NEWHALL RANCH™
Newhall Ranch Company

REVISED DRAFT ADDITIONAL ANALYSIS

to the

NEWHALL RANCH SPECIFIC PLAN
and
WATER RECLAMATION PLANT
FINAL ENVIRONMENTAL IMPACT REPORT

Project # 94087
SCH # 95011015

Volume I

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EXECUTIVE SUMMARY

In April 2001, the County of Los Angeles publicly circulated the Draft Additional Analysis for the Newhall Ranch Specific Plan and Water Reclamation Plant Final Environmental Impact Report ("Final EIR") (SCH No. 95011015). In October 2001, the County then publicly circulated a Final Additional Analysis (consisting of Comments and Responses to Comments) as part of Additional Analysis review proceedings before the County of Los Angeles Regional Planning Commission. As discussed more fully below, the purpose of the Additional Analysis is to address six issues raised by the trial court in litigation regarding the adequacy of the prior Newhall Ranch Final EIR. Since public circulation of the Newhall Ranch Draft Additional Analysis and Final Additional Analysis, additional information has been presented, which resulted in the County's decision to revise and recirculate portions of the Draft Additional Analysis.

This Revised Draft Additional Analysis has been prepared to describe changes to the sources of water for the Specific Plan, to provide an update regarding sensitive plant species occurring on the Specific Plan site, to provide additional alternatives to the Specific Plan and to correct minor errors in the prior Draft Additional Analysis (April 2001). The three revised sections indicated below are intended to replace the corresponding sectionss in the prior Draft Additional Analysis. For example, the Water Resources section (**Section 2.5**) presented in this document completely replaces the Water Resources section (**Section 2.5**) presented in the prior Draft Additional Analysis (April 2001). Only those portions of the prior Draft Additional Analysis, revised as noted below, are included in this Revised Draft Additional Analysis. Edited copies of the three revised sections, showing the revisions made in underline and strikeout format, are available for review at the County of Los Angeles Public Library and County of Los Angeles Department of Regional Planning, 320 West Temple Street, 13th Floor, Los Angeles, California 90012. Contact Mr. Lee Stark.

The following sections of the Draft Additional Analysis have been revised and replaced:

- **Executive Summary,**
- **Section 1.0 Introduction and Project Description,** and
- **Section 2.5 Water Resources.**

In addition, the following two new sections have been added to the Draft Additional Analysis:

- **Section 2.6 Spineflower and Other Sensitive Plant Species**, and
- **Section 2.7 Additional Alternatives**.

Please refer to the April 2001 Draft Additional Analysis for the unchanged portions of the Draft Additional Analysis.

PROJECT DESCRIPTION AND BACKGROUND

The applicant has prepared the Newhall Ranch Specific Plan which covers a total of 11,963 acres. The Specific Plan as originally approved by the County of Los Angeles Board of Supervisors includes 21,615 dwelling units on 4,835 acres (including an 18-hole golf course, 10 neighborhood parks and seven schools), 630 acres of mixed uses (including residential, office, and retail commercial uses), 67 acres of commercial uses, 256 acres of business park uses (including light manufacturing, warehousing and distribution), 37 acres of visitor serving uses, 6,138 acres of open area, 3 community parks on 186 acres, and 367 acres of arterial roads and community facilities (including a new 6.9 million gallon per day water reclamation plant, one library and two fire stations). The Specific Plan would build out over approximately 25 to 30 years, based upon market conditions.

In March 1999, the County of Los Angeles Board of Supervisors (the County) certified the Final Environmental Impact Report (FEIR) for the Newhall Ranch Specific Plan and Water Reclamation Plant (WRP) (SCH No. 95011015), and approved the Newhall Ranch Specific Plan and WRP. Subsequently, various parties challenged the County's certification of the Final EIR and approval of the Specific Plan and WRP in a consolidated action in Kern County Superior Court entitled, *United Water Conservation District v. County of Los Angeles, et al.*, Case No. 239324 RDR. The trial court found that the FEIR required additional analysis with regard to the following issues: (1) traffic impacts to Ventura County arterial roadways exiting State Routes 23 and 126; (2) biological impacts to the Ventura County portion of the Salt Creek wildlife corridor; (3) biological impacts in the Santa Clara River corridor caused by channelization and bank hardening; (4) adequacy of water sources for the proposed Specific Plan, including impacts caused by employment of the Aquifer Storage and Recovery (ASR) alternative; and (5) the alternative of siting the Specific Plan's Water Reclamation Plant off-river, including an analysis of biological impacts of that siting. The trial court also instructed the County to ensure that the Specific Plan is consistent with the County General Plan policies requiring protection of natural resources in Significant Ecological Areas (SEAs) as those standards apply to SEA 23, and the General Plan Development Monitoring System (DMS) policies as they relate

to water supplies. Consequently, the Court set aside approval of the Specific Plan and WRP, and FEIR certification, but only with respect to the six issues discussed above. The trial court upheld approval of the Specific Plan and WRP, and the FEIR certification with respect to all other issues raised in the action.

The purpose of this Additional Analysis is to address each of the six issues raised by the trial court. The following provides a summary of the environmental impact analysis and proposed mitigation contained in each technical section. Included are the questions posed by the trial court along with the answers to the questions posed. Brief summaries of the new Draft Additional Analysis sections are also provided.

ENVIRONMENTAL IMPACT AND MITIGATION SUMMARY

Traffic on Ventura County Arterials exiting SR-126 and SR-23

Question: What traffic impact would the Specific Plan have on Ventura County arterials exiting SR-126 and SR-23 if the traffic impact methodologies employed in analyzing the Specific Plan's traffic impacts in Los Angeles County were extended to the analysis of the Plan's traffic impacts on arterial roadways in Ventura County until the 1 percent impact standard is reached?

Answer:

Traffic generated by the Newhall Ranch Specific Plan will not cause a significant impact to arterial roadways in Ventura County exiting SR-126 and SR-23 using the one percent standard. It should be noted that the original Newhall Ranch Traffic Analysis contained in the Final EIR was prepared using traffic forecast data from the Santa Clarita Valley Consolidated Traffic Model (SCVCTM). This traffic-forecasting model was developed jointly by the County of Los Angeles and the City of Santa Clarita to facilitate the analysis of transportation needs in the Santa Clarita Valley. The model was developed as a "windowed" model in which the Santa Clarita Valley study area was extracted as a window of the overall region. As a windowed model, the SCVCTM features only the land use and highway network within the Santa Clarita Valley and has a set of "cordons" which define the edges of the modeled area. These cordons are designated points on the highway network where regional traffic from outside the window enters and exits the modeled area. Since the time the original traffic study was conducted, the Ventura County Transportation Commission has prepared a long-range Ventura Countywide Traffic Model ("VCTM"). The VCTM is based on the regional land use database

produced by the Southern California Association of Governments. The database contains land use information on existing and future development patterns for the five county Southern California region. Consequently, it is possible to more accurately determine the Specific Plan's impacts to Ventura County arterial roadways.

The analysis contained in **Section 2.1** of this Additional Analysis demonstrates that the Specific Plan will not have a significant impact (i.e., a one percent or more contribution) on any Ventura County arterial roadways exiting SR-126 or SR-23. Therefore, the Specific Plan will not result in significant impacts to any arterial roads in Ventura County and no mitigation beyond that identified in the Final EIR is required (see **Section 4.0** below for a copy of the Mitigation Monitoring Program). Staff of the Ventura County Transportation Commission reviewed the analysis presented later in this document and indicated their concurrence with the significance conclusions reached (see letter dated October 4, 2000 in **Appendix 2.1(a)**).

Salt Creek Corridor

Question: What effect does the Newhall Ranch Specific Plan have on the Salt Creek Corridor situated in Ventura County, caused by the shifting of wildlife into the Salt Creek Corridor?

Answer:

The Newhall Ranch Specific Plan will not significantly effect wildlife movement in the Salt Creek Corridor. Wildlife movement within the Salt Creek watershed occurs primarily along the general direction of the drainages between the Santa Susana Mountains and the Santa Clara River Valley. These routes are used because they follow the gentlest topography and more open habitat. Wildlife movement between watersheds to the east and west are easiest at the upper and lower ends of the watersheds. At the lower ends, canyons merge in the Santa Clara River Valley and are generally flat with less steep ridges. At the upper ends of the watersheds, the ridgeline of the Santa Susana Mountains provides less steep connections to the upper reaches of the canyons and adjacent watersheds.

As part of the original approval of the Newhall Ranch Specific Plan, the County of Los Angeles Board of Supervisors established a one-half mile wide buffer south of the Santa Clara River and a one-eighth of a mile buffer north of the river between all development proposed as part of the Specific Plan and the Ventura County line. Direct impacts to habitats in the Potrero Creek watershed in Los Angeles County from the proposed Newhall Ranch Specific Plan are important to the Salt Creek watershed.

Habitat loss in the Potrero Creek watershed would potentially cause a shift in some wildlife populations to undisturbed habitats in the Salt Creek watershed in both Los Angeles and Ventura County. Habitat losses in the Potrero Creek watershed would also potentially affect the long-term movement of wildlife within this watershed and within the Salt Creek watershed in both Ventura County and Los Angeles County. However, no direct impacts to that portion of the Salt Creek watershed in Ventura County would occur in association with the Specific Plan because no development is proposed there, and all development proposed as part of the Specific Plan would occur no closer than one-half mile to Ventura County.

