treatment, although the water is disinfected prior to delivery. Existing water quality conditions for urban water uses in the CLWA service area are documented in the Santa Clarita Valley Water Quality Report (SCVWP 2005). That report provides the cumulative results of thousands of water quality tests performed in the Santa Clarita Valley area on CLWA's and the local purveyors' water supplies. The annual Santa Clarita Valley Water Report addresses water quality as well (see, for example, 2007 Santa Clarita Valley Water Report (April 2008), pp. III-13 - III-17 [EIS/EIR, **Appendix 4.3**]).

An annual Consumer Confidence Report is provided to all Santa Clarita Valley residents who receive water from the local retail water purveyors in the CLWA service area. In that report, there is detailed information about the results of the testing of groundwater quality and treated SWP water supplied to the residents of the Santa Clarita Valley. Water quality regulations are constantly changing as contaminants that are typically not found in drinking water are discovered and new standards are adopted. In addition, existing water quality standards are becoming more stringent in terms of allowable levels in drinking water. However, all groundwater produced by the retail water purveyors in the Santa Clarita Valley meets or exceeds stringent drinking water quality regulations set by USEPA, DPH, and the continuing oversight of the CPUC. Certain historical and existing land uses could threaten groundwater quality in the same way that other groundwater basins in Southern California are impacted. Examples include underground tank leaks, application of fertilizers from farming activities, and improper disposal of industrial solvents. Please see this EIS/EIR, **Appendix 4.3**, Chapter 5 of the 2005 UWMP for additional information about groundwater quality.

4.3.4.5.1 Local Surface Water Quality

In accordance with the Porter-Cologne Act and the Clean Water Act, the Los Angeles RWQCB developed the Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (Basin Plan), as amended (RWQCB 1994). The Basin Plan addresses five constituents of concern that are relevant for inland surface water and groundwater (total dissolved solids, sulfate, chloride, boron, and nitrogen) and considers local hydrology, land use, population, sensitive environmental resources, and established water quality objectives for each of the watersheds, including the Santa Clara River. New and proposed water quality objectives for the Santa Clara River watershed have either been established or are currently undergoing discussion for future approval and/or consideration. Within the Santa Clara River watershed, chlorides have been prioritized for further study, with higher priority given to nutrients.

4.3.4.5.2 Imported Water Quality

Raw water from Castaic Lake delivered to the ESFP and RVWTP is generally of high quality. CLWA treats this water so that it meets drinking water standards set by the USEPA and DPH.

4.3.4.5.3 Groundwater Quality

The groundwater quality of the Alluvial aquifer and the Saugus Formation is generally acceptable quality for domestic use without treatment, although these waters produced for domestic use are disinfected by the retail water purveyors prior to delivery. Groundwater produced by the water purveyors in the CLWA service area consistently meets drinking water standards set by the USEPA and the DPH. Within the CLWA service area, perchlorate has been a concern with respect to groundwater quality since it was detected in four production wells in the eastern part of the Saugus Formation in 1997. A total of six perchlorate-impacted wells have been removed from active water supply service. The development and implementation of a cleanup plan for the impacted groundwater is being coordinated among CLWA, the retail purveyors, the City of Santa Clarita, DTSC, and the Corps.

The groundwater quality of both the Alluvial aquifer and the Saugus Formation are assessed in further detail below.

Alluvium. Groundwater quality is a key factor in assessing the Alluvial aquifer as a municipal and agricultural water supply. In terms of the aquifer system, there is no convenient long-term record of water quality, (*i.e.*, water quality data in one or more single wells that spans several decades and continues to the present). Thus, in order to examine a long-term record of water quality in the Alluvium, individual records have been integrated from several wells completed in the same aquifer materials and in close proximity to each other to examine historical trends in general mineral groundwater quality throughout the basin. Based on these records of groundwater quality, wells within the Alluvium have experienced historical fluctuations in general mineral content, as indicated by electrical conductivity (EC), which correlates with fluctuations of individual constituents that contribute to EC. The historic water quality data indicates that, on a long-term basis, there has not been a notable trend and, specifically, there has not been a decline in water quality within the Alluvium.

Specific conductance within the Alluvium exhibits a westward gradient, corresponding with the direction of groundwater flow in the Alluvium. EC is lowest in the easternmost portion of the Basin, and highest in the west. Water quality in the Alluvium generally exhibits an inverse correlation with precipitation and streamflow, with a stronger correlation in the easternmost portion of the Basin, where groundwater levels fluctuate the most. Wet periods have produced substantial recharge of higher quality (low EC) water, and dry periods have resulted in declines in groundwater levels, with a corresponding increase in EC (and individual contributing constituents) in the deeper parts of the Alluvium.

Specific conductance throughout the Alluvium is currently below the Secondary (aesthetic) Upper Maximum Contaminant Level of 1,600 micromhos per centimeter (umhos/cm). The presence of long-term consistent water quality patterns, although intermittently affected by wet and dry cycles, supports the conclusion that the Alluvial aquifer is a viable on-going water supply source in terms of groundwater quality. The analysis of groundwater sustainability was summarized in a Basin Yield Report (CH2MHill and LSCE, 2005). The consultants utilized a regional groundwater flow model, along with a review of historical observations over a 60-year period. The report concluded that the Alluvial and Saugus aquifers historically have been and continue to be in good operating condition and that the water purveyors' groundwater operating plan as described in the 2003 GWMP, 2005 UWMP, and the 2007 Santa Clarita Valley Water Report is sustainable and can be relied upon for long-term planning purposes. Increased pumping consistent with the water purveyors' groundwater operating plan would not effect perchlorate

remediation. The perchlorate remediation plan was reviewed and approved by DTSC. Please refer to this EIS/EIR, **Appendix 4.3**, for the Basin Yield Report.

Perchlorate. The most notable groundwater quality issue in the Alluvium is perchlorate contamination. In 2002, one Alluvial well (Stadium well), located near the former Whittaker-Bermite facility, was inactivated for municipal water supply due to detection of perchlorate slightly below the Notification Level.[24] In early 2005, perchlorate was detected in a second Alluvial well, VWC's Well Q2. VWC's response was to remove the well from active water supply service and to rapidly seek approval for installation of wellhead treatment and return of the well to service. As part of outlining its plan for treatment and return of the well to service, VWC analyzed the impact of the temporary inactivation of the well on its water supply capability; and the analysis determined that VWC's other sources are sufficient to meet demand.[25] VWC proceeded to gain approval for installation of wellhead treatment (ion-exchange as described below), including environmental review, and completed installation of the wellhead treatment facilities in September 2005. Well Q2 was returned to active water supply service in October 2005 and remains operational.

On-going monitoring of all active municipal wells near the Whittaker-Bermite site has shown no other detections of perchlorate above reporting or action levels in any active Alluvial wells. However, based on a combination of proximity to the Whittaker-Bermite site and prevailing groundwater flow directions, complemented by findings in the on-going on-site and off-site investigations by Whittaker-Bermite and the Army Corps of Engineers (Corps), there is logical concern that perchlorate could impact nearby, downgradient Alluvial wells (see this EIS/EIR, **Appendix 4.3**, 2005 UWMP, Appendix D). As a result, provisions are in place to respond to perchlorate contamination if it should occur. The groundwater model was used to examine capture zones around Alluvial wells under planned operating conditions (pumping capacities and volumes) for the time period through currently scheduled restoration of impacted wells in 2006.[26] The capture zone analysis of Alluvial wells generally near the Whittaker-Bermite site, shown on

[24] "Notification level" means the concentration level of a contaminant in drinking water delivered for human consumption that the state DPH has determined, based on available specific information, does not pose a significant health risk but warrants notification pursuant to applicable law. Notification levels are non-regulatory, health-based advisory levels established by the state DPH for contaminants in drinking water for which maximum contaminant levels have not been established. Notification levels are established as precautionary measures for contaminants that may be considered candidates for establishment of maximum contaminant levels, but have not yet undergone or completed the regulatory standard setting process prescribed for the development of maximum contaminant levels. Notification levels are not drinking water standards

[25] See, this EIS/EIR, **Appendix 4.3**, for a copy of the report entitled, *Impact and Response to Perchlorate Contamination, Valencia Water Company, Well Q2,* prepared for Valencia Water Company by Luhdorff & Scalmanini Consulting Engineers, April 2005.

[26] See this EIS/EIR, **Appendix 4.3**, for a copy of the technical memorandum entitled, *Analysis of Near-Term Groundwater Capture Areas for Production Wells Located Near the Whittaker-Bermite Property (Santa Clarita, California),* prepared by CH2MHill, for the Santa Clarita Valley Water Purveyors, dated December 21, 2004.

Figure 4.3-7, suggests that inflow to those wells will either be upgradient of the contamination site, or will be from the Alluvium beyond where perchlorate is most likely to be transported, with the possible exception of the VWC's Pardee wellfield, which includes Wells N, N7, and N8. Although the capture zone analysis does not show the Pardee wells to be impacted, they are considered to be at some potential risk due to the proximity of their capture zone to the Whittaker-Bermite site.

The combined pumping capacity of VWC's Pardee wells is 6,200 gpm, which equates to about 10,000 af of maximum annual capacity. However, in the operating plan for both normal and dry year Alluvial pumping, the planned use of those wells represents 2,940 afy of the total 30,000 to 40,000 afy Alluvial groundwater supply. Thus, if the wells were to become contaminated with perchlorate, they would represent an amount of the total Alluvial supply that could be readily replaced, on a short-term interim basis, by utilizing an equivalent amount of imported water from CLWA or by utilizing existing capacity from other Alluvial wells (see **Table 4.3-14**, above). Furthermore, if the Pardee wells were to become contaminated by perchlorate contamination, VWC has made site provisions at its Pardee wellfield for installation of wellhead treatment. Such treatment would be the same as once installed at VWC's Well Q2, and would result in the impacted Pardee wells being promptly returned to active service.

In addition, in June 2005, a work plan was completed for a pilot remediation pumping program in the Northern Alluvium and certain on-site subareas east/southeast, or generally upgradient, of the impacted Stadium well. That program is operational and basically involves the establishment of containment, generally along the northern boundary of the Whittaker-Bermite site, upgradient of the Stadium well, by continuous pumping of a former Whittaker-Bermite facility well, at a continuous low capacity, complemented by pumping at several groundwater 'hot spots' also generally upgradient of the Stadium well. Extracted water is treated at Whittaker-Bermite's existing on-site treatment system. Generally consistent with the Saugus restoration concept, the Northern Alluvium pumping program would have the concurrent objectives of preventing site-related contaminants from leaving the site and removing some contamination from groundwater such that it can be removed in the on-site treatment process prior to discharge of the water back to the Basin. As of November 3, 2008, approximately 13.5 million gallons of groundwater have been treated and discharged under the new NPDES permit authorizing such activities.

The plan is to continue routine weekly and monthly NPDES sampling, treatment, and discharge in compliance with NPDES permit requirements.[27]

Saugus Formation. Similar to the Alluvium, groundwater quality in the Saugus Formation is a key factor in assessing that aquifer as a municipal and agricultural water supply. As with groundwater level data, long-term Saugus groundwater quality data is not sufficiently extensive (few wells) to permit any basin-wide analysis or assessment of pumping-related impacts on quality. As with the Alluvium, EC has been chosen as an indicator of overall water quality, and records have been combined to produce a long-term depiction of water quality. Water quality in the Saugus Formation has not historically exhibited the

[27] See Summary Report to Department of Toxic Substances Control from AMEC Geomatrix regarding Former Whittaker-Bermite Facility, Santa Clarita, California, November 17, 2008. This report is found in **Appendix 4.3** of this EIS/EIR.

precipitation-related fluctuations seen in the Alluvium. Based on the historical record over the last 50 years, groundwater quality in the Saugus has exhibited a slight overall increase in EC. More recently, several wells within the Saugus Formation have exhibited an additional increase in EC similar to that seen in the Alluvium. In 2004, monthly data collected by VWC for two Saugus wells shows that the overall level of EC remained fairly stable during the year. Levels of EC in the Saugus Formation remain below the Secondary Upper Maximum Contaminant Level for EC. Groundwater quality within the Saugus will continue to be monitored to ensure that degradation that presents concern relative to the long-term viability of the Saugus as a municipal water supply does not occur. If degradation occurs, the problem would be investigated by the purveyors in consultation with the appropriate state and federal agencies, and a number of actions would be identified to correct the problem. Those actions include, but are not limited to, well rehabilitation, aquifer zone isolation, blending with other sources, and well head treatment.

Perchlorate. As with the Alluvium, the most notable groundwater quality issue in the Saugus Formation is perchlorate contamination. Since 1997, four Saugus wells have been inactivated for water supply service due to the presence of perchlorate. While the inactivation of those wells does not prevent the purveyors from meeting water demands, there is a program and schedule in place that involves installation of treatment facilities to both extract contaminated water and control migration in the Saugus Formation, such that the impacted capacity is restored and perchlorate migration is controlled.

In the interim, the question of whether existing active Saugus wells are likely to be contaminated by perchlorate migration prior to the installation of treatment and pumping for perchlorate contamination control has been evaluated by using the groundwater flow model to analyze capture zones of existing active wells through 2006, the scheduled period for permitting, installation of treatment, and restoration of impacted capacity. For that analysis, recognizing current hydrologic conditions and available supplemental SWP supplies, the rate of Saugus pumping was conservatively projected to be in the normal range (7,500 to 15,000 afy) for the near-term. The results of the capture zone analysis, illustrated on **Figure 4.3-8**, were that the two nearest downgradient Saugus wells, VWC's Wells 201 and 205, would draw water from very localized areas around the wells and would not draw water from locations where perchlorate has been detected in the Saugus Formation. As shown on the figure, the capture zone analysis projected Well 201 would potentially draw Saugus groundwater from areas located up to 450 feet east of the well, but was unlikely to draw water from areas farther to the east through that time period. During the same time, Well 205 would potentially draw Saugus groundwater from areas as much as 650 feet to the east and northeast of this well.

LEGEND

CONTAMINATED PRODUCTION WELL

- ALLUVIUM
- SAUGUS

UNCONTAMINATED PRODUCTION WELL

- ALLUVIUM
- SAUGUS

MONITORING WELL

- ALLUVIUM
- SAUGUS

TWO-YEAR GROUNDWATER CAPTURE ZONE

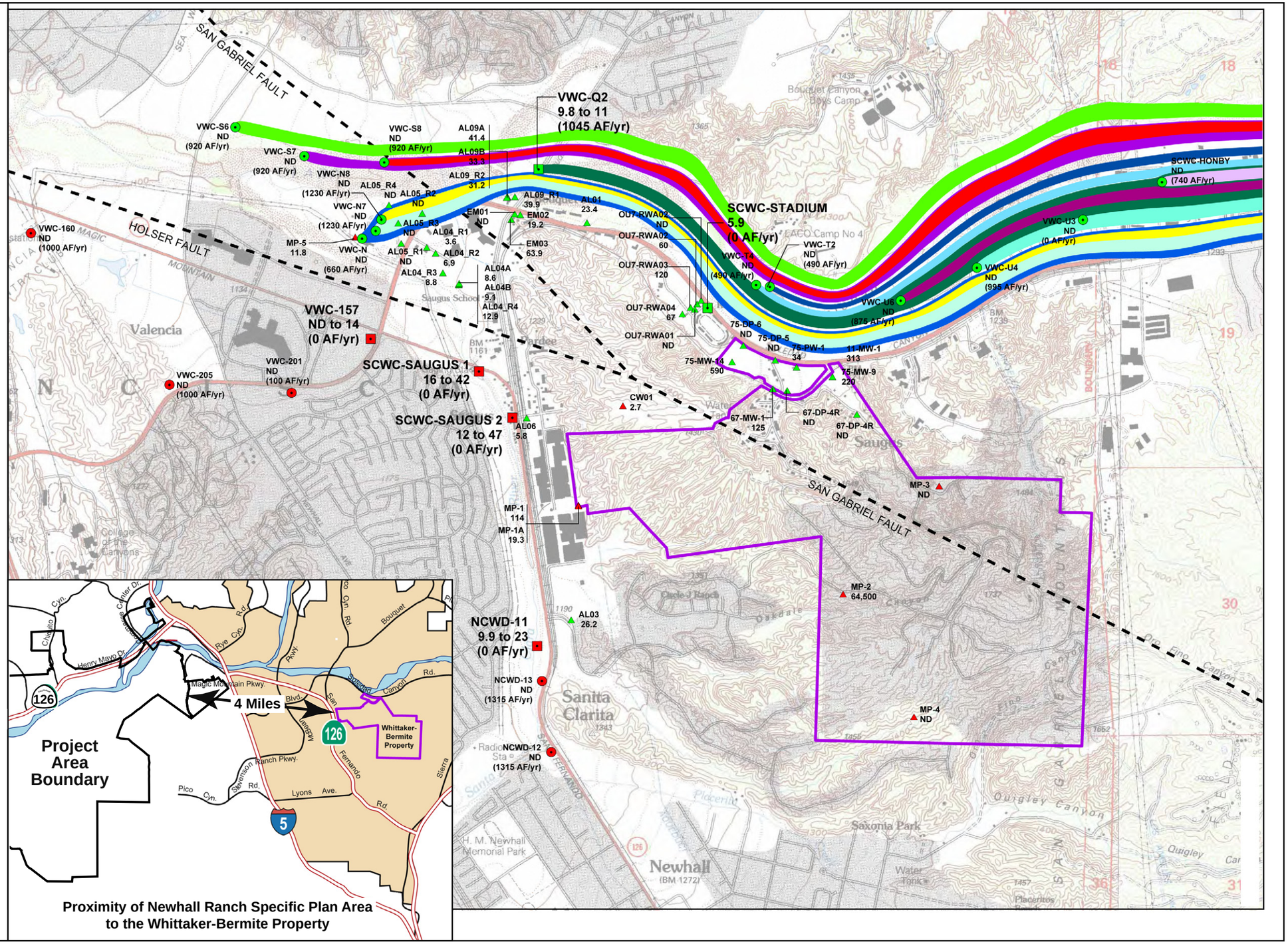
- SCWC-HONBY
- VWC-N
- VWC-N7
- VWC-N8
- VWC-Q2
- VWC-S6
- VWC-S7
- VWC-S8
- VWC-T2
- VWC-T4
- VWC-U4
- VWC-U6
- WHITTAKER-BERMITE PROPERTY BOUNDARY

NOTES:

1. VALUES PRESENTED UNDER WELL SYMBOLS REPRESENT PERCHLORATE CONCENTRATION IN GROUNDWATER (µg/L).
2. PUMPING VALUES IN PARENTHESES ARE ANNUAL PUMPING VOLUMES
3. ND = PERCHLORATE NOT DETECTED IN GROUNDWATER SAMPLE.
4. µg/L = MICROGRAMS PER LITER; AF/yr = acre feet per year
5. FLOWPATHS ARE DELINEATED USING AN EFFECTIVE POROSITY OF 0.10 IN THE ALLUVIAL AQUIFER AND 0.05 IN THE SAUGUS FORMATION.

2000 1000 0 2000

APPROXIMATE SCALE IN FEET



Proximity of Newhall Ranch Specific Plan Area to the Whittaker-Bermite Property

SOURCE: Luhdorff & Scalmanini Consulting Engineers – January 2006

FIGURE **4.3-7**

Forecasted Two-Year Groundwater Capture Zones for Active Alluvial Production Wells Located Closest to the Whittaker-Bermite Property Santa Clarita, California

32-214•01/08

LEGEND

CONTAMINATED PRODUCTION WELL

- ALLUVIUM
- SAUGUS

UNCONTAMINATED PRODUCTION WELL

- ALLUVIUM
- SAUGUS

MONITORING WELL

- ALLUVIUM
- SAUGUS

TWO-YEAR GROUNDWATER CAPTURE ZONE

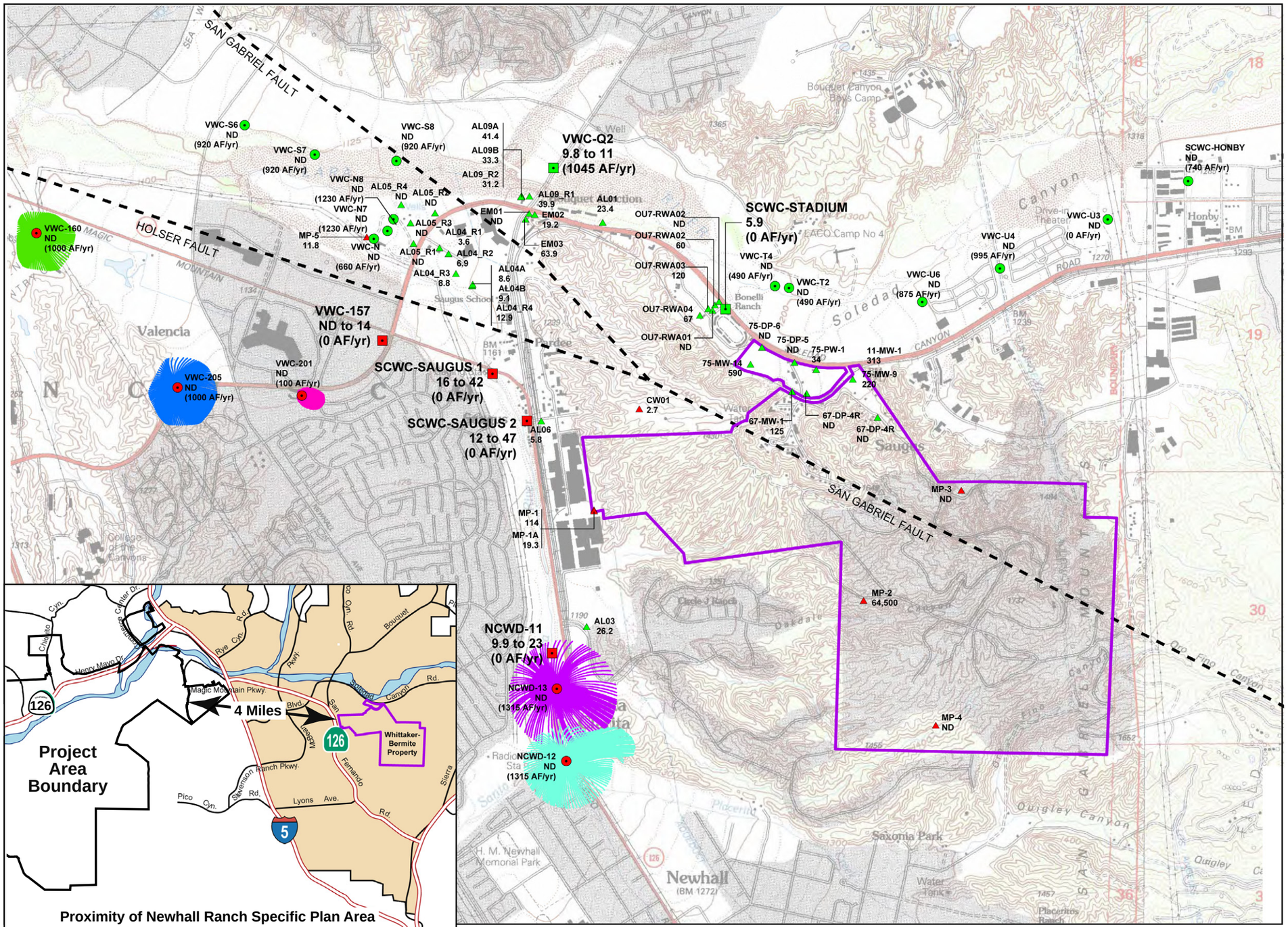
- NC-12
- NC-13
- VWC-160
- VWC-201
- VWC-205
- WHITTAKER-BERMITE PROPERTY BOUNDARY

NOTES:

1. VALUES PRESENTED UNDER WELL SYMBOLS REPRESENT PERCHLORATE CONCENTRATION IN GROUNDWATER (µg/L).
2. PUMPING VALUES IN PARENTHESES ARE ANNUAL PUMPING VOLUMES.
3. ND = PERCHLORATE NOT DETECTED IN GROUNDWATER SAMPLE.
4. µg/L = MICROGRAMS PER LITER; AF/yr = acre feet per year
5. FLOWPATHS ARE DELINEATED USING AN EFFECTIVE POROSITY OF 0.10 IN THE ALLUVIAL AQUIFER AND 0.05 IN THE SAUGUS FORMATION.