It is also important to understand that the Specific Plan will build out over a 20 to 30 year period. Consequently, the displacement of wildlife species, primarily larger mammals, would occur incrementally over a much-extended period of time. These larger wildlife species (e.g., mountain lion, deer, bobcat, and coyote) generally have home ranges that are not confined only to one watershed, and would be expected to be displaced in relatively small numbers. In contrast, the smaller wildlife species will more likely suffer from direct mortality because of land development, and would not be displaced into adjacent watersheds. This time factor allows for a very gradual shift (i.e., over a period of decades) of wildlife use/movement for those animals able to move a distance of more than one-half mile from the Specific Plan area in Los Angeles County to adjacent undeveloped areas, including the Salt Creek watershed in Ventura County. These very gradual (and temporary) increases in wildlife use/movement in the Salt Creek watershed in both Los Angeles County and Ventura County would be easier to absorb with wildlife movement over many, many years (i.e., the animals would have more time to adapt to the available resources or would have time to move out of the Salt Creek watershed to adjacent watersheds). Therefore, the direct impacts of habitat loss in the Specific Plan area on wildlife movement within the Salt Creek watershed, and particularly the Ventura County portion given its distance away from proposed development, would not be significant. Please see **Section 2.2** of the Additional Analysis for further information on this topic.

Floodplain Modifications

Question: What are the biological impacts on the Santa Clara River corridor due to channelization, increased flow velocities and bank hardening?

Answer:

The proposed drainage improvements would maintain the key hydraulic characteristics that largely determine the overall mosaic of habitats in the river. Development of the Specific Plan would increase

runoff from upland areas due to increased impervious surfaces (e.g., pavement, roads, and buildings). The project has an effect out to a point about four miles downstream of the Specific Plan site in Ventura County. Beyond this point, the Specific Plan has no impacts to flows. The increase in runoff ranges from 3 percent for high flows to 7 percent for the 2-year event. For high frequency floods (2-year, 5-year, and 10-year), the proposed floodplain modifications would not hinder flows or reduce the floodplain area. Instead, these flows would spread across the river channel, unaffected by the bank protection because the river would have sufficient width to allow these flows to meander and spread out further than they would under pre-project conditions.

It is only during more infrequent floods (20-year, 50-year and 100-year events) where flows would spread out to the buried bank stabilization (but no further). This would limit the area of the floodplain during these infrequent flood events, causing inundation over a smaller area because the bank protection will prevent flooding of formerly adjacent floodplain areas. However, the reduction in floodplain area caused by bank protection does not create a significant increase in overall velocities or water depth, because the volume of flow carried in these shallow, slow-moving areas along the margins of the river is small. Moreover, variations are localized and limited in scope, especially when viewed in the entirety of the river corridor within the Specific Plan site and downstream. Therefore, the overall mosaic of habitats in the river would be maintained because the key hydraulic characteristics would not be significantly different under the Specific Plan. Based on these results, the floodplain modifications associated with the Specific Plan (i.e., bank protection and bridges) would not cause significant changes to key hydraulic characteristics, and therefore, would not alter the amount and "pattern" of aquatic, wetland, and riparian habitats in the river at the Specific Plan site and downstream in Ventura County. Please see **Section 2.3** of this Additional Analysis for further information on this topic.

SEA General Plan Consistency

Question: Is the Specific Plan consistent with the Los Angeles County General Plan policies requiring protection of natural resources in SEAs as those standards apply to SEA 23?

Answer: Yes

The Newhall Ranch Specific Plan is considered highly compatible with biotic resources in SEA 23 and is consistent with County of Los Angeles policies related to protection of natural resources in SEAs. The Newhall Ranch Specific Plan proposes changes to SEA 23 resulting in a reduction of land area of 471

acres within SEA 23. The revised SEA 23 would contain approximately 819 acres. Approximately 117 acres of the total area transferred involves sensitive habitat. However, the proposed changes to the SEA area must be understood in context. In this case, only a relatively small amount of sensitive habitat area (i.e., 28 acres, or 2 percent of the existing SEA) is being removed from the existing boundaries of SEA 23 due to proposed development. The balance of the land transferred from SEA 23 (443 acres) will be either placed in other permanently preserved open area designations (i.e., SEA 20, Open Area) because it is not riparian in nature, or is proposed for development on land that is, for the most part, already disturbed or not considered sensitive (e.g., existing agricultural fields). In addition to land removed, a total of 59 acres of land is proposed to be added to SEA 23 (530 total acres proposed for removal from the SEA, while 59 acres are proposed for addition for a net reduction in SEA acreage of 471 acres). The transfers were made with consideration to the type and quality of the habitat and the purpose of the SEA 23 (preservation of riparian habitats and associated species).

Approximately 384 acres presently in SEA 23 are proposed for development as part of the Newhall Ranch Specific Plan. However, only a small amount of that land is considered sensitive. The vast majority of the land is either already in a disturbed condition, in agricultural production or dominated by ruderal or weedy plant species. Approximately 337 acres (or 64 percent of the 530 acres being removed from SEA 23) are in a disturbed condition, 19 acres (or 4 percent of the 530 acres being removed from SEA 23) are dominated by non-sensitive habitat types, and 28 acres (or 5 percent of the 530 acres being removed from SEA 23) are dominated by sensitive habitat types.

The land use plan proposed as part of the Newhall Ranch Specific Plan has been designed to minimize impacts to sensitive resources, and where avoidance is not possible, to minimize impacts where feasible. A total of 380 acres of sensitive habitat areas exist within SEA 23 and only 28 acres (or seven percent of sensitive habitat areas and two percent of the original SEA) would be directly impacted by development. The remainder would remain protected in open space areas as part of the revised SEA 23, SEA 20 or within the Open Area designations. This is consistent with General Plan compatibility criteria one that requires setting aside of appropriate and sufficient undisturbed area. Development on land already disturbed poses no direct impacts to resources found within the SEA. Of the 28 acres of sensitive habitat removed by development in the SEA, 20 acres of sensitive riparian habitat is being removed to accommodate residential, commercial or mixed land uses. However, the affected land represents small patches of disconnected habitat distributed throughout the Specific Plan area rather than a contiguous patch of 28 acres that provides higher habitat value. Based on the information presented, the Newhall Ranch Specific Plan is compatible with the sensitive resources found within SEA 23. See **Section 2.4** of the Additional Analysis for further information on this topic.

Water Resources

An adequate supply of water is available to meet the demands of the Specific Plan without creating significant environmental impacts, and the proposed Saugus Groundwater Banking/ASR program is feasible.

Introduction

The County of Los Angeles and the Newhall Ranch applicant are responding to the Court's decision and direction to demonstrate availability of identified water supplies by now relying on two primary sources of water supply – Newhall's historical use of agricultural water to benefit its land in Los Angeles County, and water purchased from the Nickel Family LLC in Kern County (the "Nickel water"). The right of the beneficial use of Newhall's agricultural water resource is well established under California law.[1] This agricultural water will be available as agricultural production until it is phased out by urban development. There would be a limit placed on the amount of groundwater used so that it would not exceed the amount already used for agricultural purposes. This agricultural water supply has historical long-term availability and reliability and is an established supply. The Alluvial and Saugus aquifers have consistently been at or near their highest levels in the past several years and are not in an overdraft condition. The first source is the applicant's historical alluvial groundwater produced in the County of Los Angeles that is presently committed to agriculture uses. The second source is the applicant's purchase of 1,607 acre-feet per year of water from Nickel Family LLC in Kern County (the "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. Pursuant to Nickel's contract water rights, the water delivered to Nickel for sale to Newhall must be high quality water, acceptable for delivery into the California aqueduct. In addition, delivery of the water to Nickel being sold to Newhall is mandatory and unaffected by annual hydrologic conditions. 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 20th 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, which would then be used as a dry year supplemental supply. The water would be delivered through the Kern County Water Agency and the State Water Project (SWP) system. Because these two independent primary water sources meet the potable water needs of the Specific Plan, no potable water would be needed from State Water Project (SWP) and Castaic Lake Water

1 See, the California Supreme Court's decision, *City of Barstow v. Mojave Water Agency* (2000) 23 Cal.4th 1224.

Agency (CLWA). The non-potable demand would be met by the use of reclaimed water supplied by the Newhall Ranch water reclamation plant and the reclaimed water supplied by CLWA.

Furthermore, Newhall Ranch has undertaken several major steps to enhance the reliability of the water supply for the Newhall Ranch Specific Plan. Specifically, the Newhall Ranch applicant has accomplished the following:

- Secured 7,648 acre-feet per year (AFY) of additional SWP water entitlement from landowners who are served by a member agency of the Kern County Water Agency.
- Purchased 55,000 AF of groundwater banking storage capacity, which includes the ability to use up to 4,950 AF of water during dry years as a water supply from the Semitropic Water Storage District.
- Determined through comprehensive groundwater testing that the local Saugus aquifer can be successfully used for groundwater banking through an aquifer storage and recovery (ASR) program.
- Along with members of the "Downstream Water Users," including the United Water Conservation District, forwarded a unanimously supported request to the State Department of Water Resources (DWR) to amend the 1978 Castaic Creek Flood Flow agreement, thereby making these flows available for use in groundwater banking and for other appropriate beneficial water uses. This step improves the potential to use Castaic Creek flood flows.
- Determined that CLWA could provide the applicant with supplemental water supplies, if needed.