2000 1000 0 2000

APPROXIMATE SCALE IN FEET



SOURCE: Luhdorff & Scalmanini Consulting Engineers – January 2006

FIGURE **4.3-8**

Forecasted Two-Year Groundwater Capture Zones for Active Saugus Production Wells Located Closest to the Whittaker-Bermite Property Santa Clarita, California

32-214•01/08

As a result, the currently active downgradient Saugus wells are expected to remain active as sources of water supply in accordance with the overall operating plan for the Saugus Formation Given the generally low planned pumping from the nearest downgradient Saugus wells in the operating plan through 2006, after which restored capacity and resultant aquifer hydraulic control are scheduled to be in place.

Perchlorate Treatment Technology. Effective technologies presently exist to treat perchlorate in water in order to meet drinking water standards. In a publication from the USEPA, *Region 9 Perchlorate Update*,[28] the USEPA discussed the current state of perchlorate treatment technology, and the current and planned treatment development efforts being carried out as part of USEPA Superfund program studies, U.S. Air Force research, water utility-funded studies, and the federally funded research effort underway by the East Valley Water District, California and the American Water Works Association Research Foundation (AWWARF). The USEPA also summarized two of the technologies that are in use today, which are capable of removing perchlorate from groundwater supplies, the ion exchange and biological treatment methods.

A number of full-scale perchlorate treatment systems have been implemented in California and other states. In an effort to evaluate the various available treatment technologies, CLWA commissioned an investigation to identify and evaluate alternative treatment processes effective in removing perchlorate. The scope of that investigation included resolving permitting issues pertaining to the construction and certification of a treatment facility, conducting bench-scale and pilot-scale tests to determine treatment process performance, and preparing preliminary capital and operations and maintenance cost estimates.

Three treatment technologies, an ion exchange system and two biological systems, were selected for study. All three systems were determined to be effective in removing perchlorate.[29] However, there was considerable uncertainty with respect to the capital and operations and maintenance costs associated with each process. Therefore, a technical group comprised of representatives from CLWA, the retail water purveyors, and consultants retained by Whittaker-Bermite agreed to solicit competitive bids for the design, construction, and operation of both ion exchange and biological treatment systems. After thorough evaluation of several bids, the technical group determined that ion exchange is the preferred technology based upon treatment performance, ease of regulatory compliance, and comparison of costs associated with construction and operations and maintenance.

The preferred single-pass ion exchange treatment technology does not generate a concentrated perchlorate waste stream that would require additional treatment before discharge to a sanitary sewer or a brine line (if one is available). This technology incorporates an active resin (a material that attracts perchlorate molecules) that safely removes the perchlorate from water. The resin is contained in pressure vessels and the water is pumped through the vessel. The resin is eventually replaced with new resin after a period of time. The old resin is removed and transported by truck to an approved waste disposal site where it is safely destroyed. This technology is robust and reliable for use in drinking water systems.

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[28] See this EIS/EIR, **Appendix 4.3**, for the USEPA's *Region 9 Perchlorate Update*.

[29] See this EIS/EIR, **Appendix 4.3**, for the report entitled, *Treatment of Perchlorate Contaminated Groundwater from the Saugus Aquifer, TM 3 Bench and Pilot Test Results,* Carollo Engineers, February 2004.

DPH has approved operation of perchlorate treatment plants, and those plants currently in operation are listed in **Table 4.3-16**.

Based on: (1) the results of CLWA's investigation of perchlorate removal technologies; (2) the technical group's evaluation; and (3) DPH's approval of single-pass ion exchange for treatment in other settings, CLWA and the local retail water purveyors are planning single-pass ion exchange for the treatment technology for restoration of impacted capacity (wells) in accordance with the permitting, testing, and installation process described in the 2005 UWMP. The wellhead treatment installed at VWC's Well Q2 in October 2005 is the same single-passion exchange as is planned for restoration of impacted Saugus well capacity.

Table 4.3-16
Perchlorate Treatment Summary

Location	Treatment Plant Capacity (gallons per minute)	Concentration of Perchlorate in Groundwater (parts per billion)	Concentration of Perchlorate after Treatment (parts per billion)
1 Valencia Water Company (SCV – Well Q2)	1,300	<11	ND
2 La Puente Valley County Water Dist. (Baldwin Park)	2,500	< 200	ND
3 San Gabriel Valley Water Company (El Monte)	7,800	< 80	ND
4 Lincoln Avenue Water Company (Altadena)	2,000	< 20	ND
5 City of Riverside	2,000	< 60	ND
6 City of Rialto	2,000	< 10	ND
7 City of Colton	3,500	< 10	ND
8 Fontana Union Water Company	5,000	< 15	ND

ND = non-detect. The non-detect level represents concentrations less than 4 parts per billion.

Source: Perchlorate Contamination Treatment Alternatives, prepared by the Office of Pollution Prevention and Technology Development, DTSC, California Environmental Protection Agency, Draft January 2004.

Groundwater Quality Near the Specific Plan Site. The quality of the groundwater available from the Alluvial aquifer near the Specific Plan site has been tested. Results from laboratory testing conducted for VWC wells expected to serve the Specific Plan site are provided in **Appendix 4.3** of this EIS/EIR. The wells expected to be used are approved by DPH and are located just northeast of the Specific Plan site in the Valencia Commerce Center. Laboratory testing indicates that all constituents tested were at acceptable levels for drinking water under Title 22. Tests conducted for perchlorate indicated non-detect.

VWC also investigated the future risk of perchlorate contamination on its new wells. In summary, the approach used to investigate the potential capture of perchlorate-impacted groundwater by the new wells involved three sequential steps: identification of local and regional groundwater flow patterns in the Alluvium, the aquifer in which all four wells are located; application of a single layer groundwater flow model to examine the capture zone of the four-well "well field" under planned operating conditions; and interpretation of potential capture of perchlorate via examination of the wells' theoretical independent

capture zone relative to the known occurrence of perchlorate in the Alluvium. The latter step was subsequently augmented by considering other factors, such as the locations and magnitude of pumping between the new wells and the known occurrence of perchlorate, which affect the potential capture of perchlorate by the new wells.

Given that the groundwater resources from the Alluvial aquifer for the Specific Plan would be produced from wells located along Castaic Creek and over four miles west of the area known to be contaminated with perchlorate (*i.e.*, the former Whittaker-Bermite facility), such supplies are not considered to be at risk as a result of perchlorate contamination released from the former Whittaker-Bermite facility.

Groundwater Pollutants of Concern. The RMDP component of the proposed Project will allow for incidental infiltration of urban runoff to groundwater after receiving treatment in project design features (PDFs), as well as infiltration of irrigation water. The same is true for proposed development in the Entrada and VCC planning areas. Research conducted on the effects on groundwater from stormwater infiltration indicates that the potential for contamination is dependent on a number of factors, including the local hydrogeology and the chemical characteristics of the pollutants of concern.

Chemical characteristics that influence the potential for groundwater impacts include high mobility (low absorption potential), high solubility fractions, and abundance in runoff and dry weather flow. As a class of constituents, trace metals tend to adsorb onto soil particles and are filtered out by the soils. This has been confirmed by extensive data collected beneath stormwater detention/retention ponds in Fresno (conducted as part of the Nationwide Urban Runoff Program) that showed trace metals tended to be adsorbed in the upper few feet in the bottom sediments. Bacteria also are filtered out by soils. More mobile constituents, such as chloride and nitrate, would have a greater potential for infiltration.

The pollutants of concern for the groundwater quality analysis are those that are anticipated or potentially could be generated by the Specific Plan at concentrations, based on water quality data collected in Los Angeles County. Pollutants include bacteria, mineral quality, nitrogen, and various toxic chemical compounds. Objectives for taste and odor also are considered. Identification of the pollutants of concern for the RMDP considered proposed land uses as well as pollutants that have the potential to impair beneficial uses of the groundwater below the RMDP area. The Los Angeles Basin Plan contains numerical objectives for bacteria, mineral quality, nitrogen, and various toxic chemical compounds, and contains qualitative objectives for taste and odor.

The pollutants of concern for the groundwater quality analysis are those that are anticipated or that have the potential to be generated by the land uses associated with the Specific Plan. The pollutants specific to each land use have been identified based on water quality data collected in Los Angeles County. Pollutants generated by land uses in the Specific Plan have the potential to impact groundwater via infiltration of runoff in PDF, direct infiltration of irrigation water and stormwater, exfiltration or seepage from sewers or stormwater drains, and direct discharges of treated wastewater to the Santa Clara River.

***Nitrate*.** Nitrate+nitrite-N is a pollutant of concern for purposes of evaluating groundwater quality impacts based upon the potential use of nitrogen fertilizers and nitrates high mobility in groundwater.

***Bacteria*.** The Basin Plan contains numeric criteria for bacteria in drinking water sources. Bacteria are not highly mobile in groundwater and are easily removed through filtration in soils (for example, as with

septic tank discharges). Bacteria in stormwater originating from pets and wildlife is not expected to exceed the numeric criteria and, therefore, is not a pollutant of concern.

Taste and Odor. The Basin Plan contains a narrative objective for taste and odors that cause a nuisance or adversely affect beneficial uses. Undesirable tastes and odors in groundwater may be a nuisance and may indicate the presence of a pollutant(s). Odor associated with water can result from natural processes, such as the decomposition of organic matter or the reduction of inorganic compounds, such as sulfate. Other potential sources of odor causing substances, such as industrial processes, will not occur as part of the proposed Project. Therefore, taste and odor-producing substances are not pollutants of concern for the proposed Project.

Mineral Quality: TDS, Sulfate, Chloride, and Boron. Mineral quality in groundwater is largely influenced by the mineral assemblage of soils and rocks that it comes into contact with. Elevated mineral concentrations could impact beneficial uses; however, the minerals listed in the Basin Plan are not believed to be pollutants of concern due to the anticipated runoff concentrations and the typical mineral concentrations in irrigation water (Castaic Lake Water Agency), which are below the Basin Plan objectives (**Table 4.3-17**). Therefore, these constituents are not considered pollutants of concern for the RMDP.

Table 4.3-17
Comparison of Basin Plan Mineral Groundwater Objectives with Mean Measured Values in Los Angeles County and SWP Water Quality at Castaic Lake

Mineral	Los Angeles Basin Plan Groundwater Quality Objective[1] (mg/L)	Range of Mean Concentrations in Urban Runoff[2] (mg/L)	Typical Concentration in CLWA Water[3] (mg/L)
Total Dissolved Solids	700	53 - 237	314
Sulfate	250	7 - 35	52
Chloride	100	4 - 50	81
Boron	1.0	0.2 - 0.3	0.2

Notes:

1 Santa Clara-Bouquet and San Francisquito Canyons subbasin

2 Source: Los Angeles County, 2000. Includes all monitored land uses.

3 Source: The Santa Clarita Valley Water Quality Report (2008)

4.3.4.5.4 Other Groundwater Quality Issues

Methyl-Tertiary Butyl Ether (MTBE). MTBE has been a concern for the past several years, and on May 17, 2000, DPH adopted a primary MCL for MTBE of 0.013 mg/L. CLWA and the local retail purveyors have been testing for MTBE since 1997 and, to date, have not detected it in any of the production wells.

Total Trihalomethanes (TTHMs). In 2002, the United States Environmental Protection Agency implemented the new Disinfectants and Disinfection Byproducts Rule. In part, this rule establishes a new MCL of 80 ug/L (based on an annual running average) for TTHM. TTHMs are byproducts created when chlorine is used as a means for disinfection. In 2005, CLWA and the local retail purveyors implemented an alternative method of disinfection, chloramination, to maintain compliance with the new rule and future regulations relating to disinfection byproducts.[30] TTHM concentrations have remained significantly below the MCL since implementation of the alternative disinfection method.

Arsenic. The USEPA revised the federal MCL for arsenic from 50 µg/l to 10 µg/l. Historically, however, naturally occurring arsenic has been detected at concentrations of less that 5 µg/l in local groundwater supplies and at concentrations of less than 3 µg/l in SWP water supplies. The analytical results for arsenic for most groundwater wells in the Valley have been non-detect where the detection limit was 2 µg/l (Luhdorff and Scalmanini, 2004).

4.3.4.6 Litigation Effects on Availability of Imported Water

For the past few years, there have been a series of litigation challenges concerning imported water supplies in the Santa Clarita Valley. The litigation challenges have given rise to claims that there is uncertainty regarding the availability and reliability of imported SWP water supplies in the Santa Clarita Valley.

The purpose of this section is to disclose these litigation challenges and their effects on the availability and reliability of imported water supplies in the Santa Clarita Valley. In summary, it has been determined, based on substantial evidence in the record, that the litigation challenges are not likely to affect the short-term or long-term availability or reliability of imported water supplies as projected in the 2005 UWMP and other reports, studies, and documents used in preparing this section of the EIS/EIR.

4.3.4.6.1 Litigation Concerning CEQA Review of the Monterey Agreement

In *Planning and Conservation League v. Department of Water Resources* (2003) 83 Cal.App. 4th 892, the Court of Appeal, Third Appellate District, decertified an EIR prepared by the Central Coast Water Agency (CCWA) to address the Monterey Agreement (Monterey EIR). The Monterey Agreement was a statement of principles to be incorporated into omnibus amendments to the long-term water supply contracts between the DWR and the SWP Contractors. The Monterey Agreement was the culmination of negotiations between DWR and most of the 29 SWP contractors to settle disputes arising out of the allocation of water during times of shortage. Twenty-seven of the 29 SWP Contractors executed the amendments to their water supply contracts in 1996, which became known as the "Monterey Amendments." The Monterey Amendments revised the methodology of allocating water among SWP Contractors and provided a mechanism for the permanent transfer of Table A water amounts from one SWP Contractor to another.

[30] See *Drinking Water Standards and Health Advisories Table*, U.S. Environmental Protection Agency, Region 9, available online at http://www.epa.gov/region09/water/drinking/files/dwsha_0607.pdf (last visited April 2, 2009).

As stated above, although the court set aside the Monterey EIR prepared by CCWA, it did not set aside or invalidate the Monterey Agreement or the Monterey Amendments. No court has ordered any stay or suspension of the Monterey Agreement or the Monterey Amendments pending certification of a new EIR. DWR and the SWP Contractors continue to abide by the Monterey Agreement, as implemented by the Monterey Amendments, as the operating framework for the SWP, while the new EIR is undertaken.

Following decertification of the original Monterey EIR, the PCL litigants entered into the Monterey Settlement Agreement in 2003, designating DWR as the lead agency for preparation of the new EIR to address the Monterey Agreement. In October 2007, DWR completed the Draft EIR analyzing the Monterey Amendments to the SWP contracts, including Kern water bank transfers and associated actions as part of the Monterey Settlement Agreement (Monterey Plus Draft EIR; SCH No. 2003011118). The Draft EIR addresses the significant environmental impacts of changes to the SWP operations that are a consequence of the Monterey Amendments and the Monterey Settlement Agreement. It also discusses the project alternatives, growth inducement, water supply reliability, as well as potential areas of controversy and concern.

The Monterey Settlement Agreement also facilitated certain water transfers between contracting agencies, including CLWA's 41,000 afy water transfer agreement (discussed further below). The 41,000 afy transfer has been recognized as a permanent transfer by DWR, but it was subject to then pending litigation in Los Angeles Superior Court challenging the EIR prepared for that transfer. (*Friends of the Santa Clarita River v. Castaic Lake Water Agency*, see discussion below.) DWR's new Draft EIR analyzes the potential environmental effects relating to the Monterey transfers, including a focused analysis of the 41,000 afy transfer, which is provided as part of a broader analysis of permanent transfers of Table A Amounts.

4.3.4.6.2 Litigation Concerning CEQA Review of the 41,000 AFY Transfer

Over the past several years, opposition groups have claimed that a part of CLWA's SWP supplies, specifically, a 41,000 afy transfer, should not be included or relied upon because it is not final and is the subject of litigation. It was asserted that litigation challenges to the 41,000 afy transfer create uncertainty regarding the availability and reliability of such water for the Santa Clarita Valley. Other comments have claimed that DWR's preparation of a new Monterey Agreement EIR also introduced an element of potential uncertainty regarding the availability and reliability of the 41,000 afy transfer. These comments have included claims that the subsequent Monterey Settlement Agreement precluded CLWA from using or relying upon the 41,000 afy transfer until DWR has completed and certified the new Monterey Agreement EIR. As explained below, a recent published appellate court decision has resolved these claims in favor of the availability, reliability, and use of CLWA's 41,000 afy transfer.

In *Santa Clarita Organization for Planning the Environment v. County of Los Angeles* (2007) 157 Cal.App.4th 149 (*SCOPE II*), the Second District Court of Appeal, Division Six, affirmed the trial court's decision upholding the validity of the EIR's water supply analysis for the West Creek development project in the Santa Clarita Valley, including the EIR's assessment and reliance upon the permanent and final 41,000 afy water transfer. In applying the four principles for a CEQA analysis of future water supplies articulated by the California Supreme Court in *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412 to the 41,000 afy transfer, the Court of Appeal concluded that the transfer is permanent and final, and that with or without the Monterey Agreement and Monterey

Amendments, the transfer is valid, permanent, and final, and could be relied upon in the project EIR as part of the water supplies in the Santa Clarita Valley. (See **Appendix 4.3** for a copy of the *SCOPE II* decision.)

Nonetheless, for information purposes, this EIS/EIR provides a detailed description of the history and background of CLWA's SWP supplies including, specifically, the 41,000 afy transfer. Based on the *SCOPE II* decision and the information provided in this section of the EIS/EIR, it remains appropriate to rely on the 41,000 afy transfer amount as part of CLWA's 95,200 afy SWP supplies.

Of CLWA's 95,200 af annual Table A Amount, 41,000 afy was permanently transferred to CLWA in a water supply contract amendment approved by DWR in March 1999 by Wheeler Ridge-Maricopa Water Storage District, a member unit of the Kern County Water Agency. CLWA prepared an EIR in connection with the 41,000 afy water transfer, which was challenged in *Friends of the Santa Clara River v. Castaic Lake Water Agency* (Los Angeles County Superior Court, Case No. BS056954). The original trial court decision was in favor of CLWA. On appeal, the Court of Appeal, Second Appellate District, held that since CLWA's original EIR tiered from the Monterey EIR that was later decertified (see above, *Planning and Conservation League v. Dept. of Water Resources* (2000) 83 Cal.App.4th 892), CLWA also would have to decertify its EIR and prepare a revised EIR. The court refused, however, to enjoin CLWA from using any part of the 41,000 af pending preparation of a new EIR.

The original EIR for the 41,000 afy transfer having been decertified, CLWA prepared and circulated a revised Draft EIR for the 41,000 afy transfer, received and responded to public comments regarding the revised Draft EIR, and held two separate public hearings concerning the revised Draft EIR. CLWA approved the revised EIR for the 41,000 afy transfer on December 22, 2004, and lodged the certified EIR with the Los Angeles Superior Court as part of its return to the trial court's writ of mandate in *Friends*. Thereafter, the petitioners voluntarily dismissed the *Friends* action in February 2005.

In January 2005, two new legal actions were brought to the same project (*i.e.*, the 41,000 afy transfer agreement), which challenged CLWA's revised EIR under CEQA. These actions were filed in the Ventura County Superior Court by the Planning and Conservation League and California Water Impact Network. The cases were consolidated and transferred to Los Angeles County Superior Court (*Planning and Conservation League, et al. v. Castaic Lake Water Agency, et al.*, Los Angeles County Superior Court No. BS098724). As stated above, on May 22, 2007, after a hearing, the trial court issued a final Statement of Decision, which included a determination that the 41,000 afy transfer is valid and cannot be terminated or unwound. The trial court, however, also found one defect in CLWA's 2004 EIR and ordered CLWA to correct the defect and report back to the court. The defect did not relate to the environmental conclusions reached in the 2004 EIR; rather, CLWA is required to better establish the basis for selecting three alternative scenarios covered in the 2004 EIR. As a result, the trial court entered Judgment against CLWA and another writ of mandate issued directing CLWA to set aside its certification of the 2004 EIR. The writ, however, specifically stated that it did not call for CLWA to set aside the 41,000 afy transfer. In July 2007, the petitioners appealed the trial court's Judgment, and cross-appeals have since been filed by CLWA and other parties.

The new pending legal challenges to the adequacy of CLWA's revised EIR for the 41,000 afy transfer, and DWR's completion of the new Monterey EIR, arguably, introduce an element of potential uncertainty regarding the 41,000 afy transfer; although based on a review of all the surrounding circumstances, these

events do not significantly affect the availability or reliability of the transfer amount, and, therefore, for the reasons stated below, it is still appropriate to include the transfer amount as part of CLWA's 95,200 afy Table A Amount.

First, the 41,000 afy transfer was completed in 1999 in a DWR/CLWA water supply contract amendment approved by DWR. Since 2000, DWR has allocated and annually delivered the water in accordance with the completed transfer.[31] In connection with that transfer, CLWA paid approximately $47 million for the additional 41,000 afy Table A supply, the monies have been accepted by the Wheeler Ridge-Maricopa Water Storage District, the sale price has been financed through the sale of CLWA tax-exempt bonds, and, as noted, DWR has expressly approved and amended CLWA's long-term water supply contract to reflect the increase in CLWA's SWP Table A Amount and the permanent transfer/reallocation of SWP Table A supply between SWP Contractors. This contract has never been set aside and continues in full force and effect.

Second, the Court of Appeal held that the only defect in the 1999 CLWA EIR was that it tiered from the Monterey EIR, which was later decertified. This defect was remedied by CLWA in the revised EIR that did not tier from the Monterey EIR.

Third, the Monterey Settlement Agreement expressly authorized the operation of the SWP in accordance with the Monterey Amendments. The Monterey Amendments, which are still in effect and have not been set aside by any court, authorized SWP Contractors to transfer unneeded SWP supply amounts to other contractors on a permanent basis. Specifically, the Monterey Agreement provisions authorized 130,000 af of agricultural SWP contractors' entitlements to be available for sale to urban SWP contractors. CLWA's 41,000 af acquisition was a part of the 130,000 af of SWP Table A supply that was transferred, consistent with the Monterey Amendments. The DWR is still in the process of completing the EIR to address the Monterey Amendments; however, the court in the PCL litigation refused to set aside the Monterey Agreement or the Monterey Amendments pending preparation of that EIR.

Fourth, the Court of Appeal in *Friends* refused to enjoin the 41,000 afy transfer, and instead required CLWA to prepare a revised EIR, which EIR CLWA has now completed and certified. This EIR is subject to further litigation, which is currently at the appellate court stages. However, as stated above, the trial court in that litigation determined that the 41,000 afy transfer was valid and could not be terminated or unwound. The trial court also issued a writ directing CLWA to set aside its certification of the 2004 EIR, but specifically stated that it did not require CLWA to invalidate, void, or set aside the 41,000 afy transfer. Thus, the water from the transfer remains available and continues to be used to serve water demands in the Santa Clarita Valley.

Fifth, CLWA's amended water supply contract documenting the 41,000 afy transfer remains in full force and effect, and no court has ever questioned the validity of the contract or enjoined the use of this portion of CLWA's Table A Amount.

[31] This contract was never legally challenged and, therefore, is considered permanent and in full force and effect.

Sixth, a recent published appellate court decision has confirmed that the 41,000 afy transfer is permanent and final, and that with or without the Monterey Agreement and Monterey Amendments, the transfer can legally occur and will continue to exist. Please refer to *Santa Clarita Organization for Planning the Environment v. County of Los Angeles* (2007) 157 Cal.App.4th 149 (*SCOPE II*). In applying the four principles for a CEQA analysis of future water supplies articulated by the California Supreme Court in *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412 to the 41,000 afy transfer, the Court of Appeal concluded that the transfer is permanent and final, and that with or without the Monterey Agreement and Monterey Amendments, the transfer is valid, permanent, and final, and could be relied upon in the project EIR as part of the water supplies in the Santa Clarita Valley.

For all the above reasons, it is reasonable to include the 41,000 afy transfer in the calculation of CLWA's available imported water supplies. Furthermore, based on the above, it is reasonable to conclude that even if a court finds the CLWA revised EIR legally deficient, that court, like all others before it, will again refuse to enjoin the 41,000 afy transfer, and instead require further revisions to that EIR. Therefore, the pending legal challenges to the 41,000 afy transfer should have no impact on the amount of SWP water available to CLWA as a result of the completed and permanent 41,000 afy transfer.

With respect to the new Monterey EIR, CLWA has concluded that its use of the 41,000 afy is not legally bound to the Monterey Agreement litigation or to DWR's new EIR for the Monterey Agreement and may occur independently of that Agreement. That DWR did not oppose CLWA's completion and certification of the new EIR for the water transfer, independent of DWR's new Monterey Agreement EIR, supports this view. Thus, the pending legal challenges to CLWA's revised EIR and DWR's preparation of a new Monterey EIR are not expected to impact the amount of water available to CLWA as a result of the completed 41,000 afy transfer.

The CLWA 41,000 afy transfer also has been the subject of recent court decisions. The first court case involved a published appellate court decision in litigation entitled, *California Oak Foundation v. City of Santa Clarita* (2005) 133 Cal.App.4th 1219. In the *California Oak Foundation* decision, the Court of Appeal invalidated an EIR under CEQA for the Gate-King project located in the City of Santa Clarita, because the EIR did not explain how demand for water would be met if the 41,000 afy transfer were set aside, *or* why it is appropriate to rely on the 41,000 afy transfer in any event.[32] After issuance of the *California Oak* appellate court decision, the City of Santa Clarita revised the Gate-King EIR by preparing an additional environmental analysis responsive to the appellate court's decision. The City then certified the additional environmental analysis in 2006 and re-approved the Gate-King project. In 2007, the Los Angeles County Superior Court found that the revised Gate-King EIR met the requirements of CEQA, and entered judgment in favor of the City. Specifically, the trial court found that substantial evidence supported the City's conclusion that the 41,000 afy transfer was permanent and that it would continue to exist with or without the Monterey Agreement/ Amendments. The trial court's decision was appealed in November 2007 (*California Water Impact Network, et al. v. Newhall County Water District, et al.*,

[32] The above analysis in this section of the EIS/EIR explains in detail why it is appropriate to rely on the CLWA 41,000 afy transfer as part of CLWA's overall SWP water supplies.

Appellate Case No. B203781). The appeal is still pending; however, the revised EIR remains valid while the appeal is pending.

The second court case involved a separate legal challenge to an EIR under CEQA for the West Creek project located in Los Angeles County. This separate legal challenge was brought in Santa Barbara County Superior Court in *Santa Clarita Organization for Planning the Environment v. County of Los Angeles*, Case No. 1043805 (*West Creek* litigation). After a hearing, the Santa Barbara Superior Court issued an Order determining that the EIR prepared for the West Creek project contained substantial evidence in the record to support the County's decision to rely on the 41,000 afy transfer for planning purposes. The Order noted that substantial evidence appeared in the record to support the County's decision to rely on the 41,000 afy transfer, while acknowledging and disclosing the potential uncertainties involving the 41,000 afy transfer created by pending litigation. The Order summarized the evidence, including the fact that: (a) DWR continues to allocate and deliver the water in accordance with the amended water supply contract authorizing the 41,000 afy transfer; (b) neither the Monterey Agreement litigation, nor the Monterey Settlement Agreement set aside any of the water transfers made under the Monterey Agreement, including the 41,000 afy transfer; (c) the courts have not enjoined CLWA's use of the 41,000 af transfer; and (d) CLWA has prepared and certified a revised EIR on the 41,000 af transfer and that EIR is presumed adequate despite pending legal challenges. The Santa Barbara Superior Court Order in the *West Creek* litigation is provided in **Appendix 4.3** of this EIS/EIR. Thereafter, the *West Creek* decision was appealed.

As stated above, in *Santa Clarita Organization for Planning the Environment v. County of Los Angeles* (2007) 157 Cal.App.4th 149 (*SCOPE II*), the Second District Court of Appeal, Division Six, affirmed the trial court's decision upholding the validity of the EIR's water supply analysis for the West Creek development project in the Santa Clarita Valley, including the EIR's assessment and reliance upon the 41,000 afy water transfer. This EIS/EIR, **Appendix 4.3**, includes the published Court of Appeal decision, *Santa Clarita Organization for Planning the Environment v. County of Los Angeles* (2007) 157 Cal.App.4th 149 (*SCOPE II*).

The third court case involved another challenge to an EIR under CEQA for the Riverpark project located in the City of Santa Clarita, County of Los Angeles. This legal challenge was brought in Los Angeles County Superior Court in *Sierra Club, et al. v. City of Santa Clarita,* Case No. BS 098722 (Riverpark litigation).

After a hearing in the Riverpark litigation, the Los Angeles County Superior Court issued a decision determining that the City had properly relied on the 41,000 afy water transfer for planning purposes, and rejected petitioners' claims that legal uncertainties surrounding the 41,000 afy transfer due to other litigation (*e.g., Planning and Conservation League v. Department of Water Resources* (2000) 83 Cal.App.4th 892; *Friends of Santa Clara River v. CLWA* (2002) 95 Cal.App.4th 1373; and *California Oak Foundation v. City of Santa Clarita* (2005) 133 Cal.App.4th 1219) precluded the City from relying on water from that transfer for planning purposes. The court also determined that the 41,000 afy transfer was sufficiently certain and that the Monterey Settlement Agreement did not preclude the City from relying on the transfer in its EIR for the Riverpark project pending DWR's preparation of its Monterey Agreement EIR. Finally, the court found that substantial evidence in the EIR and record supported the City's decision that water from the 41,000 afy transfer could be relied on as part of CLWA's supplies. The

Los Angeles County Superior Court decision in the Riverpark litigation is provided in **Appendix 4.3** of this EIS/EIR.

The Riverpark trial court decision was appealed, and the appellate court decision was issued on January 29, 2008 (see this EIS/EIR, **Appendix 4.3**, for a copy of this appellate court decision, *Sierra Club et al. v. City of Santa Clarita, et al.* (Appellate Case No. B194771). In *Sierra Club*, the Second Appellate District, Division Three, affirmed the trial court's judgment, and held that the Riverpark EIR's water supply analysis was adequate under CEQA. Although *Sierra Club* was not a published decision, it provides further reasoned analysis supporting Los Angeles County's determination that the 41,000 afy transfer may be relied upon for planning purposes, while acknowledging and disclosing the potential uncertainty of that supply created by litigation, as well as DWR's on-going environmental review of the Monterey Agreement/Amendments.

4.3.4.6.3 Summary of Conclusions About Effect of Litigation on Sufficiency of Imported Water Supplies

Based on the above analysis, this EIS/EIR acknowledges that multiple court cases have been filed challenging the sufficiency of imported water supplies in the Santa Clarita Valley. Based on the status of these challenges, their likely outcome, and the fact that no court has yet set aside any of the water transfers or other physical activities approved under any of the challenged documents, it has been determined that substantial evidence exists in this EIS/EIR and record to support the conclusion that there is sufficient water to serve the proposed Project, the alternatives, as well as anticipated cumulative development in the Santa Clarita Valley.

4.3.4.6.4 Summary of Current Drought Conditions

In February 2008, Governor Arnold Schwarzenegger asked the Legislature for a plan to achieve a 20 percent reduction in per capital water use statewide by 2020, explaining that conservation is one of the key ways to provide water for Californians and to protect and improve the Delta ecosystem. In June 2008, after two consecutive years of below-average rainfall, low snowmelt runoff, and court-ordered water transfer restrictions, Governor Schwarzenegger announced a statewide drought and issued an Executive Order (S-06-08), which takes immediate action to address current drought conditions. The Executive Order directed DWR to, among other things: (1) facilitate water transfers to respond to shortages across the state due to drought conditions; (2) work with local water districts and agencies to improve local coordination; and (3) expedite existing grant programs to assist local water districts and agencies. The Executive Order also encourages local water districts and agencies to promote water conservation. Specifically, they are encouraged to work cooperatively on the regional and state level to take immediate action to reduce water consumption locally and regionally for the remainder of 2008 and prepare for potential worsening drought conditions in 2009.

In response to the Governor's Executive Order, DWR is implementing a number of actions to address the 2008/2009 drought conditions. For example, to help facilitate the exchange of water throughout the state, DWR has established a 2009 Drought Water Bank. To implement the 2009 Drought Water Bank, DWR will purchase water from willing sellers, primarily from water suppliers, upstream of the Sacramento-San Joaquin Delta. This water will be transferred using SWP or Central Valley Project (CVP) facilities to water suppliers that are at risk of experiencing water shortages in 2009 due to drought conditions and that

require supplemental water supplies to meet anticipated demands. Please refer to DWR's website, http://www.water.ca.gov/drought/docs/2009drought_actions.pdf (accessed April 6, 2009) for further information about the 2008/2009 drought conditions and DWR's response to those conditions.

Also in response to the Governor's Executive Order, in June 2008, the Metropolitan Water District of Southern California (MWD) issued a "Water Supply Alert" in Southern California urging local agencies to aggressively pursue conservation measures. On August 5, 2008, the County Board of Supervisors approved a resolution declaring a county-wide "water supply and conservation alert." The Board's resolution, among other things, urged intensification of water conservation efforts to achieve a 15 to 20 percent reduction in overall demand; requested local water purveyors and cities to accelerate and intensify public outreach campaigns to communicate the need for water conservation to the general public; and urged cities to update and adopt water wasting ordinances and prepare for enforcement of the ordinances, if necessary. The actions at the state, regional, and local level are likely to result in future regulatory action to strengthen the existing framework for water conservation.

Beginning with the first Strategic Growth Plan in 2006, the Governor called for a comprehensive plan to address California's water needs. The Governor renewed that call in his 2008-09 budget by proposing an $11.9 billion water bond for water management investments that will address population growth, climate change, water supply reliability and environmental needs. Specifically, the bond includes:

- **Water Storage:** $3.5 billion dedicated to the development of additional storage.
- **Delta Sustainability:** $2.4 billion to help implement a sustainable resource management plan for the Delta.
- **Water Resources Stewardship:** $1.1 billion to implement river restoration projects.
- **Water Conservation:** $3.1 billion to increase water use efficiency.
- **Water Quality Improvement:** $1.1 billion for efforts to reduce the contamination of groundwater.
- **Other Critical Water Projects:** $700 million for water recycling, hillside restoration for areas devastated by fire and removal of fish barriers on key rivers and streams.

To address California's third consecutive drought year, on February 27, 2009, Governor Schwarzenegger also proclaimed a state of emergency and ordered immediate action to manage California's water supplies. In the proclamation, the Governor used his authority to direct all state government agencies to utilize their resources, implement a state emergency plan, and provide assistance for people, communities, and businesses impacted by the drought. The proclamation:

- Requests that all urban water users immediately increase their water conservation activities in an effort to reduce their individual water use by 20 percent;
- Directs DWR to expedite water transfers and related efforts by water users and suppliers;

- Directs DWR to offer technical assistance to agricultural water suppliers and agricultural water users, including information on managing water supplies to minimize economic impacts and implementing efficient water management practices;

- Directs DWR to implement short-term efforts to protect water quality or water supply, such as the installation of temporary barriers in the Delta or temporary water supply connections;

- Directs the Labor and Workforce Development Agency to assist the labor market, including job training and financial assistance;

- Directs DWR to join with other appropriate agencies to launch a statewide water conservation campaign calling for all Californians to immediately decrease their water use;

- Directs state agencies to immediately implement a water use reduction plan and take immediate water conservation actions and requests that federal and local agencies also implement water use reduction plans for facilities within their control.

The proclamation also directs that by March 30, 2009, DWR must provide an updated report on the state's drought conditions and water availability. According to the proclamation, if the emergency conditions have not been sufficiently mitigated, the Governor will consider additional steps. These could include the institute of mandatory water rationing and mandatory reductions in water use; reoperation of major reservoirs in the state to minimize impacts of the drought; additional regulatory relief or permit streamlining as allowed under the Emergency Services Act; and other actions necessary to prevent, remedy, or mitigate the effects of the extreme drought conditions.

DWR and California's Department of Food and Agriculture will also recommend, within 30 days, measures to reduce the economic impacts of the drought, including but not limited to water transfers, through-Delta emergency transfers, water conservation measures, efficient irrigation practices, and improvements to the California Irrigation Management Information System.

The current drought conditions present significant short-term challenges to the provision of water supplies locally and statewide. Nonetheless, the current drought conditions are part of the historic and ongoing hydrologic cycle that occurs in California and CLWA and local retail purveyors have developed various contingencies in order to minimize short-term impacts on water supplies due to drought conditions. Such actions include voluntary/mandatory conservation measures, public outreach programs promoting efficient water use and conservation, water transfers, and use of "banked" water supplies, if necessary to meet demands in drought conditions.

However, the Revised Landmark Village WSA and this water analysis assess overall water supply availability and reliability over the long-term (i.e., the 20-year horizon called for by the Urban Water Management Planning Act), and include the effect of normal/average, dry, and multi-dry weather years from the historic record as modified for potential climate change impacts in reliance on DWR modeling estimates. (See DWR's *State Water Project Delivery Reliability Report 2007*, August 2008.) Based on that information, the Revised WSA and this analysis conclude that there is adequate water supplies for the proposed Landmark Village project, in addition to the existing and planned uses in the Santa Clarita Valley.

4.3.5 IMPACT SIGNIFICANCE CRITERIA

The significance criteria listed below are derived from Appendix G of the State CEQA Guidelines. The Corps has agreed to use the CEQA criteria presented below for purposes of this EIS/EIR, although significance conclusions are not expressly required under NEPA. The Corps also has applied federal requirements as appropriate in the EIS/EIR. Impacts to water resources would be significant if implementation of the proposed Project or its alternatives would:

1. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (Significance Criterion 1); or

2. Have insufficient water supplies available to serve the project from existing entitlements and resources, or result in the need for new or expanded entitlements (Significance Criterion 2).

In addition to the above criteria, and given the presence of ammonium perchlorate created by other land uses in the Santa Clarita Valley, impacts to water resources would be significant if implementation of the proposed Project or its alternatives would:

3. Result in the spreading of perchlorate in groundwater beyond the wells currently affected by perchlorate. (Significance Criterion 3).

4.3.6 IMPACTS OF PROPOSED PROJECT AND ALTERNATIVES

The analysis of direct, indirect, and secondary impacts on water supplies associated with the proposed Project and alternatives is presented below. Direct impacts focus on an assessment of the water resource impacts associated with implementation of the RMDP and SCP components of the proposed Project and alternatives. Indirect impacts focus on an assessment of the water resource impacts associated with development facilitated by approval of the proposed Project and alternatives. Specifically, RMDP approval would facilitate development of the approved Newhall Ranch Specific Plan, and SCP approval would create designated spineflower preserves within portions of the Specific Plan and the Entrada planning area, and authorize take of spineflower within the VCC and Entrada planning areas, all of which enables development of the Specific Plan, VCC, and a portion of Entrada. Secondary impacts focus on whether implementation of the proposed Project and alternatives would result in water resource impacts beyond the boundaries of the Project area. The impacts have been identified using the impact significance criteria applicable to the assessment of water supplies as described in the preceding section.

4.3.6.1 Impacts of Alternative 1 (No Action/No Project)

Alternative 1 (No Action/No Project) describes what would occur should the Corps and CDFG, as lead agencies, decide not to approve the federal and state permits and other approvals associated with the proposed Project (Alternative 2). Thus, absent the permits and other associated approvals, Alternative 1 would be in place, which would mean that the RMDP conservation, infrastructure, and facilitated development on the approved Specific Plan, the VCC planning area, and a portion of the Entrada planning area would not occur. In addition, under Alternative 1, none of the proposed spineflower preserves would be established, and none of the open space within the Project area would be dedicated and managed as contemplated by the proposed Project (Alternative 2).

The direct, indirect, and secondary impacts of implementing Alternative 1 are discussed below. Please refer to this EIS/EIR, **Section 3.0**, Description of Alternatives, for a more detailed description of the No Action/No Project alternative (Alternative 1), the proposed Project (Alternative 2), and the other alternatives (Alternatives 3-7).

4.3.6.1.1 Direct Impacts

RMDP Direct Impacts. Under Alternative 1 (No Action/No Project), no Project-related actions would be taken and the Project area would continue to be affected by agriculture/farming, grazing, oil and gas operations, and associated existing on-site activities. Under this alternative, there would be no construction or operation of the RMDP infrastructure (*e.g.*, bridges, road crossings, bank stabilization, drainage and water quality control facilities, tributary drainage modifications, storm drain insulation, Newhall Ranch WRP outfall, *etc*.), and none of the associated RMDP conservation, mitigation, and permitting strategies would be implemented. By not implementing the RMDP component of the proposed Project, no direct impacts would occur to groundwater supplies, recharge, groundwater levels in the basin, groundwater quality, or to the availability and sufficiency of existing or projected water supplies. In addition, by not implementing the RMDP, no new or expanded water supply entitlements or facilities would be needed. The Project area would continue to utilize groundwater from existing irrigation wells in order to serve present-day agriculture, farming, grazing, and oil and gas activities. There is no anticipated change in the intensity of these uses. Thus, there would be no changes to the existing water resources used within the RMDP study area, and no Project-related water resource impacts would occur.

SCP Direct Impacts. Under Alternative 1 (No Action/No Project), the SCP, which is a conservation plan that would establish conservation, mitigation, and permitting/take strategies for the spineflower located on the applicant's landholdings within the Project area, would not be implemented. No direct impacts would occur to groundwater supplies, recharge, groundwater levels in the basin, groundwater quality, or to the availability and sufficiency of existing or projected water supplies. In addition, by not implementing the SCP, no new or expanded water supply entitlements or facilities would be needed. Thus, there would be no changes to existing water resources in the Project area and no impacts on water resources would occur.

4.3.6.1.2 Indirect Impacts

RMDP Indirect Impacts. Under Alternative 1 (No Action/No Project), none of the RMDP infrastructure required to implement the previously approved Newhall Ranch Specific Plan would be constructed; and, therefore, no Specific Plan development would occur or be facilitated. Instead, the existing agriculture/farming, grazing, and oil and gas activities would be expected to continue within the RMDP study area. While it is possible that a limited portion of the RMDP study area might be developed with urban uses even if the RMDP infrastructure is not constructed, the type, amount, rate, and timing of such development is unknown and is not reasonably expected to occur in the foreseeable future. Therefore, any attempt to assess potential future impacts associated with such a development scenario would be speculative. Under this alternative, no indirect RMDP impacts would occur relative to Significance Criteria 1, 2, or 3. Absent RMDP approval, the Project area would remain largely in its existing condition, with no impacts to groundwater supplies, recharge, groundwater levels in the basin, groundwater quality (perchlorate), or to the availability and sufficiency of existing or projected water supplies. In addition, by not implementing the RMDP, no new or expanded water supply entitlements or facilities would be

needed. Thus, there would be no changes to the existing water resources used within the RMDP study area, and no Project-related water resource impacts would occur.

SCP Indirect Impacts. Under Alternative 1 (No Action/No Project), the SCP would not be adopted and development on the Specific Plan site and the VCC and Entrada planning areas would not be facilitated. Absent SCP approval, the Project area would remain largely in its existing condition, with no impacts to groundwater supplies, recharge, groundwater levels in the basin, groundwater quality (perchlorate), or to the availability and sufficiency of existing or projected water supplies. In addition, no new or expanded water supply entitlements or facilities would be needed. Thus, there would be no changes to existing water resources in the SCP study area and no impacts on water resources would occur relative to Significance Criteria 1, 2, or 3, above.

4.3.6.1.3 Secondary Impacts

RMDP Secondary Impacts. Under Alternative 1 (No Action/No Project), none of the RMDP infrastructure required to implement the previously approved Specific Plan would be developed. Therefore, Specific Plan build-out would not occur, and there would be no change to the existing land uses within the RMDP study area. By not implementing the RMDP and facilitating associated build-out of the Specific Plan, there would be no new development or changes in use or intensity of existing site conditions. Thus, no secondary impacts would occur to areas located beyond the boundaries of the RMDP study area or that would have the potential to cause significant impacts to water sources. Thus, there would be no secondary impacts to groundwater supplies, recharge, groundwater levels in the basin, groundwater quality, or to the availability and sufficiency of existing or projected water supplies. In addition, by not implementing the RMDP, no new or expanded water supply entitlements or facilities would be needed to serve any off-site areas.

SCP Secondary Impacts. Under Alternative 1 (No Action/No Project), the SCP would not be adopted and development on the Specific Plan site and the VCC and Entrada planning areas would not be facilitated. By not implementing the SCP and facilitating associated build-out of the Specific Plan, VCC , and a portion of Entrada, there would be no new development or change in use or intensity of existing site conditions. No secondary impacts would occur to areas located beyond the boundaries of the SCP study area or that would have the potential to cause significant impacts to water sources. Thus, there would be no secondary impacts to groundwater supplies, recharge, groundwater levels in the basin, groundwater quality, or to the availability and sufficiency of existing or projected water supplies. In addition, by not implementing the SCP, no new or expanded water supply entitlements or facilities would be needed to serve any off-site areas.

4.3.6.2 Impacts of Alternative 2 (Proposed Project)

The proposed Project, which is comprised of the RMDP and SCP components, would be implemented under this alternative, and development would be facilitated on the approved Specific Plan site, the VCC planning area, and a portion of the Entrada planning area. The direct, indirect, and secondary impacts of implementing both components of the proposed Project are discussed below. Please refer to this EIS/EIR, **Section 3.0**, Description of Alternatives, for a more detailed description of the proposed Project (Alternative 2) and other alternatives (Alternatives 3-7).

4.3.6.2.1 Direct Impacts

RMDP Direct Impacts. As described in **Section 2.0**, Project Description, and **Section 3.0**, Description of Alternatives, of this EIS/EIR, the RMDP component of the proposed Project consists of infrastructure in or adjacent to the Santa Clara River and tributaries located within the RMDP study area, which are needed to implement the approved Specific Plan. The RMDP infrastructure is comprised of three bridges and 16 new road-crossing culverts to serve the Specific Plan, bank stabilization, drainage and water quality control facilities, modifications to tributary drainages, storm drain installation, utility crossings, temporary haul routes, Newhall Ranch WRP outfall, maintenance, and other facilities and activities. No long-term operational water demand is associated with the RMDP infrastructure due to the static nature of the infrastructure and facilities to be constructed. Direct water supply impacts associated with construction of the RMDP infrastructure are addressed below. Once constructed, maintenance of the RMDP infrastructure (*e.g.*, bridges, road-crossing culverts, bank stabilization, drainage facilities) would require the use of negligible amounts of water. Thus, no direct significant impacts are associated with construction of the RMDP infrastructure. Nonetheless, potential direct impacts associated with RMDP infrastructure are discussed below relative to Significance Criteria 1, 2, and 3.

Impacts on Groundwater Supplies, Groundwater Recharge Volume or Levels (Significance Criterion 1). The RMDP component of the proposed Project is not expected to result in any impact on groundwater supplies. The applicant has utilized a low of 5,971 acre-feet to a high of 14,303 acre-feet of groundwater from the Alluvial aquifer and the Saugus Formation from 1980 through 2007.[33] This groundwater was used primarily for the applicant's agriculture, farming, and grazing operations. In contrast, the RMDP component would require only approximately 3.3 to 8.1 afy of water to install the RMDP infrastructure (*e.g.*, bridges, road-crossing culverts, bank stabilization). Construction water would either be trucked to the RMDP area, or come from existing on-site wells, located within the RMDP study area. This water demand is expected to be needed during the approximately 20-year construction period for the RMDP infrastructure to support Specific Plan build-out, and this demand is easily met by the applicant's groundwater supply.