The relationships between Newhall Ranch water demand and supply in normal/average and dry years are provided below in **Tables ES-1** and **ES-2**, and are illustrated in **Chart ES-1**.

Analysis

Provided below are the questions posed by the trial court with regard to Newhall Ranch water resources along with the answers to each question posed.

Question: Is Sufficient Water Available for Build-out of the Specific Plan?

Answer: Yes

An adequate amount of water is available to meet the needs of the Specific Plan. In fact, actions being taken by the Specific Plan applicant will result in even more water being made available to the Specific Plan than is needed to meet its water need. The primary sources of water for the Specific Plan consist of existing supplies that are available for use today in the Santa Clarita Valley. To ensure that

adequate water is available for the Specific Plan, the Specific Plan will rely on the following sources of water:

(a) Newhall Ranch Water Supplies

- **Existing Newhall Agricultural Water** – The project applicant would meet potable water demands of the Specific Plan by using Newhall's historical alluvial groundwater produced in Los Angeles County which is presently committed to agricultural uses. No additional groundwater would be pumped over historical and present amounts; instead, the water presently used to irrigate crops would be treated and then used to partially meet the potable water needs of the Specific Plan.

- **Nickel Water.** The applicant has secured water under contract with Nickel Family LLC in Kern County. 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 water would be delivered through the Kern County Water Agency and the SWP system. The Nickel Water would only be needed on the Specific Plan site in years where all of the Newhall Agricultural Water has been used, which is estimated to occur after the 20th 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, which would then be used as a dry year supplemental supply.

- **Semitropic Groundwater Banking Project.** The project applicant has entered into an agreement to reserve and purchase water storage capacity of up to 55,000 acre-feet in the Semitropic Water Storage District Groundwater Banking Project. The stored water could be extracted in dry years in amounts of up to 4,950 AFY from the project. This supply will be used as a water source for the Specific Plan in dry years only. Sources of water that can be stored in this banking project include, but are not limited to, Nickel Water, Newhall/SWP supplies, and Other CLWA Supplies.

- **Newhall Ranch Reclaimed Water.** Reclaimed water from the Specific Plan's water reclamation plant will be used to meet a portion of the Specific Plan's non-potable water need.

- **CLWA Reclaimed Water.** Planned recycled water from the Valley's two existing water reclamation plants will be used to meet the remainder of the Specific Plan's non-potable water need.

Table ES-1
Newhall Ranch Specific Plan
Normal/Average Year Potable and Non-Potable Water Usage
(acre-feet/year)

	Demand	Supply	
		7,038	Newhall Agricultural Water (a)
		1,607	Nickel Water (b)
Potable	8,645	8,645	
		5,344	Newhall Ranch Reclaimed Water
		3,691	CLWA Reclaimed Water
Non-Potable	9,035	9,035	
Total (c)	**17,680**	**17,680**	

(a) Firm groundwater supply historically and presently used by the applicant for agricultural irrigation purposes on its agricultural land in The County of Los Angeles.
(b) The applicant has secured water under contract with Nickel Family LLC in Kern County. 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 water would be delivered through the Kern County Water Agency and the SWP system.
(c) See **Table 2.5-25, Summary of Newhall Ranch Water Demands.**

Additional Programs to Enhance Reliability of Supplies

Groundwater Banking Program for Dry Years (h)			Supplemental Supplies
Saugus Groundwater Banking/ ASR Program (e)	4,500	4,500	CLWA SWP and Other Supplies (g)
		4,566	Newhall/SWP Water (d)
		7,043	Castaic Creek Flood Flows (f)
Total	**4,500**	**16,109**	

(d) Newhall/SWP water (7,648 acre-feet per year of annual entitlement) secured by the applicant from landowners served by a member agency of the Kern County Water Agency, which would be delivered through SWP facilities to CLWA. This source would be reduced to approximately 59.7 percent in average years as discussed in Section 2.5, Water Resources (4,566 = 7,648 x 0.597).
(e) The Saugus Groundwater Banking/ASR Program involves injecting or "banking" 4,500 AFY of treated Newhall/ SWP water or other available water at times when those sources are readily available in normal/average years. During drought periods, up to 4,100 AFY would be withdrawn from the groundwater bank to partially meet Specific Plan dry year water demand.
(f) Subject to approval by DWR, Castaic Creek flood flows could be used in normal/average years, when available, as a water source for the Semitropic Groundwater Banking Project (through a water transfer), or for the Saugus Groundwater Banking/ASR Program. This supply is variable; in some years, the flood flows are not available.
(g) In addition to Newhall/SWP Water and Castaic Creek Flood Flows, CLWA SWP entitlement and other CLWA supplies could be used as a source of water for injection into the Semitropic and Saugus Groundwater Banks.
(h) CLWA's SWP entitlement is 95,200 acre-feet per year. The amount of the water shown above is not a limitation on the amount of CLWA SWP supplies that could be used as a source of water; however, the CLWA supplies are only considered a supplemental source for Newhall Ranch, because the applicant has taken steps to secure its own primary potable water supplies.

Table ES-2
Newhall Ranch Specific Plan
Dry Year Potable and Non-Potable Water Usage
(acre-feet/year)

	Demand (c)	Supply	
		7,038	Newhall Agricultural Water (a)
		1,607	Nickel Water (b)
		865	Semitropic Groundwater Banking Project (e)
Potable	9,510	9,510	
		5,344	Newhall Ranch Reclaimed Water
		4,595	CLWA Reclaimed Water
Non-Potable	9,939	9,939	
Total	**19,449**	**19,449**	

(a) Firm groundwater supply historically and presently used by the applicant for agricultural irrigation purposes on its agricultural land in The County of Los Angeles.
(b) The applicant has secured water under contract with Nickel Family LLC in Kern County. 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 water would be delivered through the Kern County Water Agency and the SWP system.
(c) Demands are projected to increase in a dry year by approximately 10 percent due to a lack of local rainfall.

Additional Programs To Enhance Reliability Of Supplies

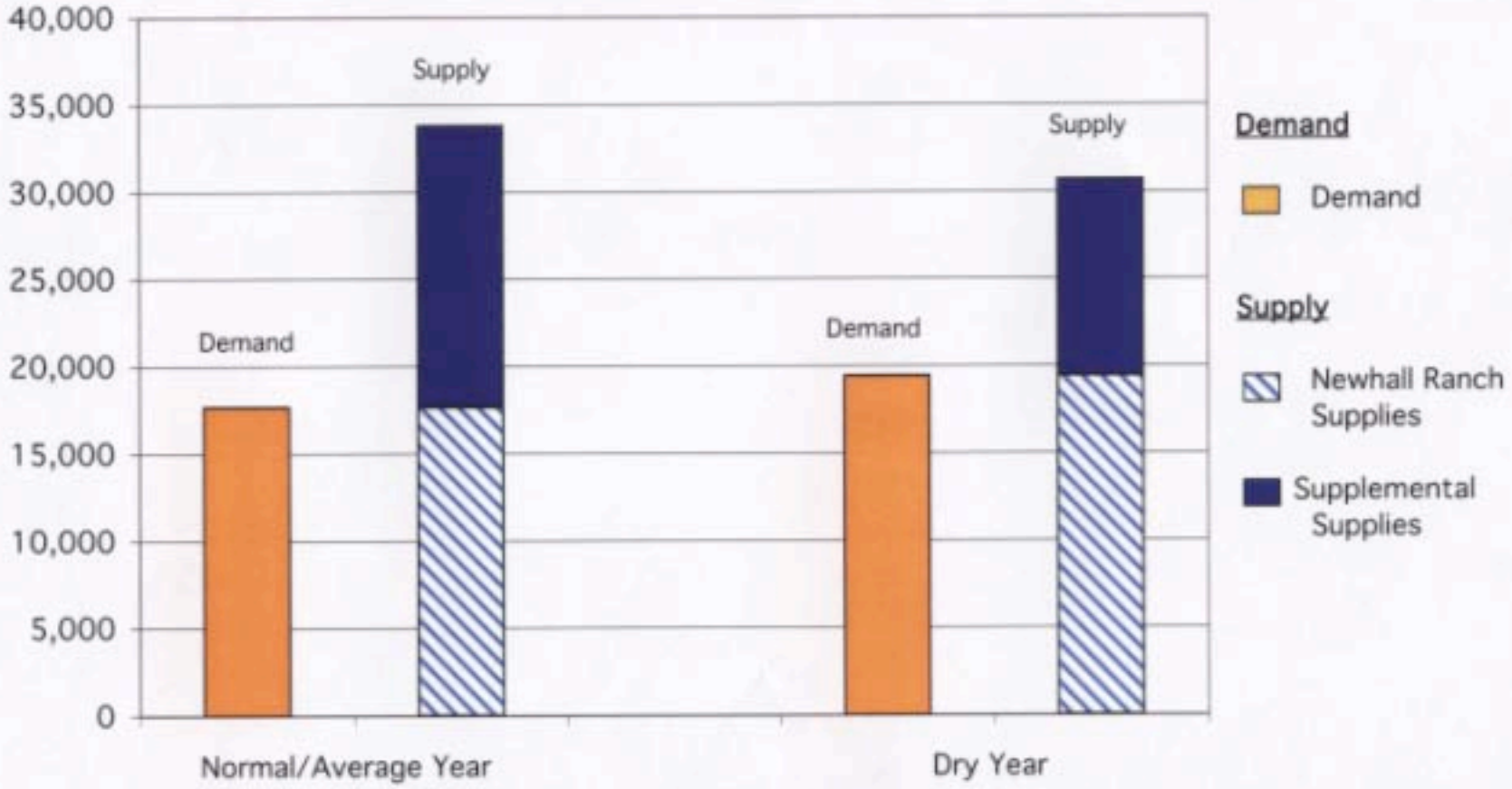
	Supplemental Supplies	
	3,044	Newhall/SWP Water (d)
	4,085	Semitropic Groundwater Banking Project (e)
	4,100	Saugus Groundwater Banking/ASR Program (f)
Total	**13,701**	