Supplying water to the RMDP component would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge volume or levels (Significance Criterion 1). There are sufficient local groundwater supplies to support construction of the RMDP infrastructure, in addition to existing and future development in the Santa Clarita Valley. An evaluation of groundwater supplies in the 2005 UWMP and the 2005 Basin Yield Report resulted in the following findings: (a) both the Alluvial aquifer and the Saugus Formation are reasonable and sustainable sources of local water supplies at the yields stated in the 2005 UWMP; (b) the yields are not overstated and will not deplete or "dry-up" the groundwater basin; and (c) there is no need to reduce the yields for purposes of planning, as shown in both the 2005 UWMP and the 2005 Basin Yield Report. In addition, both reports determined that neither the Alluvial aquifer nor the Saugus Formation is in an overdraft condition, or projected to become overdrafted.

[33] See, 2007 Santa Clarita Valley Water Report (April 2008), Table II-7.

Impacts on Sufficiency of Water Supplies (Significance Criterion 2). As stated above, the RMDP component would require only approximately 3.3 to 8.1 afy of water to install the RMDP infrastructure (*e.g.*, bridges, road-crossing culverts, bank stabilization). The water would be used during grading and construction for soil preparation, compaction activities, and dust control. The water would be used during initial construction stages, and it would be either trucked to the RMDP area, or come from existing agricultural wells, located within the RMDP study area. From 1980 through 2007, the applicant's agricultural water usage ranged from a low of 5,971 acre-feet to a high of 14,303 acre-feet of groundwater. If the proposed Project is implemented, the applicant's agricultural water usage cannot exceed 7,038 afy (due to the Specific Plan mitigation requirement that the amount of groundwater pumped to serve the Specific Plan shall not exceed 7,038 afy; such requirement ensures that groundwater pumping will not result in a net increase in the applicant's groundwater use).[34]

Because the available and reliable groundwater supplies of the applicant exceed water demands for construction of the RMDP infrastructure, there are no water supply sufficiency impacts that would occur with implementation of the RMDP component of the proposed Project relative to Significance Criteria 2.

Need for New or Expanded Water Supply Entitlements (Significance Criterion 2). Based on the analysis provided in the two paragraphs above, there are available and reliable groundwater supplies to satisfy the water demands for construction of the RMDP component of the proposed Project. All such demands would be met by the applicant's groundwater supplies without the need for any new or expanded water supply entitlements.

Perchlorate Impacts on Groundwater Supplies (Significance Criterion 3). Installation and operation of the RMDP infrastructure would not use a substantial amount of groundwater. As indicated above, if the proposed Project is implemented, the applicant's agricultural water usage must not exceed 7,038 afy. The direct water demand to implement the RMDP component would be approximately 0.05 to 0.1 percent of the applicant's required agricultural water usage under the proposed Project. On that basis, and the fact that the area known to be impacted by perchlorate in the local groundwater basin is over four miles from the RMDP study area, installation and operation of the RMDP component would not result in the spread of perchlorate beyond presently affected wells. Therefore, there are no significant impacts associated with the RMDP component relative to Significance Criterion 3.

SCP Direct Impacts. The SCP component identifies a total of 167.6 acres of spineflower preserve areas within the Project area (*i.e.*, Airport Mesa, Grapevine Mesa, Potrero, and San Martinez Grande within the Specific Plan, and one Entrada preserve area). These SCP areas would conserve five out of six known spineflower occurrences within the SCP study area. The five preserve areas include approximately 68.6 percent of the total cumulative area occupied by spineflower. If the proposed Project is approved, spineflower occurrences in the VCC planning area, which account for approximately 4.2 percent of the total cumulative area occupied by spineflower within the SCP study area, would not be conserved, but rather the subject of a take under the spineflower Incidental Take Permit to be issued by CDFG, consistent with CESA (Fish and Game Code, section 2081, subdivision (b)).

[34] See, Newhall Ranch Revised Additional Analysis, Volume VIII (May 2003), Section 2.5, Water Resources, p. 2.5-245 (Mitigation Measure 4.11-15).

These preserve areas are part of the SCP's management and conservation framework that provides for the long-term persistence of spineflower within the Project area. As a conservation plan, the SCP does not generate a water demand *per se*. Instead, the SCP contains restoration activities within preserve areas. Specifically, disturbed portions (*i.e.*, agricultural lands, disturbed lands) of the preserve areas would be restored through revegetation with native plant communities. Under the SCP, the restoration must utilize locally indigenous plants appropriate to the habitat being restored. Under the SCP, habitat restoration sites may be temporarily irrigated to establish native plants and seed. However, according to the SCP, if irrigation is utilized, it must not alter pre-existing hydrologic conditions within the preserve areas and must be programmed to eliminate runoff. In addition, the SCP requires that the temporary irrigation system be used to establish plants and be scheduled to acclimate them to natural rainfall cycles. Under the SCP, temporary irrigation systems, which will be subject to pre-approval by CDFG, must be removed after a maximum of five years. (SCP, pp. 89-90; **Appendix 1.0**.)

If the SCP is approved as part of the proposed Project, the SCP design requirements for restoration areas must be implemented, and such implementation would not result in any significant impacts to groundwater supplies, recharge, groundwater levels in the basin, groundwater quality, or to the availability and sufficiency of existing or projected water supplies. In addition, by implementing the SCP, no new or expanded water supply entitlements or facilities would be needed to serve the SCP study area. Instead, the applicant's agricultural water supplies would be more than sufficient to meet the temporary irrigation needed for restoration areas within the preserves. Therefore, impacts would be less than significant under Significance Criterion 3.

4.3.6.2.2 Indirect Impacts

RMDP Indirect Impacts. Construction and operation of the RMDP component of the proposed Project would result in indirect impacts by facilitating the development of residential, mixed-use, and non-residential uses throughout the Specific Plan area. These impacts have been addressed in the applicable sections of this EIS/EIR. Please refer to this EIS/EIR, **Section 4.1**, Surface Water Hydrology and Flood Control; **Section 4.4**, Water Quality, **Section 4.5**, Biological Resources, **Section 4.7**, Air Quality, **Section 4.8**, Traffic, and **Section 4.9**, Noise.

Presented below is an analysis of the Specific Plan water demand and the supplies needed to meet that demand, if the RMDP component of the proposed Project is approved. The text below begins with an impact analysis of the Specific Plan's water demand and the sufficiency of the water supplies available to serve the Specific Plan from existing water entitlements and resources. Based on this analysis, no need exists for new or expanded water supply entitlements in order to meet the Specific Plan's water demand. Thus, as shown below, the Specific Plan development facilitated by the RMDP component of the proposed Project would not result in any significant water supply impacts relative to Significance Criterion 2. The text then analyzes the Specific Plan's water demand and associated supplies in the context of whether such demands would substantially deplete groundwater supplies or interfere substantially with groundwater recharge volumes or levels (Significance Criterion 1). Finally, the text analyzes the Specific Plan's water demand and associated supplies in the context of whether the Specific Plan water usage would result in the spread of perchlorate in the groundwater basin beyond the four perchlorate-impacted wells (Significance Criterion 3).

Impacts on Water Demand and Supplies (Significance Criterion 2).

Construction Impacts. Construction of the various Specific Plan land uses facilitated by RMDP approval would require grading of land surfaces. Such grading operations require the use of water in order to manage soil excavation and movement. The RMDP component would require a total of 5,831 af of water over the Specific Plan build-out period during site grading (*i.e.*, over approximately 25 years) if a pre-wetting technique is utilized, and 14,577 af of water if a dry grading technique is used. The source of the water to be used during Specific Plan grading activities would be the applicant's groundwater, historically and presently used for crop irrigation. Under the mitigation imposed by Los Angeles County, the amount of groundwater pumped to partially meet the potable water demands of the Specific Plan cannot exceed 7,038 afy (Mitigation Measure SP-4.11-15). To monitor groundwater usage, the applicant or its assignee must satisfy Los Angeles County's reporting requirements set forth in the required mitigation in order to ensure that the amount of groundwater used by the applicant does not exceed 7,038 afy, and does not result in a net increase in groundwater usage.

As shown on **Table 4.3-18** below, Specific Plan construction activities would require the use of between 194 and 486 afy, depending upon the techniques used. As this amount of water demand is far less than the available supply (2.7 and 6.9 percent of the 7,038 afy currently used, respectively), no significant Specific Plan construction water impact s would occur relative to Significance Criterion 2.

Table 4.3-18
Construction Water Demand (afy)

	Demand	% of Existing Agricultural Demand
Existing Agriculture	7,038	--
Alternative 1		
w/ Pre-Wetting	0	0.0%
Dry	0	0.0%
Alternative 2		
w/ Pre-Wetting	194	2.8%
Dry	486	6.9%
Alternative 3		
w/ Pre-Wetting	190	2.7%
Dry	476	6.8%
Alternative 4		
w/ Pre-Wetting	192	2.7%
Dry	479	6.8%
Alternative 5		
w/ Pre-Wetting	187	2.7%
Dry	468	6.6%
Alternative 6		
w/ Pre-Wetting	173	2.5%
Dry	432	6.1%
Alternative 7		
w/ Pre-Wetting	155	2.2%
Dry	388	5.5%

Source: Impact Sciences, Inc. (2008)

Operational Impacts. The methodology used to determine the Specific Plan's water demand is presented in the Newhall Ranch Revised Additional Analysis, Volume VIII (May 2003), Section 2.5, Water Resources. The summary provided below of the Specific Plan water demand is taken from the Newhall Ranch Revised Additional Analysis. However, since approval of the Specific Plan in May 2003, the Specific Plan's anticipated water demands have been refined. (See Technical Memorandum, *Water Demand Update for Newhall Ranch* (September 24, 2008), prepared by GSI Water Solutions, Inc., which is found in **Appendix 4.3** of this EIS/EIR).

The total revised water demand for the Specific Plan is estimated to be approximately 16,400 afy, which is down from the 17,680 afy originally forecasted (*i.e.*, an approximate seven percent reduction in demand). Of this total, potable demand is 8,135 afy and non-potable demand is 8,265 afy. Specific Plan demand also would increase by approximately 10 percent in years with lower than average local rainfall (a "dry year") to a total Specific Plan demand of 18,040 afy in that dry year. The Specific Plan water supply sources needed to meet this potable and non-potable water demand are described further below.

A portion of the Specific Plan's non-potable demand would be met with recycled water from the Newhall Ranch WRP. The availability of this source would occur in stages, mirroring the staged construction of the WRP on the Specific Plan site. Approximately 4,984 afy of the non-potable supply (treated discharges from the Newhall Ranch WRP) would be available to meet a portion of the Specific Plan's non-potable demand. The balance of the total non-potable demand (3,280 afy) would be met by using other recycled water from the two existing upstream WRPs, consistent with CLWA's "Reclamation Water System Master Plan." This additional recycled water supply would meet the remaining non-potable water demand of the Specific Plan. The source of CLWA's recycled water is imported water delivered to CLWA's service area, consumptively used, discharged to the two local WRPs, and made available for reuse under a contract between the Los Angeles County Sanitation Districts and CLWA (see 2005 UWMP, section 4.3.3).

In response to the Specific Plan's potable demand, the Specific Plan water supply sources to meet such demand would be: (a) the applicant's historical groundwater pumped from the Alluvial aquifer in Los Angeles County; (b) the applicant's additional water under contract with Nickel Family LLC in Kern County; and (c) the applicant's agreement with the Semitropic Water Storage District (SWSD) to bank water needed in dry years. Each of these supply sources is summarized further below, based on the Newhall Ranch Revised Additional Analysis, Section 2.5, Water Resources.

Newhall Agricultural Water. The project applicant would meet most of the potable water demands of the Specific Plan by using the water from the Alluvial aquifer that the applicant historically and presently uses for agricultural irrigation purposes on its land holdings. No additional water would be pumped; instead, the water presently used to irrigate crops would be pumped from sanitary-sealed municipal supply wells (as compared to open-air agricultural wells), treated at the wellhead to meet Title 22 drinking water standards, and then used to meet most of the potable demand, as agricultural areas are taken out of production. The total amount of groundwater that is available to the Specific Plan is 7,038 afy in both average and dry years. The Specific Plan would rely on that groundwater to partially meet the Specific Plan's revised potable water demand.

The agricultural land would ultimately be taken out of farming production as it is converted to non-agricultural Specific Plan land uses (the applicant is required to provide a report to Los Angeles County

with the submittal of each tract map application indicating the property(s) taken out of agricultural production in order to provide the needed water for that tract).[35] Since the water is already used to support the applicant's agricultural uses, there are not expected to be any significant environmental effects resulting from the water being used to meet the potable demands of the Specific Plan. Based on previously adopted mitigation by Los Angeles County, the amount of groundwater that would be used to serve the potable demands of the Specific Plan cannot exceed 7,038 afy.

Nickel Water and Semitropic Groundwater Banking Project. Two other Specific Plan water supplies (imported water referred to as Nickel Water and water from the Semitropic Groundwater Bank) are also available when needed. As indicated in the Newhall Ranch Revised Additional Analysis, Section 2.5, the applicant has secured water under contract with Nickel Family LLC in Kern County (Nickel water). This water is 100 percent reliable on a year-to-year basis, and not subject to the annual fluctuations that can occur in dry year conditions. The Nickel Water is part of a 10,000-acre-foot quantity of annual water supply that Nickel obtained from KCWA in 2001 pursuant to an agreement between Nickel, KCWA and Olcese Water District (Olcese). Under that agreement, Nickel has the right to sell the 10,000 afy to third parties both within or outside Kern County. Nickel Water is not subject to reductions in dry years and, therefore, is an extremely reliable water supply source for the Specific Plan. The water would be delivered through the KCWA and the SWP system. A point of delivery agreement between the CLWA and DWR would be required to transmit the water between the KCWA and CLWA service areas. DWR controls the SWP facilities, and CLWA controls the treatment and conveyance facilities, for the delivery of Nickel water in future years.

As shown in **Table 4.3-19**, Nickel water would only be needed on the Specific Plan site in years when all of the Newhall agricultural water has been used, which is estimated to occur after the 21st year of project construction. Up to that point in time, the unused Nickel water would be available for storage in groundwater banking programs on an annual basis. Given that the Specific Plan's potable water demand would mostly be met through the use of the applicant's groundwater, Nickel water would not be needed to serve the Specific Plan until the latter phases.

Until it is needed, the Nickel water would be acquired by the applicant annually (1,607 afy would be purchased), and the water stored in the Semitropic groundwater banking program, located in Kern County. **Table 4.3-19** shows that, at an annual storage rate of 1,607 af, a total of 37,281 af of Nickel water could be stored in groundwater banking facilities in the Semitropic water storage district groundwater banking program by Specific Plan build-out year 25. Thereafter, the stored Nickel water would be available for use on the Specific Plan site during dry years, thereby, avoiding the need for additional primary potable water supplies beyond these sources.

At build-out of the Specific Plan, it is expected that approximately 438 af of water from the Semitropic groundwater bank would be needed in a dry year to meet potable demands of the Specific Plan. Dry years are projected to occur once every four years. At this demand rate, the 37,281 af of Nickel water in storage would be available to meet this need for over 340 years.

[35] Please refer to the adopted Mitigation Monitoring Plan for the Specific Plan, Mitigation Measure SP-4.11-22 (**Appendix 1.0**).

Table 4.3-19
Nickel Water Use and Storage
Newhall Agricultural

Construction Year	Specific Plan Potable Water Demand (afy)	Water Supply Available to Specific Plan (afy)	Potable Water Source Applied to Specific Plan	Amount of Nickel Water in Storage (af)
0	0	7,038	**Newhall Agricultural Water**	
1	330	6,708	"	1,607
2	661	6,377	"	3,214
3	990	6,048	"	4,821
4	1,321	5,717	"	6,428
5	1,651	5,387	"	8,035
6	1,982	5,056	"	9,642
7	2,312	4,726	"	11,249
8	2,642	4,396	"	12,856
9	2,972	4,066	"	14,463
10	3,303	3,735	"	16,070
11	3,633	3,405	"	17,677
12	3,964	3,074	"	19,284
13	4,293	2,745	"	20,891
14	4,624	2,414	"	22,498
15	4,954	2,084	"	24,105
16	5,285	1,753	"	25,712
17	5,615	1,423	"	27,319
18	5,945	1,093	"	28,926
19	6,275	763	"	30,533
20	6,606	432	"	32,140
21[a]	6,936	102	**Plus Nickel Water**	33,747
22	7,267	(229)	"	35,125
23	7,596	(558)	"	36,174
24[b]	7,927	(889)	"	36,893
25	8,257	(1,219)	"	37,281
26 and Beyond	8,257	(1,219)		37,281

Notes:

[a] Starting in year 22, the Newhall agricultural water will be fully committed to the Specific Plan. Thereafter, Nickel water will be needed to meet the potable demands of the Specific Plan. Based on the refined Specific Plan water demand, only 1,219 of the 1,607 af Nickel water would be needed annually, leaving an annual 388 af of Nickel water surplus.

[b] By year 25, up to 37,281 af of Nickel water could be in storage.

Thus, as shown above, an adequate supply of water is available to meet the demands of the Specific Plan without creating significant environmental impacts and no new or expanded water entitlements are needed to meet the Specific Plan's water demand (Significance Criterion 2).

Impacts on Groundwater Supplies and Groundwater Recharge (Significance Criterion 1).

The amount of impervious ground cover affects the degree to which rainfall will be able to infiltrate to groundwater. In heavily industrialized areas, such as exists in portions of the Los Angeles Basin, recharge due to stormwater infiltration is highly restricted due to the high percentages of impervious surfaces. In contrast, stormwater that flows across impervious surfaces in the Santa Clarita Valley is routed to stormwater detention basins and to the Santa Clara River and its tributaries whose channels are predominantly natural and consist of vegetation and coarse-grained sediments. The porous nature of the sands and gravels forming the Santa Clara River mainstem and the tributary streambeds allow for significant infiltration to occur to the underlying Alluvial aquifer. Streamflow records and model calibration together demonstrate that year-to-year fluctuations in total recharge in the Santa Clarita Valley arise not just from year-to-year variations in incident rainfall within the Valley, but also from year-to-year variations in streamflows in the Santa Clara River and its tributaries. Long-term water level records for wells in the Alluvial aquifer show that groundwater levels and the amount of groundwater in storage in the Valley were similar in both the late 1990s and the early 1980s, despite a significant increase in the urbanized area during these two decades. This long-term stability is attributed, in part, to the significant volume of natural recharge from riverbed infiltration.

Groundwater recharge would not be substantially impacted by the water demands based on the best available information. This information shows that no adverse impacts on Basin recharge have occurred or would occur due to the existing or projected use of local groundwater supplies. Based on a memorandum prepared by CH2MHill (Effect of Urbanization on Aquifer Recharge in the Santa Clarita Valley, February 22, 2004; see **Appendix 4.3**), no significant impacts would occur to the groundwater basin with respect to aquifer recharge. Urbanization in the Santa Clarita Valley has been accompanied by long-term stability in pumping and groundwater levels and the addition of imported SWP water to the Valley; together, these actions have not reduced recharge to groundwater, nor depleted the amount or level of groundwater in storage within the local groundwater basin. These findings are also consistent with the CLWA/purveyor groundwater operating plan for the Basin (see EIS/EIR, **Appendix 4.3**, 2005 Basin Yield Report).

In March 2006, a technical memorandum, specific to the recharge of the Saugus Formation, was prepared by Luhdorff & Scalmanini Consulting Engineers in response to a condition of approval required by the Newhall Ranch Specific Plan Program EIR. This technical memorandum, *Evaluation of Groundwater Recharge Methods for the Saugus Formation in the Newhall Ranch Specific Plan Area*, is found in **Appendix 4.3** of this EIS/EIR. The technical memorandum evaluated the need for identifying land areas within the Specific Plan for recharge of the Saugus Formation. It concluded that there was no need to set aside land area for artificial recharge of the Saugus Formation within the Specific Plan. This conclusion is based on the following findings:

- Saugus Formation is generally recharged in the east to central portion of the basin, well east of the Specific Plan area. Groundwater flow in the basin is generally east to west with resulting groundwater discharge at the western end of the basin.

- The Specific Plan area overlies a small portion of the Saugus Formation at the far western end of the basin, where the basin is discharging water that flows downstream toward Ventura County.

- Historical observations for several decades have shown that there have been no long-term changes in groundwater storage or levels and that natural recharge processes have sustained groundwater levels, including long-term, essentially constant, high groundwater levels – without the need for artificial recharge operations to augment natural recharge to the basin.

- The future operating plan for the basin has been evaluated in both the 2005 UWMP and the 2005 Basin Yield Report; neither document calls for attempts to artificially recharge the basin.

- If artificial recharge of the Saugus Formation were to become desirable in the future, the recharge is hydrogeologically feasible through injection wells. This mechanism would alleviate the need to set aside land area for artificial recharge purposes, and would likely occur in the eastern portion of the Saugus Formation, not within the Specific Plan area. There would be no need for artificial recharge in the western part of the basin.

Currently, portions of the Specific Plan area are irrigated agricultural land. Some of these areas would be developed for the proposed Project, introducing impervious surface over approximately 30 percent of the Project area. The reduction in irrigated agriculture and the increase in paved area would reduce overall recharge; however, several factors would serve to counter the impact of urbanization on groundwater recharge within the Specific Plan area:

- Development within the Specific Plan area would increase runoff volume discharged after treatment (*e.g.*, in water quality control facilities) to the Santa Clara River, whose channel is predominantly natural and consists of vegetation and coarse-grained sediments. The porous nature of the sands and gravels forming the streambed allows for significant infiltration to occur to the Alluvial aquifer underlying the Santa Clara River;

- Development of the Specific Plan area would significantly increase the area of irrigated landscaping on currently undeveloped land, which would serve to increase the amount of recharge to the area; and

- The groundwater supply for the Specific Plan post-development would not require an increase in groundwater pumping beyond the applicant's existing agricultural allocation (7,038 afy). In addition, irrigation used in the Project area would increase the amount of recharge available to the Santa Clara River.

Based on the above information, the Specific Plan impacts on groundwater recharge and levels would be less than significant relative to Significance Criterion 1.

Perchlorate Impacted Water Purveyor Wells (Significance Criterion 3).

The Alluvial aquifer generally underlies the Santa Clara River and its several tributaries, and the Saugus Formation underlies practically the entire Upper Santa Clara River area. For additional information regarding the characteristics of the local groundwater basin and the relationship between the Alluvial Aquifer and the Saugus Formation, please see **Subsection 4.3.4.4**, Description of Groundwater Supplies, above.

As discussed above, perchlorate was detected in four Saugus Formation production wells near the former Whittaker-Bermite site in 1997. As a result, these wells (SCWD's Wells, Saugus 1 and Saugus 2, NCWD's Well NC-11, and VWC's Well V-157) were removed from service. In 2002, perchlorate was detected in the SCWD Stadium well, located in the Alluvial aquifer, directly adjacent to the former Whittaker-Bermite site. This Alluvial well also has been removed from service.

Since the detection of perchlorate and resultant inactivation of impacted wells, the purveyors have been conducting regular monitoring of active wells near the Whittaker-Bermite site. In April 2005, that monitoring detected the presence of perchlorate in VWC's Well Q2, an Alluvial well located immediately northwest of the confluence of Bouquet Creek and the Santa Clara River. The location of this well is shown on **Figures 4.3-7** and **4.3-8**, above. As a result of the detection and confirmation of perchlorate in its Well Q2, VWC removed the well from active service and pursued rapid permitting and installation of wellhead treatment in order to return the well to water supply service. In October 2005, VWC restored the pumping capacity of Well Q2 with the start-up of wellhead treatment designed to effectively remove perchlorate.

In January 2005, VWC permanently closed well V-157 and, in September 2005, completed the construction of new Saugus well V-206 located in an area of the Saugus Formation not impacted by perchlorate. VWC's V-206 is operational and replaces the pumping capacity temporarily impacted by the detection of perchlorate at former well V-157. In summary, three Saugus wells (Saugus 1 and 2 and NC-11) and one Alluvial well (SCWD Stadium well) remain off-line due to perchlorate contamination.

Locations of the impacted wells, and other nearby non-impacted wells, relative to the Whittaker-Bermite site are shown on **Figures 4.3-7** and **4.3-8**, above.

Restoration of Perchlorate-Impacted Water Supply. Since the detection of perchlorate in the four Saugus wells in 1997, CLWA and the retail purveyors have recognized that one element of an overall remediation program would most likely include pumping from impacted wells, or from other wells in the immediate area. Pumping from these wells would establish hydraulic conditions that would control the migration of contamination from further impacting the aquifer, in a downgradient (westerly) direction. Thus, CLWA and the retail purveyors report that the overall perchlorate remediation program includes dedicated pumping from some or all of the impacted wells, with appropriate treatment, such that two objectives could be achieved: (1) the control of subsurface flow and protection of downgradient wells; and (2) the restoration of some or all of the contaminated water supply. Not all impacted capacity is required for control of groundwater flow. The remaining capacity would be replaced by construction of replacement wells at non-impacted locations.

In cooperation with state regulatory agencies and investigators working for Whittaker-Bermite, CLWA and the local retail purveyors developed an off-site plan that focuses on groundwater flow control and restored pumping capacity. The plan is compatible with on-site and other off-site remediation activities. Specifically relating to water supply, the plan includes the following:

- Constructing and operating a water treatment process that removes perchlorate from two impacted wells such that the produced water can be used for municipal supply.

- Hydraulically containing the perchlorate contamination that is moving from the Whittaker-Bermite site toward the impacted wells by pumping the wells at rates that will capture water from all directions around them.

- Protecting the downgradient non-impacted wells through the same hydraulic containment that results from pumping two of the impacted wells.

- Restoring the annual volumes of water pumped from the inactivated perchlorate-impacted wells through either reactivating the wells with wellhead treatment or drilling replacement wells.

- Restoring the wells' total capacity to produce water in a manner consistent with the retail water purveyors' operating plan for groundwater supply described above.

The latest status report on the activities associated with the perchlorate contamination program is outlined in the Castaic Lake Water Agency Memorandum, Engineering and Operations Department Report, dated February 2, 2009, found in **Appendix 4.3** of this EIS/EIR.

An ion exchange treatment process utilizing a specialized resin has been selected for this project because of several factors including its performance in removing perchlorate and longevity service life. The two key activities that for implementation of the plan are general facilities-related work (design and construction of well facilities, treatment equipment, pipelines, *etc*.) and permitting work.

Both activities are planned and scheduled concurrently, resulting in planned completion (*i.e.*, restoration of all impacted capacity) in 2008. Notable recent accomplishments toward implementation include completion of the Interim Remedial Action Plan (RAP) in December 2005, the associated environmental review in September 2005, and various implementation activities in 2007 and 2008. The RAP was approved by DTSC in January 2006. Funding to cover remedial work has been secured by a settlement between Whittaker-Bermite and its insurance carriers, with several millions of dollars currently held in escrow. The escrowed funds will be used for implementation of the RAP. At this time, the Northern Alluvium containment system is operating. As of January 31, 2009, approximately 16,977,400 gallons of impacted waters have been treated and discharged from the Northern Alluvium.[36]

The perchlorate-impacted groundwater will remain unavailable as a local component of water supply for the Santa Clarita Valley through 2008. During this time, the non-impacted groundwater supply will be sufficient to meet near-term water requirements as described in Chapter 3 of the 2005 UWMP. Thereafter, the total groundwater capacity will be sufficient to meet the full range of normal and dry-year conditions as provided in the CLWA/retail water purveyor groundwater operating plan for the Basin.

Returning the contaminated Saugus wells to municipal water supply service by installing treatment requires issuance of permits from DPH before the water can be considered potable and safe for delivery to customers. The permit requirements are contained in DPH Policy Memo 97-005 for direct domestic use of impaired water sources.

[36] See AMEC letter to the Department of Toxics Substance Control,, dated March 19, 2009.

Before issuing a permit to a water utility for use of an impaired source as part of the utility's overall water supply permit, DPH requires that studies and engineering work be performed to demonstrate that pumping the wells and treating the water will be protective of public health and users of the water. The 97-005 Policy Memo requires that DPH review the local retail water purveyor's plan, establish appropriate permit conditions for the wells and treatment system, and provide overall approval of returning the impacted wells to service for potable use. Ultimately, the CLWA/local retail water purveyor plan and the DPH requirements are intended to ensure that water introduced to the potable water distribution system has no detectable concentration of perchlorate.

CLWA is currently working directly with the retail water purveyors and its consultants on development of the DPH 97-005 Policy Memo permit application. Two coordination workshops already have been held with DPH. Drafts of all six elements of the 97-005 Policy Memo have been submitted to DPH and the retail purveyors for review, including: the Source Water Assessment, Raw Water Quality Characterization, Source Protection Plan, Effective Monitoring and Treatment Evaluation, Human Health Risk Assessment, and the Alternatives Sources Evaluation. The Engineer's Report, which summarizes these six elements for the 97-005 process, was completed in 2006. The CEQA process for the "CLWA Groundwater Containment, Treatment, and Restoration Project," for which the DPH 97-005 process is being conducted, was completed in August 2005.[37]

As listed above, DPH 97-005 Policy Memo requires an analysis to demonstrate contaminant capture and protection of other nearby water supply wells. The groundwater flow model of the entire basin had been initiated as a result of a 2001 MOU among the Upper Basin Water Purveyors (CLWA, CLWA SCWD, LACWWD #36, NCWD, and VWC) and the United Water Conservation District in Ventura County.

The groundwater model was adaptable to analyze both the sustainability of groundwater under an operational scenario that includes full restoration of perchlorate-contaminated supply and the containment of perchlorate near the Whittaker-Bermite property (*i.e.*, by pumping some of the contaminated wells). In 2004, DTSC reviewed and approved the development and calibration of the regional model. After DTSC approval, the model was used to simulate the capture and control of perchlorate by restoring impacted wells, with treatment. The results of that work are summarized in a report entitled, *Analysis of Perchlorate Containment in Groundwater Near the Whittaker-Bermite Property, Santa Clarita, California* (CH2MHill, December 2004; see **Appendix 4.3**).

The modeling analysis indicates that the pumping of impacted wells SCWD-Saugus 1 and SCWD-Saugus 2 on a nearly continual basis will effectively contain perchlorate migrating westward in the Saugus Formation from the Whittaker-Bermite property. The modeling analysis also indicates that: (1) no new production wells are needed in the Saugus Formation to meet the perchlorate containment objective; (2) impacted well NCWD-11 is not a required component of the containment program; and (3) pumping at SCWD-Saugus 1 and SCWD-Saugus 2 is necessary to prevent migration of perchlorate to other portions of the Saugus Formation. This report, and the accompanying modeling analysis, was approved by DTSC in November 2004. With that approval, the model is being used to support the source water assessment and the balance of the permitting process required by DPH. (For additional information regarding

[37] For further information regarding this project, please refer to Appendix E of the 2005 UWMP.

ongoing groundwater monitoring and other activities related to the treatment of perchlorate-impacted groundwater and the planned return of this water to active public use in the Santa Clarita Valley, please see the Summary Report for the Month of November 2007, prepared by Geomatrix for DTSC, dated January 15, 2008, and Technical Memorandum No. 6, January 2007 Groundwater Monitoring Event, Eastern Santa Clara Subbasin Groundwater Study, Santa Clarita, California, prepared by CH2MHill for the U.S. Army Corps of Engineers, August 2007. Both documents are found in **Appendix 4.3** of this EIS/EIR.)

The water demand for the operation of the Specific Plan under Alternative 2 would be met by the applicant's groundwater supplies, which are presently used for agricultural operations and pumped from the Alluvial aquifer (operation of the Specific Plan would be served by municipal supply wells located in the VCC area, replacing the existing agricultural wells, which will be closed). No net increase in groundwater usage (*i.e.*, 7,038 afy) would occur due to the conversion of agricultural water to urban uses in order to implement the Specific Plan. As indicated above, because of the Specific Plan mitigation requirement to create no net increase in groundwater usage resulting from the Specific Plan, and the fact that the area in the basin known to be impacted by perchlorate is over four miles from the Specific Plan area, the Specific Plan would not result in the spread of perchlorate beyond the presently affected wells. Therefore, no significant impacts relative to the perchlorate-impacted groundwater would occur under Significance Criterion 3.

SCP Indirect Impacts. The SCP would facilitate development of the Specific Plan site, the VCC planning area, and a portion of the Entrada planning area. As a result, indirect impacts would occur from the conversion of existing land to urban uses on the Specific Plan, VCC, and Entrada areas. The indirect water demand and supply implications from SCP approval are described below. Water demands and supplies associated with implementation of the Specific Plan have been summarized above. Water demands and supplies relative to the VCC and Entrada planning areas are summarized below.

Total water demand associated with implementation of the remaining portion of the VCC industrial/business park is estimated to be approximately 1,080 afy. The water demands of VCC are included as part of the projected future water demand shown in the 2005 UWMP. Of this total, approximately 608 afy would be met with potable supplies and approximately 472 afy would be met with non-potable supplies. The VCC site is located within the Valencia Water Company service area. Water sources expected to be used by Valencia Water Company to serve the VCC site include a combination of SWP water delivered through CLWA and local groundwater resources from the Alluvial aquifer and the Saugus Formation. As shown in this EIS/EIR and the 2005 UWMP, water supplies exceed VCC demand, in addition to other existing and projected demand in the Santa Clarita Valley. Therefore, impacts associated with supplying water to the VCC site would be less than significant relative to Significance Criterion 2.

The proposed SCP also would result in implementing a portion of the Entrada planning area. The County of Los Angeles has not approved local land use entitlements for the Entrada planning area at this time.

The planned land uses adjacent to the Entrada preserve area include proposed residential uses to the west and open space to the north and southwest. Areas immediately to the south of the Entrada preserve area would remain existing golf course and residential, and the planned western extension of Magic Mountain Parkway would be located approximately 1,000 feet to the north of the Entrada preserve area. The total

water demand associated with implementation of the portion of the Entrada project facilitated by the SCP is estimated to be approximately 2,429 afy. The water demands of Entrada are included as part of the projected future water demand shown in the 2005 UWMP. Of this total, approximately 1,721 afy would be met with potable supplies and approximately 708 afy would be met from non-potable supplies. The Entrada site is located within the Valencia Water Company service area. Water sources expected to be used by Valencia Water Company to serve the Entrada site include a combination of SWP water delivered through CLWA and located groundwater resources from the Alluvial aquifer and the Saugus Formation. As shown in this EIS/EIR and the 2005 UWMP, water supplies exceed Entrada demand, in addition to other existing and projected demand in the Santa Clarita Valley. Therefore, impacts associated with supplying water to the Entrada site would be less than significant relative to Significance Criterion 2.

With regard to impacts associated with groundwater recharge, build-out of both VCC and Entrada would increase the amount of impervious surfaces overlying primarily the Saugus Formation portion of the basin. However, based on the work performed by CH2MHill and Luhdorff & Scalmanini Consulting Engineers discussed above, the VCC and Entrada planning areas are not significant groundwater recharge areas. The primary groundwater recharge areas consist of the Santa Clara River mainstem and its tributary streambeds, including Hasley Canyon located within the VCC planning area. The remaining build-out of the VCC commercial/industrial complex would not impact the Hasley Canyon tributary streambed. As a result, the Hasley Canyon tributary would remain a groundwater recharge area within the VCC planning area. Thus, if the SCP is approved, the development facilitated within VCC and a portion of Entrada would not result in any significant impacts to groundwater recharge or levels relative to Significance Criterion 1.

As to impacts associated with the spread of perchlorate in groundwater beyond the wells currently impacted (Significance Criterion 3), approval of the SCP would facilitate development within VCC and a portion of the Entrada planning areas. However, as discussed above, the facilitated development would not result in the spread of perchlorate beyond the four originally-impacted wells, located over four miles from the Project area.

In summary, the water demands for build-out of the Specific Plan, the VCC planning area, and a portion of the Entrada planning area, as facilitated by the proposed Project (Alternative 2), would be satisfied by available and reliable water supplies. **Table 4.3-20** summarizes the water supply and demands for the facilitated development within the Specific Plan, VCC, and Entrada under the proposed Project (Alternative 2). Under this alternative, the Specific Plan water supply (16,910 afy) exceeds the total water demand of 16,400 afy by 510 afy. Furthermore, the combined water demands of the Specific Plan, VCC, and Entrada (19,909 afy) are within the future demands presented in the 2005 UWMP (see **Table 4.3-10**, CLWA's Projected Water Demands, above). Consequently, no significant water supply impacts would occur under the proposed Project (Alternative 2).

Table 4.3-20
Alternative 2 Water Demand and Supplies

Water Supply	Alternative 2
Newhall Ranch Specific Plan	
Potable Water	
Newhall Agricultural Water	7,038
Nickel Water	1,607
Subtotal Potable Water	**8,645**
Non-Potable	
Newhall Ranch WRP	4,984
Other Recycled Water	3,281
Subtotal Non-Potable Water	**8,265**
Total NRSP Water Supply	**16,910**
Water Demand	
Newhall Ranch Specific Plan	
Potable	8,135
Non-Potable	8,265
Total	**16,400**
Valencia Commerce Center	
Potable	608
Non-potable	472
Total	**1,080**
Portion of Entrada	
Potable	1,721
Non-potable	708
Total	**2,429**
Combined Demand	**19,909**

Source: The Newhall Land and Farming Company, 2008, GSI Solutions, Inc., 2008

4.3.6.2.3 Secondary Impacts

RMDP Secondary Impacts. As stated above, the construction and operation-related direct and indirect impacts of the RMDP would be less than significant under Significance Criteria 1, 2, and 3 within the RMDP study area. Therefore, there would be no secondary water resource impacts relative to Significance Criteria 1, 2, or 3 to areas located beyond the boundary of the RMDP study area.

SCP Secondary Impacts. As stated above, the SCP component, if implemented, would result in less-than-significant impacts under Significance Criteria 1, 2, and 3 within the SCP study area. Thus, there would be no secondary water resource impacts relative to Significance Criteria 1, 2, or 3 to areas located beyond the boundary of the SCP study area.

4.3.6.3 Impacts of Alternative 3 (Elimination of Planned Potrero Bridge and Additional Spineflower Preserves)

In summary, Alternative 3 would modify the proposed RMDP and SCP, respectively, by eliminating the planned Potrero Canyon Road Bridge and increasing spineflower preserve acreage in the Specific Plan's Airport Mesa preserve and on Entrada. In addition, under Alternative 3, major tributary drainage channels

would be wider than the proposed Project (Alternative 2), and the cismontane alkali marsh in lower Potrero Canyon would be preserved. Alternative 3 would facilitate development within the Specific Plan, VCC, and Entrada, but to a lesser extent when compared to the proposed Project (Alternative 2). The direct, indirect, and secondary impacts of implementing Alternative 3 are discussed below. Please refer to this EIS/EIR, **Section 3.0**, Description of Alternatives, for a more detailed description of the proposed Project (Alternative 2) and other alternatives (Alternatives 3-7).

4.3.6.3.1 Direct Impacts

RMDP Direct Impacts. Alternative 3 would result in slightly less development acreage (approximately two percent less) than the RMDP component of the proposed Project (Alternative 2). The total construction water demand of Alternative 3 is estimated to range from 190 to 476 afy, which is 2.7 to 6.8 percent of the applicant's existing agricultural water demand of 7,038 afy.

Direct impacts relating to groundwater recharge would be similar in nature to Alternative 2. However, the magnitude of such impacts would be less, approximately proportionate to the reduction in grading area and amount of RMDP components. For example, as compared to Alternative 2, Alternative 3 would result in approximately 167 fewer acres being covered with impervious surfaces, and result in 10,800 fewer linear feet of buried bank stabilization being installed. Therefore, like Alternative 2, impacts relative to groundwater recharge would be less than significant under Significance Criterion 1.

The water demand generated by the RMDP component of Alternative 3 is able to be met with available water supplies. Thus, under Alternative 3, the impacts on water and groundwater supplies would be less than significant under Significance Criterion 2.

Regarding impacts related to perchlorate contamination, Alternative 3 would use 1,951 afy less water than the proposed Project (Alternative 2), resulting in a proportional reduction in the use of local groundwater. As previously indicated, the proposed Project and its alternatives would use local groundwater in amounts equal to or less than the amount historically used to support agricultural uses on the Specific Plan site (*i.e.*, 7,038 afy). Consequently, the proposed Project and its alternatives, including Alternative 3, would not result in the spread of perchlorate beyond presently affected wells, because the applicant cannot increase the amount of agricultural water pumped from the Alluvial aquifer (7,038 afy), and because the area known to be impacted by perchlorate is over four miles from the RMDP study area. Therefore, there are no significant impacts associated with the Alternative 3 RMDP component relative to Significance Criterion 3.

SCP Direct Impacts. Under Alternative 3, the SCP component would result in the establishment of six spineflower preserves located within the Specific Plan and the Entrada planning area, and the preserve areas would total approximately 221.8 acres. As a conservation plan, the SCP does not generate a water demand *per se*. Instead, the SCP contains restoration activities within preserve areas. Specifically, disturbed portions (*i.e.*, agricultural lands, disturbed lands) of the preserve areas would be restored through revegetation with native plant communities. Under the SCP, the restoration must utilize locally indigenous plants appropriate to the habitat being restored. Under the SCP, habitat restoration sites may be temporarily irrigated to establish native plants and seed. However, according to the SCP, if irrigation is utilized, it must not alter pre-existing hydrologic conditions within the preserve areas and must be programmed to eliminate runoff. In addition, the SCP requires that the temporary irrigation system be

used to establish plants and be scheduled to acclimate them to natural rainfall cycles. Under the SCP, temporary irrigation systems, which will be subject to pre-approval by CDFG, must be removed after a maximum of five years. (SCP, pp. 89-90; **Appendix 1.0**.)

Implementation of the Alternative 3 SCP design requirements for restoration areas would not result in any significant impacts to groundwater supplies, recharge, groundwater levels in the basin, groundwater quality, or to the availability and sufficiency of existing or projected water supplies. In addition, by implementing the Alternative 3 SCP, no new or expanded water supply entitlements or facilities would be needed to serve the SCP study area. Instead, the applicant's agricultural water supplies would be more than sufficient to meet the temporary irrigation needed for restoration areas within the preserves. Therefore, impacts would be less than significant under Significance Criterion 3.

4.3.6.3.2 Indirect Impacts

RMDP Indirect Impacts. The RMDP component of Alternative 3 would indirectly facilitate partial build-out of the Specific Plan by providing infrastructure improvements required for development of the previously approved Specific Plan. Alternative 3 would facilitate slightly less development acreage (approximately two percent less) than the proposed Project (Alternative 2). The total construction water demand of Alternative 3 is estimated to range from 190 to 476 afy, which is 2.7 to 6.8 percent of the applicant's existing agricultural water demand of 7,038 afy.

Under Alternative 3, there would be an incremental reduction in the amount of RMDP-facilitated development. The indirect operational water demand of Alternative 3 is estimated to be 15,652 afy, which is 4.5 percent less than the water demand of the proposed Project (Alternative 2). Indirect impacts related to groundwater recharge would be similar in nature to Alternative 2. However, the magnitude of such impacts would be less, approximately proportionate to the reduction in grading area and amount of RMDP components. For example, as compared to Alternative 2, Alternative 3 would result in approximately 167 fewer acres being covered with impervious surfaces, and result in 10,800 fewer linear feet of buried bank stabilization being installed. Therefore, like Alternative 2, impacts relative to groundwater recharge would be less than significant under Significance Criterion 1.

Because there are available water supplies to meet demand facilitated by Alternative 3, without creating any significant environmental impacts, and because this alternative would generate a water demand less than the proposed Project (Alternative 2), the water and groundwater supply impacts under this alternative, like Alternative 2, would be less than significant under Significance Criterion 2.

Regarding impacts related to perchlorate contamination, Alternative 3 would use 1,951 afy less water than the proposed Project (Alternative 2), resulting in a proportional reduction in the use of local groundwater. As previously indicated, the proposed Project and its alternatives would use local groundwater in amounts equal to or less than the amount historically used to support agricultural and other uses on the Specific Plan site (*i.e.*, 7,038 afy). Consequently, the proposed Project and its alternatives, including Alternative 3, would not result in the spread of perchlorate beyond presently affected wells, because the applicant cannot increase the amount of agricultural water pumped from the Alluvial aquifer (7,038 afy), and because the area known to be impacted by perchlorate is over four miles from the RMDP study area. Therefore, there are no significant impacts associated with the RMDP-facilitated development relative to Significance Criterion 3.

SCP Indirect Impacts. Establishment of the proposed spineflower preserves included in Alternative 3, as required under the SCP project component, would facilitate development of the Specific Plan, VCC planning area, and a portion of the Entrada planning area. As a result, indirect impacts would occur from the conversion of existing land to urban uses on the Specific Plan, VCC, and Entrada sites. The water demands and supplies associated with implementation of the Specific Plan have been summarized above. Water demands and supplies associated with the VCC and Entrada planning areas are summarized below.

Total water demand associated with implementation of the remaining portion of the VCC industrial/business park is estimated to be approximately 1,080 afy. The water demands of VCC are included as part of the projected future water demand shown in the 2005 UWMP. Of this total, 608 afy would be met with potable supplies and 472 afy would be met from non-potable supplies. The VCC site is located within the Valencia Water Company service area. Water sources expected to be used by Valencia Water Company to serve the VCC site include a combination of SWP water delivered through CLWA and located groundwater resources from the Alluvial aquifer and the Saugus Formation. As shown in this EIS/EIR and the 2005 UWMP, water supplies exceed VCC demand, in addition to other existing and projected demand in the Santa Clarita Valley. Therefore, impacts associated with supplying of water to the VCC site are less than significant under Significance Criterion 2.

Alternative 3 would implement a spineflower preserve area in the Entrada planning area. The County of Los Angeles has not approved local land use entitlements for the Entrada planning area at this time. Therefore, implementation of Alternative 3 would not facilitate new development that would have the potential to result in significant direct impacts upon water supplies in the Santa Clarita Valley. However, indirect impacts associated with proposed development adjacent to the Entrada preserve area are considered reasonably foreseeable because development applications have been submitted to the County for the Entrada planning area.

The planned land uses adjacent to the Entrada preserve area include proposed residential uses to the west and open space to the north and southwest. Areas immediately to the south of the Entrada preserve area would remain existing golf course and residential, and the planned western extension of Magic Mountain Parkway would be located approximately 1,000 feet to the north of the Entrada preserve area. The total water demand associated with implementation of a portion of the Entrada project facilitated by Alternative 3 is estimated to be approximately 1,226 afy. The water demands of Entrada are included as part of the projected future water demand shown in the 2005 UWMP. Of this total, 892 afy would be met with potable supplies and approximately 334 afy would be met from non-potable supplies. The Entrada site is located within the Valencia Water Company service area. Water sources expected to be used by Valencia Water Company to serve the Entrada site include a combination of SWP water delivered through CLWA and located groundwater resources from the Alluvial aquifer and the Saugus Formation. As shown in this EIS/EIR and the 2005 UWMP, water supplies exceed Entrada demand, in addition to other existing and projected demand in the Santa Clarita Valley. Therefore, impacts associated with supplying of water to the Entrada site would be less-than-significant under Significance Criterion 2.

With regards to impacts associated with groundwater recharge, build-out of both VCC and Entrada would increase the amount of impervious surfaces overlying primarily the Saugus Formation portion of the basin. However, based on the work performed by CH2MHill and Luhdorff & Scalmanini Consulting Engineers discussed above, the VCC and Entrada planning areas are not significant groundwater recharge

areas. The primary groundwater recharge areas consist of the Santa Clara River mainstem and its tributary streambeds. Consequently, if the Alternative 3 SCP is approved, the development facilitated within VCC and a portion of Entrada would not result in any significant impacts to groundwater recharge or levels relative to Significance Criterion 3.