(d) Newhall/SWP water (7,648 acre-feet per year of annual entitlement) secured by the applicant from landowners served by a member agency of the Kern County Water Agency, which would be delivered through SWP facilities to CLWA. This source would be reduced to approximately 39.8 percent in dry years as discussed in **Section 2.5, Water Resources** (3,044 = 7,648 x 0.398). This water is not related to CLWA's 95,200 AF entitlement.
(e) The project applicant has entered into an agreement to secure water storage capacity of up to 55,000 acre-feet in the Semitropic Water Storage District Groundwater Banking Project. The stored water would be extracted in dry years in amounts of up to 4,950 AFY from the project. This supply will be used as a water source for the Specific Plan in dry years only. The storage capacity will be filled in the initial years (beginning in year 2005) from available water before Newhall Ranch demand requires this supply. Afterward, further demand for this water in wet/average years, on an as needed basis, could be met by banking excess Newhall/SWP Water, Castaic Creek Flood Flows, CLWA SWP entitlement and other supplies as available.
(f) The Saugus Groundwater Banking/ASR Program involves injecting or "banking" 4,500 AFY of treated Newhall/SWP water or other available water at times when those sources are readily available in normal/average years. During drought periods, up to 4,100 AFY would be withdrawn from the groundwater bank to partially meet Specific Plan water demand.

Chart ES-1

Newhall Ranch Water Demand vs. Supply

(acre-feet per year)



NOTE: SUPPLY IS GREATER THAN DEMAND

(b) Supplemental Water Supplies

Even though enough water already exists to meet the needs of the Specific Plan, the applicant has taken the following actions in order to enhance the reliability of Specific Plan water supplies:

- **Newhall/SWP Water** – The applicant has secured 7,648 AFY of water under contract from landowners served by a member agency of the Kern County Water Agency.

- **Semitropic Groundwater Banking Project** - The applicant has purchased up to 55,000 acre-feet of groundwater storage capacity in the Semitropic Groundwater Bank, located in Kern County, and will utilize in dry years water stored in that bank during average/normal and wet years. Sources of water that could be stored in this banking project include, but are not limited to, Nickel Water, Newhall/SWP supplies, and Other CLWA Supplies.

- **Saugus Groundwater Banking/ASR Program** - In dry years, the applicant will utilize water stored in the proposed Saugus Groundwater Bank (also termed Aquifer Storage and Recovery (ASR)) in normal and wet years.

- **Castaic Creek Flood Flows** – Subject to approval by the State Department of Water Resources (DWR), Castaic Creek flood flows could be used in wet and normal/average years, when available, as a water source for the Semitropic Groundwater Banking Project (through water transfers) and the Saugus Groundwater Banking/ASR Program. This supply source is variable; in drier years, the flood flows are not available.

- **CLWA SWP and Other Supplies** –A relatively small portion of CLWA's existing SWP Table A water entitlement could be used, if needed, to supplement a portion of the Specific Plan's potable water need. As a SWP contractor, CLWA may also obtain additional SWP supplies from or through DWR in connection with other programs. The CLWA supplies are only considered a supplemental source for Newhall Ranch because the applicant has taken steps to secure its own primary potable water supplies. When available in wet and normal/average years, excess CLWA SWP water and other supplies available to CLWA could be used in addition to Newhall/SWP water and Castaic Creek flood flows as a source of water for storage in the Semitropic Groundwater Banking Project (through water transfers) and the Saugus Groundwater Banking/ASR Program.

The surplus of water created by existing water sources and the actions of the applicant will ensure an adequate supply of water for the Specific Plan without creating significant impacts on existing water supplies or downstream water users. For additional information on this topic, please see **Section 2.5, Water Resources.**

Question: Is the Saugus Groundwater Banking/ASR Program Feasible?

Answer: Yes

The results of injection and recovery tests conducted by the applicant demonstrate that implementing a groundwater banking/ASR program in the Saugus Formation is feasible. The determination that the Saugus Groundwater Banking program is feasible is based on the actual injection and pumping tests conducted at wells in the Saugus Formation from July 2000 through October 2000, as well as groundwater modeling. (*See, Newhall Ranch ASR Impact Evaluation,* CH_2MHill; and *Assessment of the Hydrogeologic Feasibility of Injection and Recovery of Water in the Saugus Formation, Santa Clarita Valley, California, Slade.*) The testing and the modeling show that there is no discernible effect on Alluvial water levels or the Santa Clara River, from either Saugus Formation well injection or pumping. For additional information on this topic, please see **Section 2.5, Water Resources, Subsection 2.5.5.3(d)(5)** entitled "**Saugus Groundwater Banking/ASR Program.**"

Question: Is the Newhall Ranch Specific Plan Consistent with the General Plan Development Monitoring System Policies as They Relate to Water Supplies?

Answer: Yes

The Newhall Ranch Specific Plan is consistent with the County's General Plan DMS policies as they relate to water supplies. This analysis has been completed to determine if sufficient water supplies will be available for the Specific Plan under the County's General Plan Development Monitoring System (DMS) requirements. Because two independent primary water sources have been secured to meet the potable water needs of the Specific Plan, no additional potable water would be needed from State Water Project (SWP) and the Castaic Lake Water Agency (CLWA) supplies. For additional information on this topic, please see **Section 2.5, Water Resources, Subsection 2.5.5.4(a)(1)** entitled "**DMS General Plan Consistency.**"

Water Reclamation Plant Alternatives

Question: What are the impacts associated with siting the WRP off-river, including an analysis of the biological impacts of that siting?

Answer:

Non-River Alternative-The non-river alternative would entail constructing the WRP at a location more removed from the Santa Clara River than the proposed location. It is expected that slightly less land would be required for the WRP under this alternative (approximately 9 acres compared to 15 acres under the proposed project because the non-river site is not as confined). The WRP would be at a slightly higher elevation and, therefore, would require some pumping, resulting in higher costs for construction, operation and maintenance, and higher energy costs. With the exception of those topics described below, all other environmental impacts associated with this alternative (such as traffic, etc.) are considered similar to those created by the proposed project and would merely be relocated to another site as a result of this alternative.

Development of the WRP under this alternative would require the conversion of approximately 9 acres of prime farmland. Because construction of the WRP on this alternative site would slightly decrease impacts to agricultural resources by approximately 0.5 acre, the Non-River Alternative is slightly superior to the proposed project from an agricultural resources perspective when considering only the plant itself. However, it should be noted that if the WRP is not constructed on this alternative site, the 9 acres of agricultural land present on the alternative site would still be converted to residential land uses under the Specific Plan. Similarly, if the WRP is constructed at this alternative site and not the proposed project site, the 9.5 acres of agricultural land on the proposed project site would still be converted to urban land uses (i.e., Business Park). Under either the proposed project or this alternative site, all the agricultural land (18.5 acres) would be converted to urban uses regardless of the alternative site selected. Consequently, this alternative is not necessarily environmentally superior to the proposed project with respect to agricultural resource impacts.

From a biological perspective, implementation of this alternative would decrease the magnitude of impacts to sensitive vegetation communities, because the alternative site contains no sensitive habitats. This alternative would result in an increase in energy consumption because it would require a greater amount of energy to pump waste up grade to the treatment plant. A consequence of this increased energy consumption would be the generation of air emissions in amounts incrementally greater than under the proposed project.

This Alternative would be located immediately adjacent to planned Low-Medium Residential land uses, which are incompatible with a WRP. Under the proposed project, the WRP would not be located adjacent to incompatible land uses. Rather, it would be located adjacent to planned Business Park uses.

With regard to noise generation and land use compatibility, therefore, the proposed project is environmentally superior to the Non-River Alternative.

In light of these facts, on balance, the Non-River Alternative is considered environmentally superior with regard to impacts on sensitive biological habitats, and is not considered environmentally superior to the proposed project with regard to impacts to air quality, energy consumption and noise. Please see **Section 3.0** of this Additional Analysis for further information on this topic.

NEW DRAFT ADDITIONAL ANALYSIS SECTIONS

Spineflower and Other Sensitive Plant Species

Section 2.6 summarizes the pertinent history and background relating to an endangered plant called the San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*; "spineflower") and other sensitive plant species on Newhall Ranch, including surveys conducted by the applicant and the California Department of Fish and Game (CDFG). **Section 2.6** includes an analysis of direct, indirect and cumulative impacts on the spineflower and other sensitive plant species due to development of the Newhall Ranch Specific Plan and WRP. While such an analysis is typically completed at the time subdivision maps allowing construction are proposed, this document addresses potential impacts to spineflower and other sensitive plants at the program level. **Section 2.6** also sets forth a comprehensive set of mitigation measures as part of a program to, in combination with the mitigation measures already presented in the Revised Draft EIR for the Newhall Ranch Specific Plan and WRP, avoid or minimize impacts to the spineflower and other sensitive plant species that may be found on the site. Environmental documents to be prepared for future subdivision maps will also present measures and/or programs necessary to mitigate potential impacts to spineflower and other sensitive plants.

Existing Setting - A total of 10 sensitive plants have been observed on the Newhall Ranch site. Of those 10, four are unconfirmed at the time of this writing due to seasonal limitations or ongoing discussion among botanical experts. The six confirmed sensitive plants include: Peirson's morning-glory, Island mountain-mahogany, San Fernando Valley spineflower, Southern California black walnut, Southwestern spiny rush, and Short-joint beavertail. Of these, the only plant on the state's endangered species list is the spineflower. The four unconfirmed sensitive plants include: Club-haired mariposa lily, Slender mariposa lily, Marcescent dudleya (*Dudleya cymosa* ssp. *marcescens*) or Santa Monica Mountains dudleya (*Dudleya cymosa* ssp. *ovatifolia*), and Los Angeles sunflower. Three unconfirmed plants will require current year flowers to positively identify. Because of the similarity of

morphological characteristics between several species and subspecies of sunflower potentially occurring in this region, the specific taxonomic identify of observed sunflower has not been confirmed at this time. If confirmed, it is a plant that was thought to be extinct.

The original Draft Additional Analysis (2001) discussed the spineflower on the Newhall Ranch Specific Plan site. Specifically, the original Draft Additional Analysis described the spineflower's historical range and habitat requirements, and confirmed the presence of spineflower on the Grapevine Mesa location of Newhall Ranch. As part of more recent rare plant surveys, spineflower was also observed at two additional locations on Newhall Ranch: Airport Mesa and San Martinez. Approximately 6.3 acres (or 0.05 percent) of the 11,963-acre Newhall Ranch is known to support spineflower.

Direct Impacts of the Specific Plan - As indicated above, spineflower was observed in three general locations within the Specific Plan area: Airport Mesa, Grapevine Mesa, and San Martinez. Some populations of the spineflower are in locations that could be directly or indirectly affected by development associated with Specific Plan implementation, while other populations are located within areas that will be protected as open space. Based on field survey estimates, approximately 6.1 acres of habitat supporting spineflower plants are located within a development-related land use area; and 0.18 acres of habitat supporting spineflower plants are located in proposed open space areas in the Grapevine Mesa area. Until more detailed project-level subdivision maps and plans are prepared, it is assumed that all land within an area zoned for development will be converted. Therefore, any spineflower populations within these areas have been determined at this time to be directly impacted (i.e., removed from the site) by buildout of the Specific Plan. As noted above, the short-joint beavertail cactus, a CNPS List 1B plant species, was also observed during the surveys. Two plant taxa were observed during surveys that, due to the dry field conditions during 2002, did not permit definitive identification of these taxa to the species level. These taxa include *Calochortus* and *Dudleya*. Both the *Calochortus* and *Dudleya* observations occurred in areas proposed for development under the Specific Plan. Surveys would need to be conducted during next year's blooming season to confirm the exact species of these taxa.

A population of *Helianthus* was also discovered in a wetland area along the Santa Clara River. Because of the similarity of morphological characteristics between several species and subspecies of *Helianthus* potentially occurring in this region, the specific taxonomic identify of this single population of plants is not yet confirmed at this time. However, impacts to *Helianthus* are not considered significant because the population is located within an Open Area, which would prohibit development in that area.

An additional seven plant species that are state- or federally-listed as threatened or endangered, and 10 species listed by the CNPS as a List 1 or List 2 species, were not observed but were determined to have at least a moderate potential to occur within the Specific Plan area (DUDEK 2002). The locations of any other plant species observed during the course of the spineflower surveys were mapped as illustrated in **Appendix 2.6**.

Impacts to any plants located within the Specific Plan area that are state- or federally-listed as threatened or endangered (e.g., the spineflower) or listed as CNPS List 1 or List 2 plant species (e.g., the cactus), are regarded as significant impacts under CEQA. Impacts to remaining plants are not considered significant if they are not expected to occur onsite, have a low potential of occurring, or are of a relatively low sensitivity. If future surveys confirm the *Calochortus* species to be one of the CNPS List 1B plants potentially occurring in the area, or the *Dudleya* to be one of the federally-listed threatened species known to occur in the region, the loss of occupied habitat of either of these species, directly or indirectly, would be considered a significant impact.

Indirect Impacts of the Specific Plan - Indirect impacts to sensitive plants would occur to those habitat areas adjacent to or within proposed development areas, after implementation of the project-specific subdivision maps and associated grading plans. Specifically, the spineflower and other sensitive plant species are vulnerable to certain indirect effects associated with proposed development of Newhall Ranch. Because the character of the property will be altered from its current grazing and agricultural uses to a master planned community, the viability of the spineflower and other sensitive plant species depends upon an understanding of the indirect effects of proposed development in the vicinity of known sensitive plant populations. Indirect impacts to sensitive plants are normally associated with the following factors.

(a) Non-native invasive plant species;

(b) Non-native invasive animal species;

(c) Vegetation clearing for fuel management or creation of roads and trails;

(d) Trampling;

(e) Changes in hydrological conditions (i.e., increases in water supply due to urban irrigation and runoff);

(f) Chemical pollutants (e.g., herbicides, pesticides, fertilizers); and

(g) Increased fire frequency.

Indirect impacts to spineflower and other sensitive plants, all seven indirect impacts/edge effects are considered significant in connection with the proposed development of Newhall Ranch, absent implementation of the Newhall Ranch mitigation program described in Section 2.6.

Conclusion - Because actions are to be taken that would be sufficient to minimize the take of the spineflower, fully mitigate the loss, and create additional spineflower populations, both onsite and offsite, the impacts to the spineflower are considered significant, but mitigable under CEQA and the CEQA Guidelines. This finding nevertheless requires the project applicant to obtain an incidental take permit(s) from CDFG after project approval, and the take permit(s) will not be issued unless CDFG makes findings of "no jeopardy" regarding the spineflower.

Additional Alternatives

In keeping with CEQA's requirement that an EIR assess a range of reasonable alternatives to a project, and given the information regarding the spineflower located on the Specific Plan site and the potential for significant impacts to the plant, this Revised Draft Additional Analysis identifies an expanded analysis of "Alternative 1 - No Project Alternative," and provides three additional alternatives to the Specific Plan that are specifically intended to address potentially significant impacts to the spineflower. These alternatives are referred to as "Alternative 7 – Spineflower Translocation Alternative", "Alternative 8 – Spineflower Avoidance Alternative I" and "Alternative 9 – Spineflower Avoidance Alternative II." Please note that Alternatives 2 through 6 were already adequately analyzed in the Newhall Ranch Revised Draft EIR (March 1999).

Alternative 1 – No Project Alternative - The No Project Alternative is required by the CEQA Guidelines, and it compares the impacts which might occur if the site is left in its present condition with those that would be generated by the proposed Specific Plan. Under the No Project Alternative, the Specific Plan site would remain as vacant land with ongoing oil and natural gas operations; agricultural activities would remain along the Santa Clara River Corridor, on the mesas overlooking the River, and in the wider canyon bottoms; and cattle grazing would remain in Potrero Canyon, along the River, and in other upland and mountainous portions of the Specific Plan site. In addition, Southern California Edison Company and Southern California Gas Company would retain their on-site facilities and the site would continue to be used for motion picture filming.

Although nothing would change within the Specific Plan boundaries under this scenario, the disturbance associated with retaining existing uses on the site would continue. For instance, grazing and ongoing farming activities onsite would continue to disturb the soil surface and existing onsite vegetation. While such disturbances would continue with the No Project Alternative, they would be of lesser magnitude than the Specific Plan, although some areas that would be protected under the Specific Plan would continue to be disturbed under the No Project Alternative.

In addition, under the No Project Alternative, the applicant would continue with its farming/agricultural, grazing and oil and gas operations. The continuation of farming/agricultural operations could also legally intensify over most portions of Newhall Ranch. In particular, the spineflower population areas existing on Newhall Ranch could be converted legally to row crops or dry farming. Similarly, spineflower population areas could continue to be subject to ongoing cattle grazing. On Newhall Ranch, the known spineflower populations occur in agricultural production areas, including farming and cattle grazing. In short, without implementation of the Specific Plan, including its revised mitigation program relating to the spineflower and other sensitive plant species, the onsite spineflower populations could be lawfully damaged or otherwise destroyed in connection with existing and ongoing agricultural/farming/grazing operations.