As to impacts associated with the spread of perchlorate in the groundwater basin beyond the wells currently impacted (Significance Criterion 3), approval of the Alternative 3 SCP would facilitate development within VCC and a portion of the Entrada planning areas. However, as discussed above, the facilitated development would not result in the spread of perchlorate beyond the four originally-impacted wells, located over four miles from the Project area.

In summary, the water demands for build-out of the Specific Plan, the VCC planning area, and a portion of the Entrada planning area, as facilitated by Alternative 3, would be satisfied by available and reliable water supplies. **Table 4.3-21** summarizes the water supply and demands for the facilitated development within the Specific Plan, VCC, and Entrada under Alternative 3. Under this alternative, the Specific Plan water supply (16,373 afy) exceeds the total water demand of 15,652 afy by 721 afy. Furthermore, the combined water demands of the Specific Plan, VCC, and Entrada (17,958 afy) are within the future demands presented in the 2005 UWMP (see **Table 4.3-10**, CLWA's Projected Water Demands, above). Consequently, no significant water supply impacts would occur under Alternative 3.

Table 4.3-21
Alternative 3 Water Demand and Supplies

Water Supply	Alternative 3
Newhall Ranch Specific Plan	
Potable Water	
Newhall Agricultural Water	7,038
Nickel Water	1,607
Subtotal Potable Water	8,645
Non-Potable	
Newhall Ranch WRP	4,792
Other Recycled Water	2,936
Subtotal Non-Potable Water	7,728
Total NRSP Water Supply	**16,373**
Water Demand	
Newhall Ranch Specific Plan	
Potable	7,924
Non-Potable	7,728
Total	15,652
Valencia Commerce Center	
Potable	608
Non-potable	472
Total	1,080
Entrada	
Potable	892
Non-potable	334
Total	1,226
Combined Demand	**17,958**

Source: The Newhall Land and Farming Company, 2008, GSI Solutions, Inc. 2008

4.3.6.3.3 Secondary Impacts

RMDP Secondary Impacts. As stated above, construction and operation-related direct and indirect impacts of the RMDP would be less than significant under Significance Criteria 1, 2, and 3 within the RMDP study area. Therefore, there would be no secondary water resource impacts relative to Significance Criteria 1, 2, or 3 to areas located beyond the boundary of the RMDP study area.

SCP Secondary Impacts. As stated above, the SCP component, if implemented under Alternative 3, would result in less-than-significant impacts under Significance Criteria 1, 2, and 3 within the SCP study area. Thus, there would be no secondary water resource impacts relative to Significance Criteria 1, 2, or 3 to areas located beyond the boundary of the SCP study area.

4.3.6.4 Impacts of Alternative 4 (Elimination of Planned Potrero Bridge and Addition of VCC Spineflower Preserve)

In summary, Alternative 4 would modify the proposed RMDP and SCP, respectively, to eliminate Potrero Canyon Road Bridge, retain the spineflower preserve acreage added by Alternative 3, and increase further the preserve acreage in the Specific Plan's Airport Mesa, Potrero, and Grapevine Mesa preserves, and on Entrada. Alternative 4 also would add a spineflower preserve in the VCC planning area, precluding completion of development of the remaining VCC commercial/ industrial complex. In addition, under Alternative 4, major tributary drainage channels would be regraded and realigned, but, like Alternative 3, the cismontane alkali marsh in lower Potrero Canyon would be preserved. Alternative 4 would facilitate development within the Specific Plan and Entrada, but to a lesser extent when compared to the proposed Project (Alternative 2). The direct, indirect, and secondary impacts of implementing Alternative 4 are discussed below. Please refer to this EIS/EIR, **Section 3.0**, Description of Alternatives, for a more detailed description of the proposed Project (Alternative 2) and other alternatives (Alternatives 3-7).

4.3.6.4.1 Direct Impacts

RMDP Direct Impacts. Alternative 4 would result in less development acreage (approximately eight percent less) than the RMDP component of the proposed Project (Alternative 2). The total construction water demand of Alternative 4 is estimated to range from 192 to 479 afy, which is 2.7 to 6.8 percent of the applicant's existing agricultural water demand of 7,038 afy.

Direct impacts relating to groundwater recharge would be similar in nature to Alternative 2. However, the magnitude of such impacts would be less, approximately proportionate to the reduction in grading area and amount of RMDP components. For example, as compared to Alternative 2, Alternative 4 would result in approximately 346 fewer acres being covered with impervious surfaces and result in 11,930 fewer linear feet of buried bank stabilization being installed. Therefore, like Alternative 2, impacts relative to groundwater recharge would be less than significant under Significance Criterion 1.

The water demand generated by the RMDP component of Alternative 4 is able to be met with available water supplies. Thus, under Alternative 4, the impacts on water and groundwater supplies would be less than significant under Significance Criteria 2.

Regarding impacts related to perchlorate contamination, Alternative 4 would use 2,613 afy less water than the proposed Project (Alternative 2), resulting in a proportional reduction in the use of local groundwater. As previously indicated, the proposed Project and its alternatives would use local groundwater in amounts equal to or less than the amount historically used to support agricultural and other uses on the Specific Plan site (*i.e.*, 7,038 afy). Consequently, the proposed Project and its alternatives, including Alternative 4, would not result in the spread of perchlorate beyond presently affected wells, because the applicant cannot increase the amount of agricultural water pumped from the Alluvial aquifer (7,038 afy), and because the area known to be impacted by perchlorate is over four miles from the RMDP study area. Therefore, there are no significant impacts associated with the Alternative 4 RMDP component relative to Significance Criterion 3.

SCP Direct Impacts. Under Alternative 4, the SCP component would result in the establishment of eight spineflower preserves, including a preserve on the VCC site. A total of approximately 259.9 acres of

spineflower preserve would be established under this alternative. As a conservation plan, the SCP does not generate a water demand *per se*. Instead, the SCP contains restoration activities within preserve areas. Specifically, disturbed portions (*i.e.*, agricultural lands, disturbed lands) of the preserve areas would be restored through revegetation with native plant communities. Under the SCP, the restoration must utilize locally indigenous plants appropriate to the habitat being restored. Under the SCP, habitat restoration sites may be temporarily irrigated to establish native plants and seed. However, according to the SCP, if irrigation is utilized, it must not alter pre-existing hydrologic conditions within the preserve areas and must be programmed to eliminate runoff. In addition, the SCP requires that the temporary irrigation system be used to establish plants and be scheduled to acclimate them to natural rainfall cycles. Under the SCP, temporary irrigation systems, which will be subject to pre-approval by CDFG, must be removed after a maximum of five years. (SCP, pp. 89-90; **Appendix 1.0**.)

Implementation of the Alternative 4 SCP design requirements for restoration areas would not result in any significant impacts to groundwater supplies, recharge, groundwater levels in the basin, groundwater quality, or to the availability and sufficiency of existing or projected water supplies. In addition, by implementing the Alternative 4 SCP, no new or expanded water supply entitlements or facilities would be needed to serve the SCP study area. Instead, the applicant's agricultural water supplies would be more than sufficient to meet the temporary irrigation needed for restoration areas within the preserves. Therefore, impacts would be less than significant under Significance Criterion 3.

4.3.6.4.2 Indirect Impacts

RMDP Indirect Impacts. The RMDP component of Alternative 4 would indirectly facilitate partial build-out of the Specific Plan by providing infrastructure improvements required for development of the previously approved Specific Plan. Alternative 4 would facilitate slightly less development acreage (approximately eight percent less) than the proposed Project (Alternative 2). The total construction water demand of Alternative 4 is estimated to range from 190 to 476 afy, which is 2.7 to 6.8 percent of the applicant's existing agricultural water demand of 7,038 afy.

Under Alternative 4, there would be an incremental reduction in the amount of RMDP-facilitated development. The indirect operational water demand of Alternative 4 is estimated to be 16,070 afy, which is approximately 2 percent less than the water demand of the proposed Project (Alternative 2). Indirect impacts related to groundwater recharge would be similar in nature to Alternative 2. However, the magnitude of such impacts would be less, approximately proportionate to the reduction in grading area and amount of RMDP components. For example, as compared to Alternative 2, Alternative 4 would result in approximately 346 fewer acres being covered with impervious surfaces and result in 11,930 fewer linear feet of buried bank stabilization being installed. Therefore, like Alternative 2, impacts relative to groundwater recharge would be less than significant under Significance Criterion 1.

Because there are available water supplies to meet demand facilitated by Alternative 4, without creating any significant water supply impacts, and because this alternative would generate a water demand less than the proposed Project, the overall water supply impacts under this alternative would be less-than-significant under Significance Criterion 2.

Regarding impacts related to perchlorate contamination, Alternative 4 would use 2,613 afy less water than the proposed Project (Alternative 2), resulting in a proportional reduction in the use of local groundwater.

As previously indicated, the proposed Project and its alternatives would use local groundwater in amounts equal to or less than the amount historically used to support agricultural and other uses on the Specific Plan site (*i.e.*, 7,038 afy). Consequently, the proposed Project and its alternatives, including Alternative 4, would not result in the spread of perchlorate beyond presently affected wells, because the applicant cannot increase the amount of agricultural water pumped from the Alluvial aquifer (7,038 afy), and because the area known to be impacted by perchlorate is over four miles from the RMDP study area. Therefore, there are no significant impacts associated with the RMDP-facilitated development relative to Significance Criterion 3.

SCP Indirect Impacts. Establishment of the proposed spineflower preserves included in Alternative 4, as required under the SCP project component, would facilitate development of the Specific Plan planning area, because that area already has received local land use approval. As a result, indirect impacts would occur from the conversion of existing land to urban uses on the Specific Plan site. Water demands and supplies associated with implementation of the Specific Plan have been summarized above.

Water demands and supplies associated with implementation of a portion of the Entrada planning area are summarized below. (Under Alternative 4, a spineflower preserve would be established in the VCC planning area; and, therefore, no development would occur. As a result, there would be no facilitated development within the VCC planning area. Accordingly, under Alternative 4, there would be no indirect impacts resulting from facilitated development in the VCC planning area.)

Alternative 4 would implement a spineflower preserve area in the Entrada planning area. The County of Los Angeles has not approved local land use entitlements for the Entrada planning area at this time. Therefore, implementation of Alternative 4 would not facilitate new development that would have the potential to result in significant direct impacts upon water supplies in the Santa Clarita Valley. However, indirect impacts associated with proposed development adjacent to the Entrada preserve area are considered reasonably foreseeable because development applications have been submitted to the County for the Entrada planning area.

The planned land uses adjacent to the Entrada preserve area include proposed residential uses to the west and open space to the north and southwest. Areas immediately to the south of the Entrada preserve area would remain existing golf course and residential. The planned western extension of Magic Mountain Parkway would be located approximately 1,000 feet to the north of the Entrada preserve area. The total water demand associated with implementation of a portion of the Entrada project facilitated by Alternative 4 is estimated to be approximately 1,226 afy. The water demands of Entrada are included as part of the projected future water demand shown in the 2005 UWMP. Of this total, 892 afy would be met with potable supplies and approximately 334 afy would be met from non-potable supplies. The Entrada site is located within the Valencia Water Company service area. Water sources expected to be used by Valencia Water Company to serve the Entrada site include a combination of SWP water delivered through CLWA and located groundwater resources from the Alluvial aquifer and the Saugus Formation. As shown in this EIS/EIR and the 2005 UWMP, water supplies exceed Entrada demand, in addition to other existing and projected demand in the Santa Clarita Valley. Therefore, impacts associated with supplying of water to the Entrada site would be less than significant under Significance Criterion 2.

With regards to impacts associated with groundwater recharge, build-out of Entrada would increase the amount of impervious surfaces overlying primarily the Saugus Formation portion of the basin. However, based on the work performed by CH2MHill and Luhdorff & Scalmanini Consulting Engineers discussed

above, the Entrada planning area is not a significant groundwater recharge area. The primary groundwater recharge areas consist of the Santa Clara River mainstem and its tributary streambeds. Consequently, if the Alternative 4 SCP is approved, the development facilitated within a portion of Entrada would not result in any significant impacts to groundwater recharge or levels relative to Significance Criterion 3.

As to impacts associated with the spread of perchlorate in the groundwater basin beyond the wells currently impacted (Significance Criterion 3), approval of the Alternative 4 SCP would facilitate development within a portion of the Entrada planning area. However, as discussed above, the facilitated development would not result in the spread of perchlorate beyond the four originally-impacted wells, located over four miles from the Project area.

In summary, the water demands for build-out of the Specific Plan and a portion of the Entrada planning area, as facilitated by Alternative 4, would be satisfied by available and reliable water supplies. **Table 4.3-22** summarizes the water supply and demands for the facilitated development within the Specific Plan and Entrada under Alternative 4. Under this alternative, the Specific Plan water supply (16,579 afy) exceeds the total water demand of 16,070 afy by_509 afy. Furthermore, the combined water demands of the Specific Plan and Entrada (17,296 afy) are within the future demands presented in the 2005 UWMP (see **Table 4.3-10**, CLWA's Projected Water Demands, above). Consequently, no significant water supply impacts would occur under Alternative 4.

Table 4.3-22
Alternative 4 Water Demand and Supplies

Water Supply	Alternative 4
Newhall Ranch Specific Plan	
Potable Water	
Newhall Agricultural Water	7,038
Nickel Water	1,607
Subtotal Potable Water	**8,645**
Non-Potable	
Newhall Ranch WRP	4,920
Other Recycled Water	3,014
Subtotal Non-Potable Water	**7,934**
Total NRSP Water Supply	**16,579**
Water Demand	
NRSP	
Potable	8,136
Non-Potable	7,934
Total	**16,070**
Entrada	
Potable	892
Non-potable	334
Total	**1,226**
Combined Demand	**17,296**

Source: The Newhall Land and Farming Company, 2007

4.3.6.4.3 Secondary Impacts

RMDP Secondary Impacts. As stated above, construction and operation-related direct and indirect impacts of the RMDP would be less than significant under Significance Criteria 1, 2, and 3 within the RMDP study area. Therefore, there would be no secondary water resource impacts relative to Significance Criteria 1, 2, or 3 to areas located beyond the boundary of the RMDP study area.

SCP Secondary Impacts. As stated above, the SCP component, if implemented under Alternative 4, would result in less-than-significant impacts under Significance Criteria 1, 2, and 3 within the SCP study area. Thus, there would be no secondary water resource impacts relative to Significance Criteria 1, 2, or 3 to areas located beyond the boundary of the SCP study area.

4.3.6.5 Impacts of Alternative 5 (Widen Tributary Drainages and Addition of VCC Spineflower Preserve)

In summary, Alternative 5 would modify the proposed RMDP and SCP, respectively, by widening tributary drainages, adding a spineflower preserve within the VCC planning area (precluding development), and including the same three bridge crossings over the Santa Clara River as the proposed Project (Alternative 2). This alternative also would increase further the preserve acreage in the Specific Plan's Airport Mesa, Potrero, and Grapevine Mesa preserves, and on Entrada. Alternative 5 would facilitate development within the Specific Plan and Entrada, but to a lesser extent when compared to the proposed Project (Alternative 2). The direct, indirect, and secondary impacts of implementing Alternative 5 are discussed below. Please refer to this EIS/EIR, **Section 3.0**, Description of Alternatives, for a more detailed description of the proposed Project (Alternative 2) and other alternatives (Alternatives 3-7).

4.3.6.5.1 Direct Impacts

RMDP Direct Impacts. Alternative 5 would result in less development acreage (approximately ten percent less) than the RMDP component of the proposed Project (Alternative 2). The total construction water demand of Alternative 5 is estimated to range from 187 to 468 afy, which is 2.7 to 6.6 percent of the applicant's existing agricultural water demand of 7,038 afy.

Direct impacts relating to groundwater recharge would be similar in nature to Alternative 2. However, the magnitude of such impacts would be less, approximately proportionate to the reduction in grading area and amount of RMDP components. For example, as compared to Alternative 2, Alternative 5 would result in approximately 423 fewer acres being covered with impervious surfaces and result in 15,549 fewer linear feet of buried bank stabilization being installed. Therefore, like Alternative 2, impacts relative to groundwater recharge would be less than significant under Significance Criterion 1.

The water demand generated by the RMDP component of Alternative 5 is able to be met with available water supplies. Thus, under Alternative 5, the impacts on water supplies would be less than significant under Significance Criterion 2.

Regarding impacts related to perchlorate contamination, Alternative 5 would use 3,492 afy less water than the proposed Project (Alternative 2), resulting in a proportional reduction in the use of local groundwater. As previously indicated, the proposed Project and its alternatives would use local groundwater in amounts

equal to or less than the amount historically used to support agricultural and other uses on the Specific Plan site (*i.e.*, 7,038 afy). Consequently, the proposed Project and its alternatives, including Alternative 5, would not result in the spread of perchlorate beyond presently affected wells, because the applicant cannot increase the amount of agricultural water pumped from the Alluvial aquifer (7,038 afy), and because the area known to be impacted by perchlorate is over four miles from the RMDP study area. Therefore, there are no significant impacts associated with the Alternative 5 RMDP component relative to Significance Criterion 3.

SCP Direct Impacts. Under Alternative 5, the SCP component would result in the establishment of eleven spineflower preserves, including a preserve on the VCC site. A total of approximately 338.6 acres of spineflower preserve would be established under this alternative. As a conservation plan, the SCP does not generate a water demand *per se*. Instead, the SCP contains restoration activities within preserve areas. Specifically, disturbed portions (*i.e.*, agricultural lands, disturbed lands) of the preserve areas would be restored through revegetation with native plant communities. Under the SCP, the restoration must utilize locally indigenous plants appropriate to the habitat being restored. Under the SCP, habitat restoration sites may be temporarily irrigated to establish native plants and seed. However, according to the SCP, if irrigation is utilized, it must not alter pre-existing hydrologic conditions within the preserve areas and must be programmed to eliminate runoff. In addition, the SCP requires that the temporary irrigation system be used to establish plants and be scheduled to acclimate them to natural rainfall cycles. Under the SCP, temporary irrigation systems, which will be subject to pre-approval by CDFG, must be removed after a maximum of five years. (SCP, pp. 89-90; **Appendix 1.0**.)

Implementation of the Alternative 5 SCP design requirements for restoration areas would not result in any significant impacts to groundwater supplies, recharge, groundwater levels in the basin, groundwater quality, or to the availability and sufficiency of existing or projected water supplies. In addition, by implementing the Alternative 5 SCP, no new or expanded water supply entitlements or facilities would be needed to serve the SCP study area. Instead, the applicant's agricultural water supplies would be more than sufficient to meet the temporary irrigation needed for restoration areas within the preserves. Therefore, impacts would be less than significant under Significance Criterion 3.

4.3.6.5.2 Indirect Impacts

RMDP Indirect Impacts. The RMDP component of Alternative 5 would indirectly facilitate partial build-out of the Specific Plan by providing infrastructure improvements required for development of the previously approved Specific Plan. Alternative 5 would facilitate less development acreage (approximately 10 percent less) than the proposed Project (Alternative 2). The total construction water demand of Alternative 5 is estimated to range from 190 to 476 afy, which is 2.7 to 6.8 percent of the applicant's existing agricultural water demand of 7,038 afy.

Under Alternative 5, there would be an incremental reduction in the amount of RMDP-facilitated development. The indirect operational water demand of Alternative 5 is estimated to be 15,284 afy, which is approximately 7 percent less than the water demand of the proposed Project (Alternative 2). Indirect impacts related to groundwater recharge would be similar in nature to Alternative 2. However, the magnitude of such impacts would be less, approximately proportionate to the reduction in grading area and amount of RMDP components. For example, as compared to Alternative 2, Alternative 5 would result in approximately 423 fewer acres being covered with impervious surfaces and result in 15,549 fewer

linear feet of buried bank stabilization being installed. Therefore, like Alternative 2, impacts relative to groundwater recharge would be less than significant under Significance Criterion 1.

Because there are available water supplies to meet demand generated by Alternative 5, without creating any significant environmental impacts, and because this alternative would generate a water demand less than the proposed Project, the water supply impacts under this alternative would be less than significant under Significance Criterion 2.

Regarding impacts related to perchlorate contamination, Alternative 5 would use 3,492 afy less water than the proposed Project (Alternative 2), resulting in a proportional reduction in the use of local groundwater. As previously indicated, the proposed Project and its alternatives would use local groundwater in amounts equal to or less than the amount historically used to support agricultural and other uses on the Specific Plan site (*i.e.*, 7,038 afy). Consequently, the proposed Project and its alternatives, including Alternative 5, would not result in the spread of perchlorate beyond presently affected wells, because the applicant cannot increase the amount of agricultural water pumped from the Alluvial aquifer (7,038 afy), and because the area known to be impacted by perchlorate is over four miles from the RMDP study area. Therefore, there are no significant impacts associated with the RMDP-facilitated development relative to Significance Criterion 3.

SCP Indirect Impacts. Establishment of the proposed spineflower preserves included in Alternative 5, as required under the SCP project component, would facilitate development of the Specific Plan planning area, because that area already has received local land use approval. As a result, indirect impacts would occur from the conversion of existing land to urban uses on the Specific Plan site. The water demands and supplies associated with implementation of the Specific Plan have been summarized above.

Water demands and supplies associated with implementation of a portion of the Entrada planning area is summarized below. (Under Alternative 5, a spineflower preserve would be established in the VCC planning area; and, therefore, no development would occur. As a result, there would be no facilitated development within the VCC planning area. Accordingly, there would be no indirect impacts resulting from facilitated development in the VCC planning area.)

Alternative 5 would implement a spineflower preserve area in the Entrada planning area. The County of Los Angeles has not approved local land use entitlements for the Entrada planning area at this time. Therefore, implementation of Alternative 5 would not facilitate new development that would have the potential to result in significant direct impacts upon water supplies in the Santa Clarita Valley. However, indirect impacts associated with proposed development adjacent to the Entrada preserve area are considered reasonably foreseeable because development applications have been submitted to the County for the Entrada planning area.

The planned land uses adjacent to the Entrada preserve area include proposed residential uses to the west and open space to the north and southwest. Areas immediately to the south of the Entrada preserve area would remain existing golf course and residential, and the planned western extension of Magic Mountain Parkway would be located approximately 1,000 feet to the north of the Entrada preserve area. The total water demand associated with implementation of a portion of the Entrada project facilitated by Alternative 5 is estimated to be approximately 1,133 afy. The water demands of Entrada are included as part of the projected future water demand shown in the 2005 UWMP. Of this total, 814 afy would be met

with potable supplies and approximately 319 afy would be met from non-potable supplies. The Entrada site is located within the Valencia Water Company service area. Water sources expected to be used by Valencia Water Company to serve the Entrada site include a combination of SWP water delivered through CLWA and located groundwater resources from the Alluvial aquifer and the Saugus Formation. As shown in this EIS/EIR and the 2005 UWMP, water supplies exceed Entrada demand, in addition to other existing and projected demand in the Santa Clarita Valley. Therefore, potential impacts associated with supplying of water to the Entrada site would be less than significant under Significance Criterion 2.

With regards to impacts associated with groundwater recharge, build-out of Entrada would increase the amount of impervious surfaces overlying primarily the Saugus Formation portion of the basin. However, based on the work performed by CH2MHill and Luhdorff & Scalmanini Consulting Engineers discussed above, the Entrada planning area is not a significant groundwater recharge area. The primary groundwater recharge areas consist of the Santa Clara River mainstem and its tributary streambeds. Consequently, if the Alternative 5 SCP is approved, the development facilitated within a portion of Entrada would not result in any significant impacts to groundwater recharge or levels relative to Significance Criterion 3.

As to impacts associated with the spread of perchlorate in the groundwater basin beyond the wells currently impacted (Significance Criterion 3), approval of the Alternative 5 SCP would facilitate development within a portion of the Entrada planning area. However, as discussed above, the facilitated development would not result in the spread of perchlorate beyond the four originally-impacted wells, located over four miles from the Project area.