Based solely on environmental criteria, however, the No Project Alternative would be considered environmentally superior to the Specific Plan because the potential Specific Plan-related impacts described in Section 4.0 of Newhall Ranch Revised Draft EIR (March 1999) would not occur. However, by retaining the Specific Plan site under existing conditions, most of the applicant's Specific Plan objectives would not be met and, if development does not occur on the site, the anticipated future demand for housing[2] and commercial services would likely stimulate development elsewhere in the Santa Clarita Valley, including development in less accessible areas of the Valley with environmental resources that may be comparable to or of greater value than those found on the Specific Plan site. Section 2.7 states that because implementation of this alternative would not meet the applicant's objectives for the site and would likely just divert urban development from this site to another, the alternative is not considered acceptable.

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2 See Southern California Association of Government population projections for project census tracts, Newhall Ranch Revised Draft EIR, Section 4.21, Population, Housing and Employment.

Alternative 7 – Spineflower Translocation Alternative (Same Amount of Development, Spineflower Populations Translocated On-site) - The primary purpose of Alternative 7 is to avoid significant impacts to the on-site spineflower populations by actively translocating all known spineflower plants and seed bank to a location on the Specific Plan site suitable for spineflower growth, including the collection of top soils containing spineflower plants and seed bank, so that the top soil could be relocated to the same relocation area(s) as the translocated spineflower plants. The basis for this alternative is found in the California Native Plant Protection Act (Fish and Game Code, Sections 1900-1913). Consistent with the legal protections afford by the Native Plant Protection Act, this alternative would protect all known onsite spineflower populations for ten days until CDFG salvages the plants through transplantation or translocation activities within the Specific Plan site.

Under Alternative 7, the Specific Plan site would be developed consistent with the Specific Plan Land Use Plan; the same amount of residential, commercial, industrial and other proposed land uses would occur on the site. However, as part of this alternative, several potential translocation areas are designated on the Specific Plan site. The spineflower potentially impacted by implementation of the Specific Plan, without mitigation, presently occupy over 6 acres of land area. While the amount of land set aside for this purpose has not been quantified, given the overall size of the Newhall Ranch area, at least 24 acres of relocation area could be readily found in onsite locations suitable for this species (24 acres allows for a 4:1 replacement ratio).

Given that Alternative 7 would result in the same amount of development as the proposed Specific Plan, the direct and indirect impacts of Alternative 7 would be the same as the Specific Plan with the exception of potential impacts to the spineflower and other resources that may be located within the translocation area. While all the Specific Plan objectives would be met with this alternative, Alternative 7 may not necessarily be considered environmentally superior to the Specific Plan with respect to spineflower impacts. While plants, along with the topsoil, would be salvaged and moved to areas containing spineflower plants collected and placed in translocation areas, temporary disturbance to most of the spineflower populations would occur during this process. In addition, some of the translocation areas would not have the same degree of connectivity to proposed open area that would occur under the Specific Plan. Conversely, the mitigation plan proposed as part of the Specific Plan would result in the direct preservation in place of significantly more of the known spineflower plant area and would result in several more mitigation features (i.e., connectivity, buffering, providing hydrologic protection of spineflower areas, managing water flow, etc.) than would be provided under this Alternative. Consequently, Alternative 7 is not considered as favorable from a rare plant perspective as the Specific Plan.

Alternative 8 – Spineflower Avoidance Alternative I (21,182 Units, Four Percent Reduction in Residential Development, 13 Percent Reduction in Non-Residential Development, Smaller Footprint) - The primary purpose of Alternative 8 is to avoid or minimize the potentially significant direct and indirect biological impacts to the spineflower created by the Specific Plan by reducing the amount of development and by reducing the footprint upon which such development would occur. Under this alternative, a setback of 150 feet from populations of spineflower is proposed. In doing so, many other impacts which could occur as a result of site development might also be reduced in magnitude. Alternative 8 proposes 21,182 Residential units, 5.24 million square feet of Commercial uses, a water reclamation plant, and a golf course. Development under Alternative 8 would not occur at or near most areas that have known populations of spineflower. This alternative assumes that a minor "take", or impact, would occur to small spineflower populations that are isolated and/or would occur in other areas to allow for the construction of major infrastructure components, such as the extension of Magic Mountain Parkway through the site to future Potrero Canyon Road would impact the spineflower near Grapevine Mesa. In addition, many of the proposed spineflower mitigation measures proposed in **Section 2.7** would not occur.

Because some of the environmental impacts of the Specific Plan would be avoided or minimized with Alternative 8, it is environmentally superior to the Specific Plan in some respects (e.g., air quality impacts, traffic impacts, noise impacts, etc). However, Alternative 8 has been rejected in favor of the Specific Plan because Alternative 8 too narrowly limits the range of housing opportunities provided and because many of the basic objectives of the Specific Plan identified in the Project Description of this EIR (Revised Draft EIR Section 1.0) would not be achieved. In addition, when compared with the Specific Plan with the proposed mitigation to spineflower impacts, the preserved spineflower populations under this alternative would not be connected to proposed open areas as proposed under the Specific Plan. In addition, grazing activities would continue with Alternative 8 in the High Country SMA and in areas not within spineflower preserve boundaries. Also, the applicant has indicated that the Open Areas of the High Country Special Management Area would not be dedicated for public use, but would remain in private ownership with no provision for public access. From a biological standpoint, the reduction in grading and avoidance of most on-site spineflower populations under Alternative 8 could environmentally outweighs the loss to the public of the High Country Special Management Area. However, this alternative also allows a "take", or impact, to occur to small spineflower populations that are isolated and/or in other areas to allow for the construction of major infrastructure components, such as the extension of Magic Mountain Parkway. When compared with the Specific Plan with the proposed mitigation to spineflower impacts presented in **Section 2.6**, the preserved spineflower populations would not be connected to proposed open areas as proposed under the Specific Plan. Nor would other proposed mitigation measures occur. Specific measures proposed within

this Revised Draft Additional Analysis that would not occur with this alternative include:

- the Agency consultation provisions proposed in **Section 2.6**;
- the provision of Spineflower Special Study Mitigation Overlays;
- the creation of managed preserves as described in **Section 2.6**;
- the connectivity and buffer provisions as described in **Section 2.6**;
- the provision for future engineering, design and grading review and modifications;
- the monitoring and management provisions as described in **Section 2.6**; and
- consultation provisions regarding ongoing agricultural activities.

In effect, under Alternative 8 populations of spineflower would essentially be surrounded by proposed development within 150 feet with fencing to prohibit trespass, thereby eliminating any connection to open space areas and the active preserve management and consultation provisions proposed as mitigation in **Section 2.6**. Based on this information, Alternative 8 is not biologically superior to the Specific Plan with respect to impacts to the spineflower. For all the reasons provided in **Section 2.7**, Alternative 8 has been rejected in favor of the proposed Specific Plan as mitigated.

Alternative 9 – Spineflower Avoidance Alternative II (20,281 Units, Eight Percent Reduction in Residential Development, 20 Percent Reduction in Non-Residential Development, Smaller Footprint) - The primary purpose of Alternative 9 is, like Alternative 8, to avoid or minimize the potentially significant direct and indirect biological impacts to the spineflower created by the Specific Plan by reducing the amount of development and by reducing the footprint upon which such development would occur. Under this alternative, a setback of 300 feet from populations of spineflower is proposed. In doing so, many other impacts which could occur as a result of site development might also be reduced in magnitude. Alternative 9 proposes 20,281 Residential units, 4.98 million square feet of Commercial uses, a water reclamation plant, and a golf course. Development under Alternative 9 would not occur at or near most areas that have known populations of spineflower.

Because some of the environmental impacts of the Specific Plan would be avoided or minimized with Alternative 9, it is environmentally superior to the Specific Plan in some respects (e.g., air quality impacts, traffic impacts, noise impacts, etc). However, Alternative 9 has been rejected in favor of the Specific Plan because Alternative 9 too narrowly limits the range of housing opportunities provided and because many of the basic objectives of the Specific Plan identified in the Project Description of this EIR (Revised Draft EIR Section 1.0) would not be achieved. In addition, when compared with the Specific Plan with the proposed mitigation to spineflower impacts, the preserved spineflower

populations would not be connected to proposed open areas to the same degree as they would be under the mitigation proposed for the Specific Plan. In addition, grazing activities would continue with Alternative 9 in the High Country SMA and in areas not within spineflower preserve boundaries. Also, the applicant has indicated that the Open Areas of the High Country Special Management Area would not be dedicated for public use, but would remain in private ownership with no provision for public access. From a biological standpoint, the reduction in grading and avoidance of most on-site spineflower populations under Alternative 9 could environmentally outweighs the loss to the public of the High Country Special Management Area. However, this alternative also allows a "take", or impact, to occur to small spineflower populations that are isolated and/or in other areas to allow for the construction of major infrastructure components, such as the extension of Magic Mountain Parkway. When compared with the Specific Plan with the proposed mitigation to spineflower impacts presented in **Section 2.6**, the preserved spineflower populations would provide a small degree of connectivity to open areas; however, the degree of connectivity would not be as great as would occur under the mitigation proposed for the Specific Plan. Nor would other proposed mitigation measures occur. Specific measures proposed within this Draft Additional Analysis that would not occur with this alternative include:

- the Agency consultation provisions proposed in **Section 2.6**;
- the provision of Spineflower Special Study Mitigation Overlays;
- the creation of managed preserves as described in **Section 2.6**;
- the connectivity and buffer provisions as described in **Section 2.6**;
- the provision for future engineering, design and grading review and modifications;
- the monitoring and management provisions as described in **Section 2.6**; and
- consultation provisions regarding ongoing agricultural activities.

In effect, under Alternative 9 populations of spineflower would essentially be surrounded by proposed development within 300 feet with fencing to prohibit trespass, thereby eliminating any connection to open space areas and the active preserve management and consultation provisions proposed as mitigation in **Section 2.6**. Based on this information, Alternative 9 is not biologically superior to the Specific Plan with respect to impacts to the spineflower. For all the reasons provided in **Section 2.7**, Alternative 9 has been rejected in favor of the proposed Specific Plan as mitigated.

1.0 INTRODUCTION AND PROJECT DESCRIPTION

In April 2001, the County of Los Angeles publicly circulated the Draft Additional Analysis for the Newhall Ranch Specific Plan and Water Reclamation Plant Final Environmental Impact Report ("Final EIR") (SCH No. 95011015). In October 2001, the County then publicly circulated a Final Additional Analysis (consisting of Comments and Responses to Comments) as part of Additional Analysis review proceedings before the County of Los Angeles Regional Planning Commission. As discussed more fully below, the purpose of the Additional Analysis is to address six issues raised by the trial court in litigation regarding the adequacy of the prior Newhall Ranch Final EIR. Since public circulation of the Newhall Ranch Draft Additional Analysis and Final Additional Analysis, additional information has been presented, which resulted in the County's decision to revise and recirculate portions of the Draft Additional Analysis.

This Revised Draft Additional Analysis has been prepared to describe changes to the sources of water for the Specific Plan, to provide an update regarding sensitive plant species occurring on the Specific Plan site, to provide additional alternatives to the Specific Plan and to correct minor errors in the prior Draft Additional Analysis (April 2001). The three revised sections indicated below are intended to replace the corresponding chapters in the prior Draft Additional Analysis. For example, the Water Resources chapter (Section 2.5) presented in this document completely replaces the Water Resources chapter (Section 2.5) presented in the prior Draft Additional Analysis (April 2001). Only those portions of the prior Draft Additional Analysis, revised as noted below, are included in this Revised Draft Additional Analysis. Edited copies of the three revised sections, showing the revisions made in underline and strikeout format, are available for review at the County of Los Angeles Public Library and County of Los Angeles Department of Regional Planning, 320 West Temple Street, 13th Floor, Los Angeles, California 90012. Contact Mr. Lee Stark.

The following sections of the Draft Additional Analysis have been revised and replaced:

- **Executive Summary,**
- **Section 1.0 Introduction and Project Description,**
- **Section 2.5 Water Resources**, and

In addition, the following two new sections have been added to the Draft Additional Analysis:

- **Section 2.6 Spineflower and Other Sensitive Plant Species**, and
- **Section 2.7 Additional Alternatives.**

Please refer to the April 2001 Draft Additional Analysis for the unchanged portions of the Draft Additional Analysis.

1.1 INTRODUCTION

In March 1999, the County of Los Angeles Board of Supervisors (the County) certified the Final Environmental Impact Report (FEIR) for the Newhall Ranch Specific Plan and Water Reclamation Plant (WRP) (SCH No. 95011015), and approved the Newhall Ranch Specific Plan and WRP. Subsequently, various parties challenged the County's certification of the FEIR and approval of the Specific Plan and WRP in a consolidated action in Kern County Superior Court entitled, United Water Conservation District v. County of Los Angeles, et al., Case No. 239324 RDR. The trial court found that the FEIR required additional analysis with regard to the following issues: (1) traffic impacts to Ventura County arterial roadways exiting State Routes 23 and 126; (2) biological impacts to the Ventura County portion of the Salt Creek wildlife corridor; (3) biological impacts in the Santa Clara River corridor caused by channelization and bank hardening; (4) adequacy of water sources for the proposed Specific Plan, including impacts caused by employment of the Aquifer Storage and Recovery (ASR) alternative; and (5) the alternative of siting the Specific Plan's Water Reclamation Plant off-river, including an analysis of biological impacts of that siting. The trial court also instructed the County to ensure that the Specific Plan is consistent with the County General Plan policies requiring protection of natural resources in Significant Ecological Areas (SEAs) as those standards apply to SEA 23, and the General Plan Development Monitoring System (DMS) policies as they relate to water supplies. Consequently, the Court set aside approval of the Specific Plan and WRP, and FEIR certification, but only with respect to the six issues discussed above. The trial court did not set aside approval of the Specific Plan and WRP or the FEIR certification, with respect to any other issues.

For further information regarding the Additional Analysis, the following documents are attached in **Appendix 1.0** of this document: (a) Peremptory Writ of Mandate issued by the Kern County Superior Court; (b) Letter to the Honorable Board of Supervisors, County of Los Angeles, from Lloyd W. Pellman, County Counsel, dated August 17, 2000, which discusses the recommended action to be taken by the Board of Supervisors regarding certification of the FEIR and approval of the Newhall Ranch Specific Plan

and WRP; and (c) Resolution of the Board of Supervisors, adopted August 29, 2000, including a copy of the trial court's writ.

The County of Los Angeles, through the Department of Regional Planning, is the "lead agency" in connection with the preparation of this Additional Analysis to the FEIR. The purpose of this Additional Analysis is to address each of the six issues discussed above. To be consistent with the trial court's order, this Additional Analysis is presented in six technical sections, one section for each of the issues that the trial court directed be further studied. The final Mitigation Monitoring Plan from the Final Newhall Ranch Specific Plan and WRP EIR is found in **Section 4.0** of this document. Each of the sections indicated above, except those relating to traffic in Ventura County and water supply, were provided to the County of Los Angeles Significant Ecological Area Technical Advisory Committee (SEATAC) for review. As a result of that review, changes to the analysis were made in response to SEATAC comments.

1.2 PROJECT DESCRIPTION

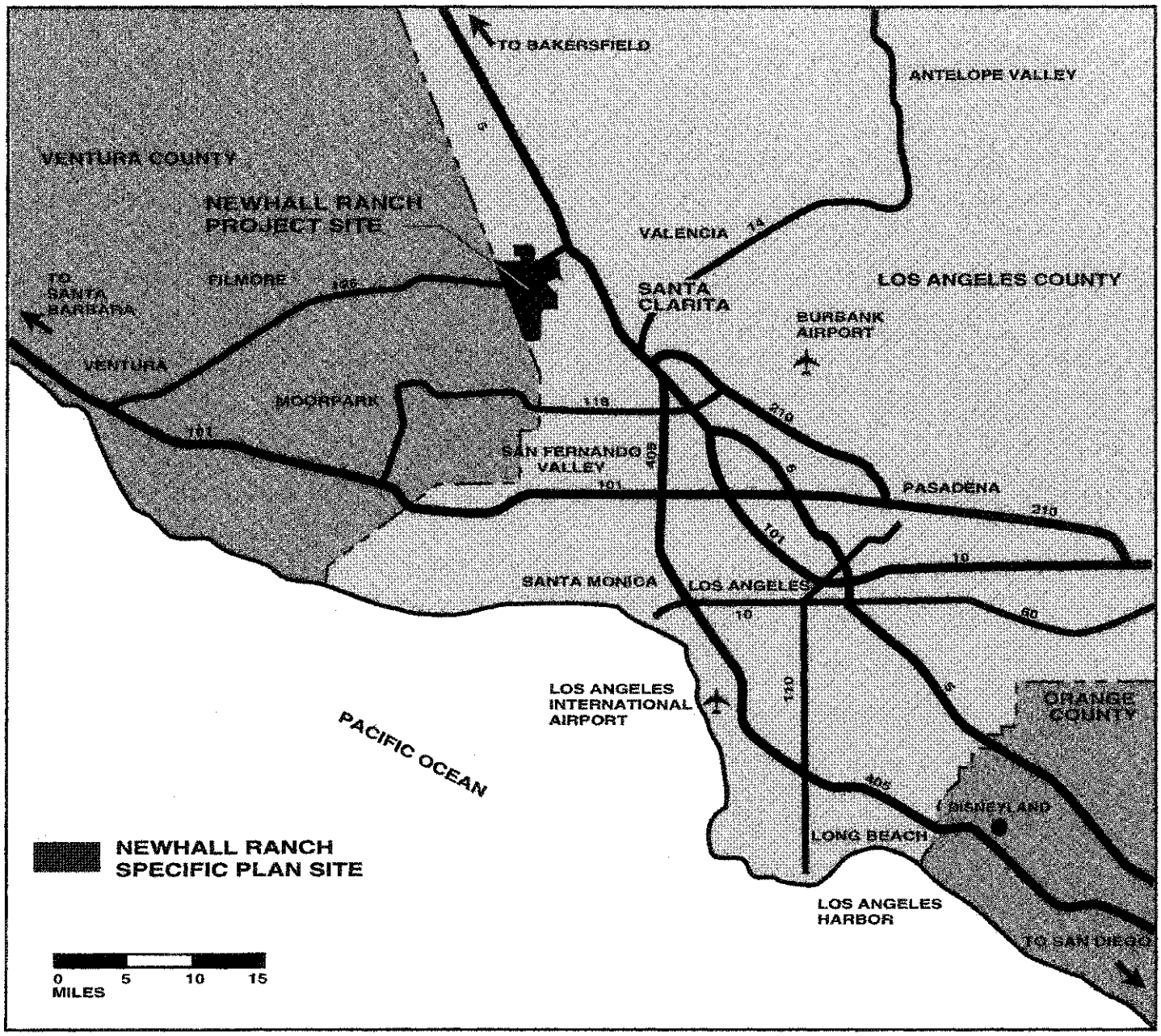
The Newhall Ranch Specific Plan covers a total of approximately 11,963 acres. As directed by the trial court, the County will again consider approval of the Specific Plan and WRP, but only with respect to the additional analysis of the six issues discussed above. The revised Specific Plan, as approved by the County of Los Angeles Board of Supervisors in March 1999, includes 21,615 dwelling units on 4,835 acres (including an 18-hole golf course, 10 neighborhood parks and seven schools), 630 acres of mixed uses (including residential, office, and retail commercial uses), 67 acres of commercial uses, 256 acres of business park uses (including light manufacturing, warehousing and distribution), 37 acres of visitor serving uses, 6,138 acres of open area, 3 community parks on 186 acres, and 367 acres of arterial roads and community facilities (including a new 6.9 million gallon per day water reclamation plant, one library and two fire stations). The build-out of the Specific Plan is projected to occur over approximately 25 to 30 years, depending upon economic and market conditions. The build-out of the Newhall Ranch Specific Plan would eventually result in an on-site resident population of approximately 60,000 persons. The location of the Specific Plan area and WRP site are illustrated on **Figures 1.0-1** and **1.0-2**. The approved Newhall Ranch land use plan and statistical summary are shown in **Figure 1.0-3** and **Table 1.0-1**, respectively.