In summary, the water demands for build-out of the Specific Plan and a portion of the Entrada planning area, as facilitated by Alternative 5, would be satisfied by available and reliable water supplies. **Table 4.3-23** summarizes the water supply and demands for the facilitated development within the Specific Plan and Entrada under Alternative 5. Under this alternative, the Specific Plan water supply (16,191 afy) exceeds the total water demand of 15,284 afy by 907 afy. Furthermore, the combined water demands of the Specific Plan and Entrada (16,417 afy) are within the future demands presented in the 2005 UWMP (see **Table 4.3-10**, CLWA's Projected Water Demands, above). Consequently, no significant water supply impacts would occur under Alternative 5.

Table 4.3-23
Alternative 5 Water Demand and Supplies

Water Supply	Alternative 5
Newhall Ranch Specific Plan	
Potable Water	
Newhall Agricultural Water	7,038
Nickel Water	1,607
Subtotal Potable Water	**8,645**
Non-Potable	
Newhall Ranch WRP	4,679
Other Recycled Water	2,867
Subtotal Non-Potable Water	**7,546**
Total NRSP Water Supply	**16,191**
Water Demand	
NRSP	
Potable	7,738
Non-Potable	7,546
Total	**15,284**
Entrada	
Potable	814
Non-potable	319
Total	**1,133**
Combined Demand	**16,417**

Source: The Newhall Land and Farming Company, 2007

4.3.6.5.3 Secondary Impacts

RMDP Secondary Impacts. As stated above, construction and operation-related direct and indirect impacts of the RMDP would be less than significant under Significance Criteria 1, 2, and 3 within the RMDP study area. Therefore, there would be no secondary water resource impacts relative to Significance Criteria 1, 2, or 3 to areas located beyond the boundary of the RMDP study area.

SCP Secondary Impacts. As stated above, the SCP component, if implemented under Alternative 5, would result in less-than-significant impacts under Significance Criteria 1, 2, and 3 within the SCP study area. Thus, there would be no secondary water resource impacts relative to Significance Criteria 1, 2, or 3 to areas located beyond the boundary of the SCP study area.

4.3.6.6 Impacts of Alternative 6 (Elimination of Planned Commerce Center Drive Bridge and Maximum Spineflower Expansion/Connectivity)

In summary, Alternative 6 would modify the proposed RMDP and SCP, respectively, by eliminating the planned Commerce Center Drive bridge and maximizing spineflower preserve buffers and open space connectivity. Major tributary drainages would be regraded and realigned; however, all realigned channels would be wider under this alternative than under the proposed Project (Alternative 2), and the majority of proposed road crossings along the channels would be bridges as opposed to culverts. This alternative also would designate spineflower preserves on the Specific Plan, VCC, and Entrada. Under this alternative, the spineflower preserves would be significantly increased in acreage, and further connectivity would be

provided among spineflower preserve areas. Alternative 6 would facilitate development within the Specific Plan and Entrada, but to a lesser extent when compared to the proposed Project (Alternative 2). The direct, indirect, and secondary impacts of implementing Alternative 6 are discussed below. Please refer to this EIS/EIR, **Section 3.0**, Description of Alternatives, for a more detailed description of the proposed Project (Alternative 2) and other alternatives (Alternatives 3-7).

4.3.6.6.1 Direct Impacts

RMDP Direct Impacts. Alternative 6 would result in less development acreage (approximately 11 percent less) than the RMDP component of the proposed Project (Alternative 2). The total construction water demand of Alternative 6 is estimated to range from 173 to 432 afy, which is 2.5 to 6.1 percent of the applicant's existing agricultural water demand of 7,038 afy.

Direct impacts relating to groundwater recharge would be similar in nature to Alternative 2. However, the magnitude of such impacts would be less, approximately proportionate to the reduction in grading area and amount of RMDP components. For example, as compared to Alternative 2, Alternative 6 would result in approximately 782 fewer acres being covered with impervious surfaces and result in 3,728 fewer linear feet of buried bank stabilization being installed. Therefore, like Alternative 2, impacts relative to groundwater recharge would be less than significant under Significance Criterion 1.

The water demand generated by the RMDP component of Alternative 6 is able to be met with available water supplies. Thus, under Alternative 6, the impacts on water supplies would be less than significant under Significance Criterion 2.

Regarding impacts related to perchlorate contamination, Alternative 6 would use 4,356 afy less water than the proposed Project (Alternative 2), resulting in a proportional reduction in the use of local groundwater. As previously indicated, the proposed Project and its alternatives would use local groundwater in amounts equal to or less than the amount historically used to support agricultural and other uses on the Specific Plan site (*i.e.*, 7,038 afy). Consequently, the proposed Project and its alternatives, including Alternative 6, would not result in the spread of perchlorate beyond presently affected wells, because the applicant cannot increase the amount of agricultural water pumped from the Alluvial aquifer (7,038 afy), and because the area known to be impacted by perchlorate is over four miles from the RMDP study area. Therefore, there are no significant impacts associated with the Alternative 6 RMDP component relative to Significance Criterion 3.

SCP Direct Impacts. Under Alternative 6, the SCP component would result in the establishment of six spineflower preserves, including a preserve on the VCC site. A total of approximately 891.2 acres of spineflower preserve would be established under this alternative. As a conservation plan, the SCP does not generate a water demand *per se*. Instead, the SCP contains restoration activities within preserve areas. Specifically, disturbed portions (*i.e.*, agricultural lands, disturbed lands) of the preserve areas would be restored through revegetation with native plant communities. Under the SCP, the restoration must utilize locally indigenous plants appropriate to the habitat being restored. Under the SCP, habitat restoration sites may be temporarily irrigated to establish native plants and seed. However, according to the SCP, if irrigation is utilized, it must not alter pre-existing hydrologic conditions within the preserve areas and must be programmed to eliminate runoff. In addition, the SCP requires that the temporary irrigation system be used to establish plants and be scheduled to acclimate them to natural rainfall cycles. Under the

SCP, temporary irrigation systems, which will be subject to pre-approval by CDFG, must be removed after a maximum of five years. (SCP, pp. 89-90; **Appendix 1.0**.)

Implementation of the Alternative 6 SCP design requirements for restoration areas would not result in any significant impacts to groundwater supplies, recharge, groundwater levels in the basin, groundwater quality, or to the availability and sufficiency of existing or projected water supplies. In addition, by implementing the Alternative 6 SCP, no new or expanded water supply entitlements or facilities would be needed to serve the SCP study area. Instead, the applicant's agricultural water supplies would be more than sufficient to meet the temporary irrigation needed for restoration areas within the preserves. Therefore, impacts would be less than significant under Significance Criterion 3.

4.3.6.6.2 Indirect Impacts

RMDP Indirect Impacts. The RMDP component of Alternative 6 would indirectly facilitate partial build-out of the Specific Plan by providing infrastructure improvements required for development of the previously approved Specific Plan. Alternative 6 would facilitate moderately less development acreage (approximately 11 percent less) than the proposed Project (Alternative 2). The total construction water demand of Alternative 6 is estimated to range from 190 to 476 afy, which is 2.7 to 6.8 percent of the applicant's existing agricultural water demand of 7,038 afy.

Under Alternative 6, there would be an incremental reduction in the amount of RMDP-facilitated development. The indirect operational water demand of Alternative 6 is estimated to be 14,632 afy, which is approximately 10.7 percent less than the water demand of the proposed Project (Alternative 2). Indirect impacts related to groundwater recharge would be similar in nature to Alternative 2. However, the magnitude of such impacts would be less, approximately proportionate to the reduction in grading area and amount of RMDP components. For example, as compared to Alternative 2, Alternative 6 would result in approximately 782 fewer acres being covered with impervious surfaces and result in 3,728 fewer linear feet of buried bank stabilization being installed. Therefore, like Alternative 2, impacts relative to groundwater recharge would be less than significant under Significance Criterion 1.

Because there are available water supplies to meet demand generated by Alternative 6, without creating any significant environmental impacts, and because this alternative would generate a water demand less than the proposed Project, the water supply impacts under this alternative would be less than significant under Significance Criterion 2.

Regarding impacts related to perchlorate contamination, Alternative 6 would use 4,356 afy less water than the proposed Project (Alternative 2), resulting in a proportional reduction in the use of local groundwater. As previously indicated, the proposed Project and its alternatives would use local groundwater in amounts equal to or less than the amount historically used to support agricultural and other uses on the Specific Plan site (*i.e.*, 7,038 afy). Consequently, the proposed Project and its alternatives, including Alternative 6, would not result in the spread of perchlorate beyond presently affected wells, because the applicant cannot increase the amount of agricultural water pumped from the Alluvial aquifer (7,038 afy), and because the area known to be impacted by perchlorate is over four miles from the RMDP study area. Therefore, there are no significant impacts associated with the RMDP-facilitated development relative to Significance Criterion 3.

SCP Indirect Impacts. Establishment of the proposed spineflower preserves included in Alternative 6, as required under the SCP project component, would facilitate development of the Specific Plan planning area, because that area already has received local land use approval. As a result, indirect impacts would occur from the conversion of existing land to urban uses on the Specific Plan site. The water demands and supplies associated with implementation of the Specific Plan have been summarized above.

Water demands and supplies associated with implementation of a portion of the Entrada planning area are summarized below. (Under Alternative 6, a spineflower preserve would be established in the VCC planning area; and, therefore, no development would occur. As a result, there would be no facilitated development within the VCC planning area. Accordingly, there would be no indirect impacts resulting from facilitated development in the VCC planning area.)

Alternative 6 would implement a spineflower preserve area in the Entrada planning area. The County of Los Angeles has not approved local land use entitlements for the Entrada planning area at this time. Therefore, implementation of Alternative 6 would not facilitate new development that would have the potential to result in significant direct impacts upon water supplies in the Santa Clarita Valley. However, indirect impacts associated with proposed development adjacent to the Entrada preserve area are considered reasonably foreseeable because development applications have been submitted to the County for the Entrada planning area.

The planned land uses adjacent to the Entrada preserve area include proposed residential uses to the west and open space to the north and southwest. Areas immediately to the south of the Entrada preserve area would remain existing golf course and residential, and the planned western extension of Magic Mountain Parkway would be located approximately 1,000 feet to the north of the Entrada preserve area. The total water demand associated with implementation of a portion of the Entrada project facilitated by Alternative 6 is estimated to be approximately 921 afy. The water demands of Entrada are included as part of the projected future water demand shown in the 2005 UWMP. Of this total, 658 afy would be met with potable supplies and approximately 263 afy would be met from non-potable supplies. The Entrada site is located within the Valencia Water Company service area. Water sources expected to be used by Valencia Water Company to serve the Entrada site include a combination of SWP water delivered through CLWA and located groundwater resources from the Alluvial aquifer and the Saugus Formation. As shown in this EIS/EIR and the 2005 UWMP, water supplies exceed Entrada demand, in addition to other existing and projected demand in the Santa Clarita Valley. Therefore, potential impacts associated with supplying of water to the Entrada site would be less than significant under Significance Criterion 2.

With regards to impacts associated with groundwater recharge, build-out of Entrada would increase the amount of impervious surfaces overlying primarily the Saugus Formation portion of the basin. However, based on the work performed by CH2MHill and Luhdorff & Scalmanini Consulting Engineers discussed above, the Entrada planning area is not a significant groundwater recharge area. The primary groundwater recharge areas consist of the Santa Clara River mainstem and its tributary streambeds. Consequently, if the Alternative 6 SCP is approved, the development facilitated within a portion of Entrada would not result in any significant impacts to groundwater recharge or levels relative to Significance Criterion 3.

As to impacts associated with the spread of perchlorate in the groundwater basin beyond the wells currently impacted (Significance Criterion 3), approval of the Alternative 6 SCP would facilitate development within a portion of the Entrada planning area. However, as discussed above, the facilitated

development would not result in the spread of perchlorate beyond the four originally-impacted wells, located over four miles from the Project area.

In summary, the water demands for build-out of the Specific Plan and a portion of the Entrada planning area, as facilitated by Alternative 6, would be satisfied by available and reliable water supplies. **Table 4.3-24** summarizes the water supply and demands for the facilitated development within the Specific Plan and Entrada under Alternative 6. Under this alternative, the Specific Plan water supply (15,870 afy) exceeds the total water demand of 14,632 afy by 1,768 afy. Furthermore, the combined water demands of the Specific Plan and Entrada (15,553 afy) are within the future demands presented in the 2005 UWMP (see **Table 4.3-10**, CLWA's Projected Water Demands, above). Consequently, no significant water supply impacts would occur under Alternative 6.

Table 4.3-24
Alternative 6 Water Demand and Supplies

Water Supply	Alternative 6
Newhall Ranch Specific Plan	
Potable Water	
Newhall Agricultural Water	7,038
Nickel Water	1,607
Subtotal Potable Water	**8,645**
Non-Potable	
Newhall Ranch WRP	4,480
Other Recycled Water	2,745
Subtotal Non-Potable Water	**7,225**
Total NRSP Water Supply	**15,870**
Water Demand	
NRSP	
Potable	7,408
Non-Potable	7,224
Total	**14,632**
Entrada	
Potable	658
Non-potable	263
Total	**921**
Combined Demand	**15,553**

Source: The Newhall Land and Farming Company, 2007

4.3.6.6.3 Secondary Impacts

RMDP Secondary Impacts. As stated above, construction and operation-related direct and indirect impacts of the RMDP would be less than significant under Significance Criteria 1, 2, and 3 within the RMDP study area. Therefore, there would be no secondary water resource impacts relative to Significance Criteria 1, 2, or 3 to areas located beyond the boundary of the RMDP study area.

SCP Secondary Impacts. As stated above, the SCP component, if implemented under Alternative 5, would result in less-than-significant impacts under Significance Criteria 1, 2, and 3 within the SCP study

area. Thus, there would be no secondary water resource impacts relative to Significance Criteria 1, 2, or 3 to areas located beyond the boundary of the SCP study area.

4.3.6.7 Impacts of Alternative 7 (Avoidance of 100-Year Floodplain, Elimination of Two Planned Bridges, and Avoidance of Spineflower)

In summary, Alternative 7 would modify the proposed RMDP and SCP, respectively, by incorporating a two-prong approach: (a) preservation of all spineflower occurrences along with 300-foot buffers; and (b) elimination of two planned bridges (Commerce Center and Potrero Canyon Road bridges) and the avoidance of the 100-year floodplain along the Santa Clara River and nearly all of the tributary drainages. Alternative 7 would facilitate development within the Specific Plan and Entrada, but to a lesser extent when compared to the proposed Project (Alternative 2). The direct, indirect, and secondary impacts of implementing Alternative 7 are discussed below. Please refer to this EIS/EIR, **Section 3.0**, Description of Alternatives, for a more detailed description of the proposed Project (Alternative 2) and other alternatives (Alternatives 3-7).

4.3.6.7.1 Direct Impacts

RMDP Direct Impacts. Alternative 7 would result in less development acreage (approximately 20 percent less) than the RMDP component of the proposed Project (Alternative 2). The total construction water demand of Alternative 7 is estimated to range from 155 to 388 afy, which is 2.2 to 5.5 percent of the applicant's existing agricultural water demand of 7,038 afy.

Direct impacts relating to groundwater recharge would be similar in nature to Alternative 2. However, the magnitude of such impacts would be less, approximately proportionate to the reduction in grading area and amount of RMDP components. For example, as compared to Alternative 2, Alternative 7 would result in approximately 1,546 fewer acres being covered with impervious surfaces, but result in 39,703 more linear feet of buried bank stabilization being installed. Therefore, due primarily to the large reduction in acres developed, impacts relative to groundwater recharge would be less than significant under Significance Criterion 1.

The water demand generated by the RMDP component of Alternative 7 is able to be met with available water supplies. Thus, under Alternative 7, the impacts on water supplies would be less than significant under Significance Criterion 2.

Regarding impacts related to perchlorate contamination, Alternative 7 would use 9,319 afy less water than the proposed Project (Alternative 2), resulting in a proportional reduction in the use of local groundwater. As previously indicated, the proposed Project and its alternatives would use local groundwater in amounts equal to or less than the amount historically used to support agricultural and other uses on the Specific Plan site (*i.e.*, 7,038 afy). Consequently, the proposed Project and its alternatives, including Alternative 7, would not result in the spread of perchlorate beyond presently affected wells, because the applicant cannot increase the amount of agricultural water pumped from the Alluvial aquifer (7,038 afy), and because the area known to be impacted by perchlorate is over four miles from the RMDP study area. Therefore, there are no significant impacts associated with the Alternative 7 RMDP component relative to Significance Criterion 3.

SCP Direct Impacts. Under Alternative 7, the SCP component would result in the establishment of 24 spineflower preserves, including a preserve on the VCC site. A total of approximately 660.6 acres of spineflower preserve would be established under this alternative. As a conservation plan, the SCP does not generate a water demand *per se*. Instead, the SCP contains restoration activities within preserve areas. Specifically, disturbed portions (*i.e.*, agricultural lands, disturbed lands) of the preserve areas would be restored through revegetation with native plant communities. Under the SCP, the restoration must utilize locally indigenous plants appropriate to the habitat being restored. Under the SCP, habitat restoration sites may be temporarily irrigated to establish native plants and seed. However, according to the SCP, if irrigation is utilized, it must not alter pre-existing hydrologic conditions within the preserve areas and must be programmed to eliminate runoff. In addition, the SCP requires that the temporary irrigation system be used to establish plants and be scheduled to acclimate them to natural rainfall cycles. Under the SCP, temporary irrigation systems, which will be subject to pre-approval by CDFG, must be removed after a maximum of five years. (SCP, pp. 89-90; **Appendix 1.0**.)

Implementation of the Alternative 7 SCP design requirements for restoration areas would not result in any significant impacts to groundwater supplies, recharge, groundwater levels in the basin, groundwater quality, or to the availability and sufficiency of existing or projected water supplies. In addition, by implementing the Alternative 7 SCP, no new or expanded water supply entitlements or facilities would be needed to serve the SCP study area. Instead, the applicant's agricultural water supplies would be more than sufficient to meet the temporary irrigation needed for restoration areas within the preserves. Therefore, impacts would be less than significant under Significance Criterion 3.

4.3.6.7.2 Indirect Impacts

RMDP Indirect Impacts. The RMDP component of Alternative 7 would indirectly facilitate partial build-out of the Specific Plan by providing infrastructure improvements required for development of the previously approved Specific Plan. Alternative 7 would facilitate less development acreage (approximately 20 percent less) than the proposed Project (Alternative 2). The total construction water demand of Alternative 7 is estimated to range from 190 to 476 afy, which is 2.7 to 6.8 percent of the applicant's existing agricultural water demand of 7,038 afy.

Under Alternative 7, there would be an incremental reduction in the amount of RMDP-facilitated development. The indirect operational water demand of Alternative 7 is estimated to be 9,465 afy, which is 42.3 percent less than the water demand of the proposed Project (Alternative 2). Indirect impacts related to groundwater recharge would be similar in nature to Alternative 2. However, the magnitude of such impacts would be less, approximately proportionate to the reduction in grading area and amount of RMDP components. For example, as compared to Alternative 2, Alternative 7 would result in approximately 1,546 fewer acres being covered with impervious surfaces, but result in 39,703 more linear feet of buried bank stabilization being installed. Therefore, due primarily to the large reduction in land area developed, like Alternative 2, impacts relative to groundwater recharge would be less than significant under Significance Criterion 1.

Because there are available water supplies to meet demand generated by Alternative 7, without creating any significant environmental impacts, and because this alternative would generate a water demand less than the proposed Project, the water supply impacts under this alternative would be less than significant under Significance Criterion 2.

Regarding impacts related to perchlorate contamination, Alternative 7 would use 9,319 afy less water than the proposed Project (Alternative 2), resulting in a proportional reduction in the use of local groundwater. As previously indicated, the proposed Project and its alternatives would use local groundwater in amounts equal to or less than the amount historically used to support agricultural and other uses on the Specific Plan site (*i.e.*, 7,038 afy). Consequently, the proposed Project and its alternatives, including Alternative 7, would not result in the spread of perchlorate beyond presently affected wells, because the applicant cannot increase the amount of agricultural water pumped from the Alluvial aquifer (7,038 afy), and because the area known to be impacted by perchlorate is over four miles from the RMDP study area. Therefore, there are no significant impacts associated with the RMDP-facilitated development relative to Significance Criterion 3.

SCP Indirect Impacts. Establishment of the proposed spineflower preserves included in Alternative 7, as required under the SCP project component, would facilitate development of the Specific Plan planning area, because that area already has received local land use approval. As a result, indirect impacts would occur from the conversion of existing land to urban uses on the Specific Plan site. Water demands and supplies associated with implementation of the Specific Plan have been summarized above.

Water demands and supplies associated with implementation of a portion of the Entrada planning area are summarized below. (Under Alternative 7, a spineflower preserve would be established in the VCC planning area; and, therefore, no development would occur. As a result, there would be no facilitated development within the VCC planning area. Accordingly, there would be no indirect impacts resulting from facilitated development in the VCC planning area.)

Alternative 7 would implement a spineflower preserve area in the Entrada planning area. The County of Los Angeles has not approved local land use entitlements for the Entrada planning area at this time. Therefore, implementation of Alternative 7 would not facilitate new development that would have the potential to result in significant direct impacts upon water supplies in the Santa Clarita Valley. However, indirect impacts associated with proposed development adjacent to the Entrada preserve area are considered reasonably foreseeable because development applications have been submitted to the County for the Entrada planning area.

The planned land uses adjacent to the Entrada preserve area include proposed residential uses to the west and open space to the north and southwest. Areas immediately to the south of the Entrada preserve area would remain existing golf course and residential, and the planned western extension of Magic Mountain Parkway would be located approximately 1,000 feet to the north of the Entrada preserve area. The total water demand associated with implementation of a portion of the Entrada project facilitated by Alternative 7 is estimated to be approximately 1,125 afy. The water demands of Entrada are included as part of the projected future water demand shown in the 2005 UWMP. Of this total, 812 afy would be met with potable supplies and approximately 313 afy would be met from non-potable supplies. The Entrada site is located within the Valencia Water Company service area. Water sources expected to be used by Valencia Water Company to serve the Entrada site include a combination of SWP water delivered through CLWA and located groundwater resources from the Alluvial aquifer and the Saugus Formation. As shown in this EIS/EIR and the 2005 UWMP, water supplies exceed Entrada demand, in addition to other existing and projected demand in the Santa Clarita Valley. Therefore, impacts associated with supplying of water to the Entrada site would be less-than-significant under Significance Criterion 2.

With regards to impacts associated with groundwater recharge, build-out of Entrada would increase the amount of impervious surfaces overlying primarily the Saugus Formation portion of the basin. However, based on the work performed by CH2MHill and Luhdorff & Scalmanini Consulting Engineers discussed above, the Entrada planning area is not a significant groundwater recharge areas. The primary groundwater recharge areas consist of the Santa Clara River mainstem and its tributary streambeds. Consequently, if the Alternative 7 SCP is approved, the development facilitated within a portion of Entrada would not result in any significant impacts to groundwater recharge or levels relative to Significance Criterion 3.

As to impacts associated with the spread of perchlorate in the groundwater basin beyond the wells currently impacted (Significance Criterion 3), approval of the Alternative 7 SCP would facilitate development within a portion of the Entrada planning area. However, as discussed above, the facilitated development would not result in the spread of perchlorate beyond the four originally-impacted wells, located over four miles from the Project area.

In summary, the water demands for build-out of the Specific Plan and a portion of the Entrada planning area, as facilitated by Alternative 7, would be satisfied by available and reliable water supplies. **Table 4.3-25** summarizes the water supply and demands for the facilitated development within the Specific Plan and Entrada under Alternative 7. Under this alternative, the Specific Plan water supply (13,317 afy) exceeds the total water demand of 9,465 afy by 3,852 afy. Furthermore, the combined water demands of the Specific Plan, VCC, and Entrada (10,590 afy) are within the future demands presented in the 2005 UWMP (see **Table 4.3-10**, CLWA's Projected Water Demands, above). Consequently, no significant water supply impacts would occur under Alternative 7.

Table 4.3-25
Alternative 7 Water Demand and Supplies

Water Supply	Alternative 7
Newhall Ranch Specific Plan	
Potable Water	
Newhall Agricultural Water	7,038
Nickel Water	1,607
Subtotal Potable Water	**8,645**
Non-Potable	
Newhall Ranch WRP	2,897
Other Recycled Water	1,775
Subtotal Non-Potable Water	**4,672**
Total NRSP Water Supply	**13,317**
Water Demand	
NRSP	
Potable	4,792
Non-Potable	4,673
Total	**9,465**
Entrada	
Potable	812
Non-potable	313
Total	**1,125**
Combined Demand	**10,590**

Source: The Newhall Land and Farming Company, 2007

4.3.6.7.3 Secondary Impacts

RMDP Secondary Impacts. As stated above, construction and operation-related direct and indirect impacts of the RMDP would be less than significant under Significance Criteria 1, 2, and 3 within the RMDP study area. Therefore, there would be no secondary water resource impacts relative to Significance Criteria 1, 2, or 3 to areas located beyond the boundary of the RMDP study area.

SCP Secondary Impacts. As stated above, the SCP component, if implemented under Alternative 7, would result in less-than-significant impacts under Significance Criteria 1, 2, and 3 within the SCP study area. Thus, there would be no secondary water resource impacts relative to Significance Criteria 1, 2, or 3 to areas located beyond the boundary of the SCP study area.

4.3.6.8 Summary of Direct and Indirect Water Demands of the Project Alternatives

The direct and indirect water demands of the proposed Project and alternatives are summarized in this subsection. **Table 4.3-18**, above, summarizes the construction water demand of the proposed Project and alternatives, and the percentage that this demand represents of the applicant's total available existing agricultural water demand (7,038 afy). **Table 4.3-26** summarizes the water demand and supplies of the proposed Project (Alternative 2) and the alternatives (Alternatives 3-7). The water demands of the

Table 4.3-26
Summary Table of Water Demand and Supplies

Water Supply	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7
Newhall Ranch Specific Plan							
Potable Water							
Newhall Agricultural Water	–	7,038	7,038	7,038	7,038	7,038	7,038
Nickel Water	–	1,607	1,607	1,607	1,607	1,607	1,607
Subtotal Potable Water	**–**	**8,645**	**8,645**	**8,645**	**8,645**	**8,645**	**8,645**
Non-Potable							
Newhall Ranch WRP	–	4,984	4,792	4,920	4,679	4,480	2,897
Other Recycled Water	–	3,281	2,936	3,014	2,867	2,745	1,775
Subtotal Non-Potable Water	**–**	**8,265**	**7,728**	**7,934**	**7,546**	**7,225**	**4,672**
Total NRSP Water Supply		**16,910**	**16,373**	**16,579**	**16,191**	**15,870**	**13,317**
Water Demand							
Newhall Ranch Specific Plan							
Potable	–	8,135	7,924	8,136	7,738	7,408	4,792
Non-Potable	–	8,265	7,728	7,934	7,546	7,224	4,673
Total	**–**	**16,400**	**15,652**	**16,070**	**15,284**	**14,632**	**9,465**
VCC							
Potable	–	608	608	–	–	–	–
Non-potable	–	472	472	–	–	–	–
Total	**–**	**1,080**	**1,080**	–	–	–	–
Entrada							
Potable	–	1, 721	892	892	814	658	812
Non-potable	–	708	334	334	319	263	313
Total	**–**	**2,429**	**1,226**	**1,226**	**1,133**	**921**	**1,125**

Source: The Newhall Land and Farming Company 2008; GSI Groundwater Solutions, Inc., 2008.

Specific Plan would be met primarily by the applicant's supplies (*e.g.*, agricultural water, Nickel water, Newhall Ranch WRP). The demands of VCC and Entrada are included the Santa Clarita Valley demands shown in the 2005 UWMP, which would be met by the imported and local supplies also indicated in the 2005 UWMP. **Table 4.3-27** summarizes the indirect operational water demands of the Specific Plan, plus VCC and Entrada, as well as the corresponding percentage reduction in demand. Based on the information presented in this EIS/EIR, there would be no significant impacts on water supplies from the demands of the proposed Project (Alternative 2) and the alternatives (Alternatives 3-7), as water supplies meet or exceed the estimated water demands.

Table 4.3-27
Indirect Operational Water Demand (afy) - Specific Plan plus VCC and Entrada

	Potable	Non-Potable	Total	% Reduction
Alternative 1	-	-	-	100.0%
Alternative 2	10,646	9.445	19,909	NA
Alternative 3	9,424	8,534	17,958	10
Alternative 4	9,028	8,268	17,296	13
Alternative 5	8,552	7,865	16,417	18
Alternative 6	8,066	7,487	15,553	22
Alternative 7	5,604	4,986	10,590	47

Source: The Newhall Land and Farming Company, 2008; GSI Groundwater Solutions, Inc., 2008

4.3.6.9 Impacts of an "Existing Conditions Plus Project Water Demand and Supply Analysis"

This subsection describes the existing water demand in the Santa Clarita Valley, plus the water demand of the proposed Project (Alternative 2) and the alternatives (Alternatives 3-7), measured against existing supplies. **Table 4.3-28** illustrates that existing water supplies exceed such demand, plus existing demand in the Santa Clarita Valley. The water demand analysis includes the demand associated with build-out of the VCC and Entrada sites because development of those sites would be facilitated by approval of the proposed Project and the "build" alternatives. Because water supplies exceed demand, the proposed Project, in conjunction with other existing demand, including VCC and Entrada, would not result in any significant water supply impacts. As such, the water and groundwater supply impacts of the proposed Project and alternatives would be less than significant under Significance Criteria 1 and 2. As to impacts under Significance Criterion 3, as shown above, the proposed Project and the alternatives would not result in changes to the characteristics of groundwater pumping in the basin; and, therefore, would not expand the number of groundwater wells affected by perchlorate. Consequently, impacts with regard to perchlorate contamination would be less than significant under Significance Criterion 3.

Table 4.3-28
Existing (Actual 2006) Plus Project Demand and Supply for the Santa Clarita Valley (afy)

	2006
Existing Demand	74,100
Other Demand (agricultural)[1]	17,300
Specific Plan Demand	16,400
VCC and Entrada Demand	3,509
Total Demand	**111,309**
Existing Water Supply Programs:	
Local Supplies	
Alluvial aquifer	43,061
Saugus Formation	7,312
Recycled Water	419
Imported Supplies	
SWP Table A Deliveries[2]	40,646
Rosedale-Rio Bravo Water Bank[3]	40,000
Semitropic Bank Account	50,870
Flexible Storage Account[4]	6,060
Nickel Water	1,607
Total Existing Supplies	**189,975**
Surplus	**78,666**

Notes:

[1] In the Santa Clarita Valley, a total of 17,300 afy is used for agricultural irrigation and other miscellaneous uses. The conversion of the Specific Plan site from agriculture to Specific Plan land uses would reduce irrigation amounts in the Valley by the amount used on the site (*i.e.*, 7,038 afy (17,300 – 7,038 = 10,262 afy)).

[2] Reflects only the amount of Table A water actually delivered to the Santa Clarita Valley. Additional SWP water was available to CLWA in 2005 that is not reflected in this table.

[3] In addition to the SWP amount delivered to the Santa Clarita Valley in 2005 and 2006, CLWA also stored additional supplies in the Rosedale-Rio Bravo Water Bank.

[4] This account includes both CLWA and Ventura County flexible storage supplies available to CLWA.

Source: 2007 Santa Clarita Valley Water Report (April 2008)

4.3.7 MITIGATION MEASURES

4.3.7.1 Mitigation Measures Already Required by the Adopted Newhall Ranch Specific Plan EIR

The County of Los Angeles previously adopted mitigation measures to ensure that water resource-related impacts within the Specific Plan area would remain less than significant. These measures are found in the previously certified Newhall Ranch Specific Plan Program EIR, and the adopted Mitigation Monitoring Plans for the Specific Plan and WRP (May, 2003), and are summarized in **Table 4.3-1**, above. In addition, these mitigation measures are set forth in full below, and preceded by "SP," which stands for Specific Plan.

Specific Plan

SP-4.11-1 The proposed Specific Plan shall implement a water reclamation system in order to reduce the Specific Plan's demand for imported potable water. The Specific Plan shall install a distribution system to deliver non-potable reclaimed water to irrigate land uses suitable to accept reclaimed water, pursuant to Los Angeles County Department of Health Standards.

SP-4.11-2 Landscape concept plans shall include a palette rich in drought-tolerant and native plants.

SP-4.11-3 Major manufactured slopes shall be landscaped with materials that will eventually naturalize, requiring minimal irrigation.

SP-4.11-4 Water conservation measures as required by the State of California shall be incorporated into all irrigation systems.

SP-4.11-5 The area within each future subdivision within Newhall Ranch shall be annexed to the Valencia Water Company prior to issuance of building permits.

SP-4.11-6 In conjunction with the submittal of applications for tentative tract maps or parcel maps which permit construction, and prior to approval of any such tentative maps, and in accordance with the requirements of the Los Angeles County General Plan Development Monitoring System (DMS), as amended, Los Angeles County shall require the applicant of the map to obtain written confirmation from the retail water agency identifying the source(s) of water available to serve the map concurrent with need. If the applicant of such map cannot obtain confirmation that a water source(s) is available for buildout of the map, the map shall be phased with the timing of an available water source(s), consistent with the County's DMS requirements.

SP-4.11-7 Prior to commencement of use, all uses of recycled water shall be reviewed and approved by the State of California Health and Welfare Agency, Department of Health Services.

SP-4.11-8 Prior to the issuance of building permits that allow construction, the applicant of the subdivision shall finance the expansion costs of water service extension to the subdivision through the payment of connection fees to the appropriate water agency(ies).

SP-4.11-9 Pursuant to Public Resources Code § 21081(a)(2), the County shall recommend that the Upper Santa Clara Water Committee (or Santa Clarita Valley Water Purveyors), made up of the Castaic Lake Water Agency, Los Angeles County Waterworks District No. 36, Newhall County Water District, Santa Clarita Water Division of CLWA and the Valencia Water Company, prepare an annual water report that will discuss the status of groundwater within the Alluvial and Saugus Aquifers, and State Water Project water supplies as they relate to the Santa Clarita Valley. The report will also include an annual update of the actions taken by CLWA to enhance the quality and reliability of existing and planned water supplies for the Santa Clarita Valley. In those years when the Committee or purveyors do not prepare such a report, the applicant at its expense shall cause the preparation of such a report that is acceptable to the County to address these issues. This annual report shall be provided to Los Angeles County who will consider the report as part of its local land use decision-making process. (To date, four such water reports have been prepared (1998, 1999, 2000 and 2001) and provided to both the County of Los Angeles and the City of Santa Clarita.)

SP-4.11-10 Pursuant to Public Resources Code § 21081(a)(2), the County shall recommend that Castaic Lake Water Agency (CLWA), in cooperation with other Santa Clarita Valley retail water providers, continue to update the Urban Water Management Plan (UWMP) for Santa Clarita Valley once every five years (on or before December 31) to ensure that the County receives up-to-date information about the existing and planned water supplies in the Santa Clarita Valley. The County will consider the information contained in the updated UWMP in connection with the County's future local land use decision-making process. The County will also consider the information contained in the updated UWMP in connection with the County's future consideration of any Newhall Ranch tentative subdivision maps allowing construction.

SP-4.11-11 With implementation of the proposed Saugus ASR program, ASR wells shall be spaced so that adjacent non-project wells will not lose pumping capacity as a result of drawdown occurring during pumping of the ASR wells.

SP-4.11-12 With implementation of the proposed Saugus ASR program, the ultimate number of ASR wells to be constructed shall be sufficient to inject the ultimate target injection volume of 4,500 acre-feet per year and withdraw the ultimate target withdraw volume of 4,100 acre-feet per year.

SP-4.11-13 With implementation of the proposed Saugus ASR program, ASR wells shall be constructed in the following two general areas:

(a) South of the Santa Clara River and west of Interstate 5. This location includes areas within the Newhall Ranch Specific Plan boundary. (This area is referred to as the "south ASR well field".); and

(b) North of the Santa Clara River and west of Castaic Creek. (This location is referred to as the "north ASR well field".)

SP-4.11-14 The Saugus Groundwater Banking/ASR program injection water must meet the water quality requirements of the State Regional Water Quality Control Board, Los Angeles Region. The water extracted for use on the Specific Plan site shall meet the Title 22 drinking water standards of the State Department of Health Services.

SP-4.11-15 Groundwater historically and presently used for crop irrigation on the Newhall Ranch Specific Plan site and elsewhere in Los Angeles County shall be made available by the Newhall Land and Farming Company, or its assignee, to partially meet the potable water demands of the Newhall Ranch Specific Plan. The amount of groundwater pumped for this purpose shall not exceed 7,038 AFY. This is the amount of groundwater pumped historically and presently by the Newhall Land and Farming Company in Los Angeles County to support its agricultural operations. Pumping this amount will not result in a net increase in groundwater use in the Santa Clarita Valley. To monitor groundwater use, the Newhall Land and Farming Company, or its assignee, shall provide the County an annual report indicating the amount of groundwater used in Los Angeles County and the specific land upon which that groundwater was historically used for irrigation. For agricultural land located off the Newhall Ranch Specific Plan site in Los Angeles County, at the time agricultural groundwater is transferred from agricultural uses on that land to Specific Plan uses, The Newhall Land and Farming Company, or its assignee, shall provide a verified statement to the County's Department of Regional Planning that Alluvial aquifer water rights on that land will now be used to meet Specific Plan demand.

SP-4.11-16 The agricultural groundwater used to meet the needs of the Specific Plan shall meet the drinking water quality standards required under Title 22 prior to use.

SP-4.11-17 In conjunction with each project-specific subdivision map for the Newhall Ranch Specific Plan, the County shall require the applicant of that map to cause to be prepared a supplemental or subsequent Environmental Impact Report, as appropriate, pursuant to CEQA requirements. By imposing this EIR requirement on each Newhall Ranch tentative subdivision map application allowing construction, the County will ensure that, among other things, the water needed for each proposed subdivision is confirmed as part of the County's subdivision map application process. This mitigation requirement shall be read and applied in combination with the requirements set forth in revised Mitigation Measure 4.11-6, above, and in Senate Bills 221 and 610, as applicable, regardless of the number of lots in a subdivision map.

SP-4.11-18 The storage capacity purchased in the Semitropic Groundwater Banking Project by the Newhall Ranch Specific Plan applicant shall be used in conjunction with the provision of

water to the Newhall Ranch Specific Plan. The applicant, or entity responsible for storing Newhall Ranch water in this groundwater bank, shall prepare an annual status report indicating the amount of water placed in storage in the groundwater bank. This report shall be made available annually and used by Los Angeles County in its decision-making processes relating to build-out of the Newhall Ranch Specific Plan.

SP-4.11-19 A Memorandum of Understanding (MOU) and Water Resource Monitoring Program has been entered into between United Water Conservation District and the Upper Basin Water Purveyors, effective August 20, 2001.[38] The MOU/Water Resource Monitoring Program, when executed, will put in place a joint water resource monitoring program that will be an effective regional water management tool for both the Upper and Lower Santa Clara River areas as further information is developed, consistent with the MOU. This monitoring program will result in a database addressing water usage in the Saugus and Alluvium aquifers over various representative water cycles. The parties to the MOU intend to utilize this database to further identify surface water and groundwater impacts on the Santa Clara River Valley. The applicant, or its designee, shall cooperate in good faith with the continuing efforts to implement the MOU and Water Resource Monitoring Program.

As part of the MOU process, the United Water Conservation District and the applicant have also entered into a "Settlement and Mutual Release" agreement, which is intended to continue to develop data as part of an on-going process for providing information about surface and groundwater resources in the Santa Clara River Valley. In that agreement, the County and the applicant have agreed to the following:

> "4.3 Los Angeles County and Newhall will each in good faith cooperate with the parties to the MOU and will assist them as requested in the development of the database calibrating water usage in the Saugus and Alluvium aquifers over multi-year water cycles. Such cooperation will include, but not be limited to, providing the parties to the MOU with historical well data and other data concerning surface water and groundwater in the Santa Clara River and, in the case of Newhall, providing Valencia Water Company with access to wells for the collection of well data for the MOU.
>
> 4.4 Los Angeles County and Newhall further agree that the County of Los Angeles will be provided with, and consider, the then-existing data produced by the MOU's monitoring program in connection with, and prior to, all future Newhall Ranch subdivision approvals or any other

[38] See, Appendix F to Final Additional Analysis [Memorandum of Understanding Between the Santa Clara River Valley Upper Basin Water Purveyors and United Water Conservation District, dated August 2001].

future land use entitlements implementing the Newhall Ranch Specific Plan. If the then-existing data produced by the MOU's monitoring program identifies significant impacts to surface water or groundwater resources in the Santa Clara River Valley, Los Angeles County will identify those impacts and adopt feasible mitigation measures in accordance with the California Environmental Quality Act."

SP-4.11-20 The Specific Plan applicant, or its successors, shall assign its acquired Nickel Water rights to the Valencia Water Company or Castaic Lake Water Agency (CLWA), and, in consultation with the Valencia Water Company, CLWA or their designee(s), the applicant shall ensure that the Nickel Water is delivered to the appropriate place of use necessary to serve the Newhall Ranch Specific Plan at the time of need, as determined by the County of Los Angeles through required SB221 and/or SB610 analyses for future subdivision map applications. Upon approval of the Specific Plan, the applicant, Valencia Water Company, CLWA or a designee, will take delivery of the Nickel Water, so that such water will be used, or stored for use, for the Specific Plan in future years.

To ensure that an adequate supply of water is available for the Specific Plan over the long-term, the decision of whether or not the Nickel Water agreement should be extended or otherwise canceled cannot occur without first obtaining CLWA's concurrence. If the applicant, or its designee, seeks to not extend the Nickel Water agreement beyond its initial 35-year term, or seeks to cancel said agreement prior to the expiration of its initial 35-year period, or the expiration of the 35-year option period, if exercised, then the applicant, or its designee, must obtain CLWA's written concurrence and that concurrence must include findings to the effect that other equivalent water supplies are available at a comparable cost and that non-extension or cancellation of the agreement will not impact the water supplies of Newhall Ranch and the rest of the Santa Clarita Valley.

SP-4.11-21 The applicant, in coordination with RWQCB staff, shall select a representative location upstream and downstream of the Newhall Ranch Specific Plan and sample surface and groundwater quality. Sampling from these two locations would begin upon approval of the first subdivision map and be provided annually to the RWQCB and County for the purpose of monitoring water quality impacts of the Specific Plan over time. If the sampling data results in the identification of significant new or additional water quality impacts resulting from the Specific Plan, which were not previously known or identified, additional mitigation shall be required at the subdivision map level.

SP-4.11-22 Beginning with the filing of the first subdivision map allowing construction on the Specific Plan site and with the filing of each subsequent subdivision map allowing construction, the Specific Plan applicant, or its designee, shall provide documentation to the County of Los Angeles identifying the specific portion(s) of irrigated farmland in the County of Los Angeles proposed to be retired from irrigated production to make agricultural water available to serve the subdivision. As a condition of subdivision

approval, the applicant or its designee, shall provide proof to the County that the agricultural land has been retired prior to issuance of building permits for the subdivision.

Water Reclamation Plant

SP-5.0-50 The site of the proposed water reclamation plant shall be annexed to the Valencia Water Company prior to issuance of building permits for the WRP.

SP-5.0-51 Prior to construction of the proposed water reclamation plant, the WRP operator shall demonstrate water availability for both construction and operation demands.

4.3.7.2 Mitigation Measures Already Required by the Adopted VCC EIR

The County of Los Angeles adopted mitigation measures to minimize water resource-related impacts within the VCC planning area as part of its approval of the VCC project. These measures are found in the previously certified VCC EIR (April 1990), and are summarized in **Table 4.3-2**, above. In addition, these mitigation measures are set forth in full below, and preceded by "VCC-WR," which stands for Valencia Commerce Center -- Water Resources.

At the time of adoption, the VCC mitigation measures represented the best available mitigation imposed by Los Angeles County. Moreover, as noted in **Subsection 4.3.1.2.1**, above, additional environmental review will be conducted by Los Angeles County with respect to the VCC planning area, because the applicant recently submitted the last tentative parcel map for build-out of the VCC planning area. Implementation of the previously adopted, applicable VCC mitigation measures and additional mitigation requirements (*e.g.*, measures similar to those previously adopted for the Specific Plan area and/or recommended for the proposed Project) would ensure that impacts to water resources within the VCC planning area remain less than significant.

VC-WR-1 A connection fee will be charged to all new development by the CLWA. The Castaic Lake Water Agency may also assess a standby charge; however, this charge is not currently required.

VC-WR-2 Building permits shall not be granted unless there is adequate water supply to serve the proposed project.

VC-WR-3 Individual tentative maps in Phase II will not be approved unless the Department of Regional Planning's Development Monitoring System (DMS) demonstrates water will be available to meet the demand for each portion of the project

VC-WR-4 Landscaping will utilize drought tolerant vegetation, water sensory to prevent over-watering, and specialized Irrigation systems to minimize water use.

VC-WR-5 The proposed project shall, to the extent feasible implement the Department of Water Resources recommendations for interior and exterior water conservation and water reclamation.

4.3.7.3 Mitigation Measures Relating to the Entrada Planning Area

The County of Los Angeles has not yet prepared or released a draft EIR for the proposed development within the portion of the Entrada planning area that would be facilitated by approval of the SCP component of the proposed Project. As a result, there are no previously adopted mitigation measures for the Entrada planning area. However, the adoption and implementation of measures similar to those previously adopted for the Specific Plan area and/or recommended for the proposed Project would ensure that impacts to water resources within the Entrada planning area remain less than significant.

4.3.7.4 Additional Mitigation Measures Proposed by this EIS/EIR

Neither the proposed Project nor the alternatives would result in significant water resource impacts, and implementation of the above mitigation measures to the Project area will ensure that all such water resource-related impacts remain less than significant. Therefore, no additional mitigation measures are recommended or required.

4.3.8 SUMMARY OF SIGNIFICANCE FINDINGS

Using the significance criteria identified in **Subsection 4.3.5**, above, the proposed Project and alternatives would not result in any significant impacts to water supply or groundwater resources. **Table 4.3-29** presents a summary of the significance criteria relating to each of the Project alternatives. The table shows that the proposed Project and alternative, if implemented, would not result in any significant impacts to water supply or groundwater resources, under pre- and post- mitigation conditions. The mitigation is imposed to ensure that impacts to all water supplies remain less than significant.

Table 4.3-29
Summary of Significant Water Resource Impacts - Pre- and Post-Mitigation

Significance Criteria	Applicable Mitigation Measures	Planning Area	Impact of Alternatives - Pre/Post-Mitigation						
			Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level	SP 4.11-1 - 4.11-10	NRSP	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS
	SP 4.11-15 - 4.11-19	VCC	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS
	SP 4.11-21	Entrada	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS
Have insufficient water supplies to serve the project from existing entitlements and resources; or are new or expanded entitlements needed	SP 4.11-1 - 4.11-10	NRSP	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS
	SP 4.11-17	VCC	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS
	SP 4.11-20								
	SP 4.11-22	Entrada	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS
Result in the spreading of perchlorate in groundwater beyond the wells currently affected by perchlorate.	No impacts; and no mitigation required	NRSP	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS
		VCC	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS
		Entrada	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS

NS = Not significant, or adverse, but less than significant. No mitigation required.

4.3.9 SIGNIFICANT UNAVOIDABLE IMPACTS

With implementation of the identified mitigation measures, water supply impacts of the proposed Project and the "build" alternatives would remain less than significant. Therefore, the proposed Project and alternatives would not result in any significant unavoidable impacts to water resources.