Table 1.0-1
Land Use Plan Statistical Breakdown
(Table 2.3-1 from Specific Plan)

LAND USES	Gross Acres	Dwelling Units	Second Units [1]
Residential:			
Estate [1]	1,326.2	423	423
Low	744.4	671	
Low-Medium	1,796.9	6,000	
Medium	845.7	7,652	
High	121.8	2,376	
Subtotal	4,835.0	17,122	423
Mixed-Use and Non-Residential:			
Mixed Use [2]	630.4	4,493	
Commercial	67.2		
Business Park	256.3		
Visitor Serving	36.7		
Subtotal	990.6	4,493	0
Major Open Areas:			
High Country SMA	4,213.8		
River Corridor SMA	818.6		
Open Area	1,105.8		
Subtotal	6,138.2	0	0
TOTAL	11,963.8	21,615	423
(Total Units including Second units [1])		22,038	

	Land Use Overlays	Approx. Acre Allocation
10	Neighborhood Parks	50 ac
5	Elementary Schools	35 ac
1	Junior High School	25 ac
1	High School	45 ac
1	Golf Course	180 ac
2	Fire Stations	2 ac
1	Library	2 ac
1	Water Reclamation Plant	15 ac
1	Lake	15 ac
3	Community Parks	186 ac
1	Electrical Substation	2 ac
	Arterial Roads	331 ac

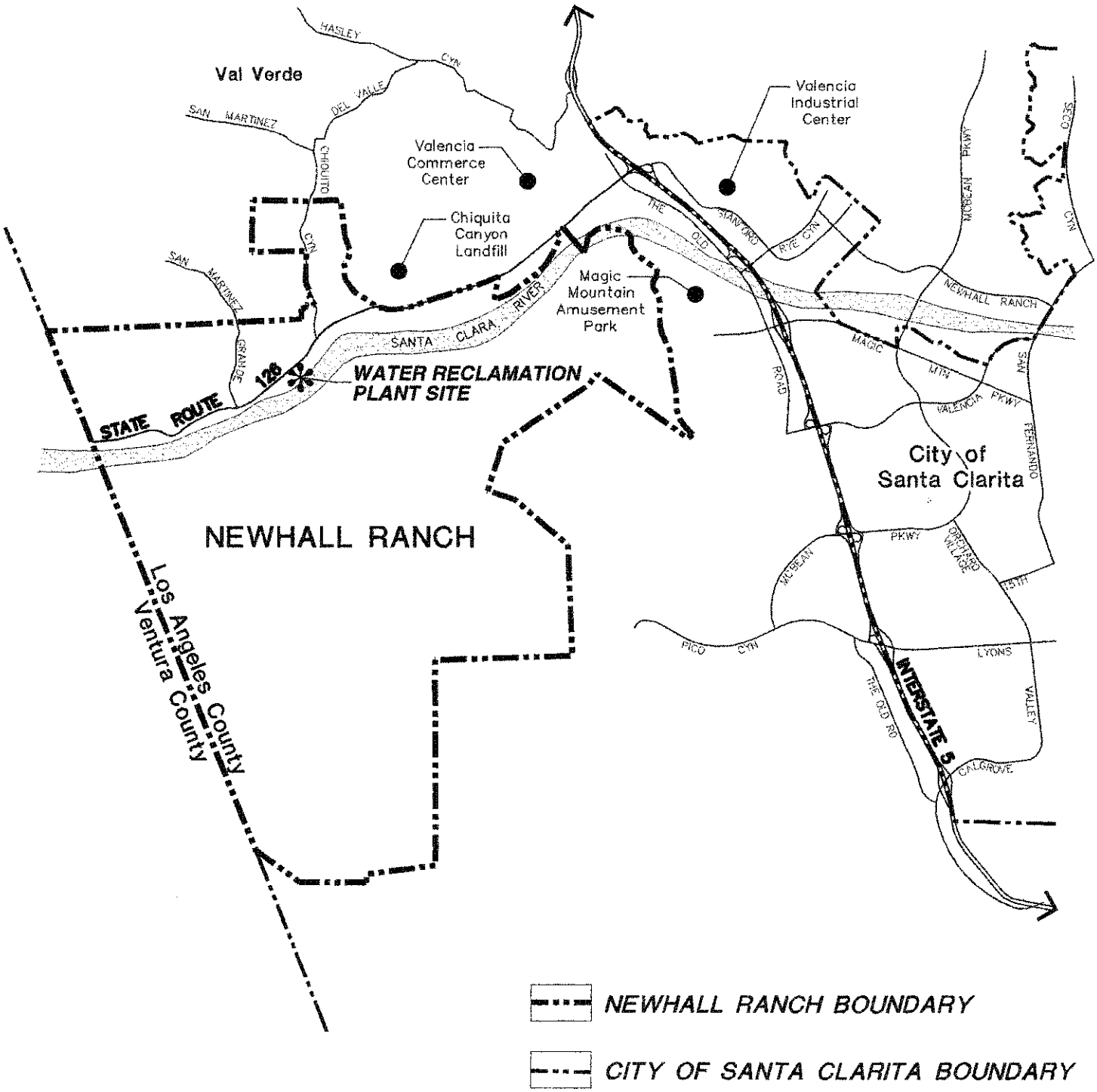
[1] *Within each Estate lot one (1) Second Unit is eligible to be constructed with the approval of a CUP (see Second Units, Section 3.9). This may increase the total number of permitted dwelling units of 21,615 by 423, to a maximum total units of 22,038.*
[2] *Mixed-use includes commercial and residential uses.*



NEWHALL RANCH™
SPECIFIC PLAN
Prepared For: Newhall Ranch Company

EXHIBIT 1.0-1
REGIONAL LOCATION

Computer Mapping by FORMA Systems



NEWHALL RANCH™
SPECIFIC PLAN

Prepared For: Newhall Ranch Company

EXHIBIT 1.0-2
VICINITY MAP

Computer Mapping by FORMA Systems

FEBRUARY 1999

NEWHALL RANCH®
SPECIFIC PLAN
Prepared For: Newhall Ranch Company

- E — ESTATE RESIDENTIAL
- L — LOW RESIDENTIAL
- LM — LOW-MEDIUM RESIDENTIAL
- M — MEDIUM RESIDENTIAL
- H — HIGH RESIDENTIAL
- MU — MIXED USE
- C — COMMERCIAL (RETAIL/OFFICE)
- BP — BUSINESS PARK
- VS — VISITOR SERVING
- OA — OPEN AREA
- RC — RIVER CORRIDOR SPECIAL MANAGEMENT AREA (SEA #23)
- HC — HIGH COUNTRY SPECIAL MANAGEMENT AREA (SEA #20)
- ROADS
- SCE/UTILITY EASEMENTS

LAND USE OVERLAYS (POTENTIAL LOCATIONS):

- CP — COMMUNITY PARK
- NP — NEIGHBORHOOD PARK
- ES — ELEMENTARY SCHOOL
- JH — JUNIOR HIGH SCHOOL
- HS — HIGH SCHOOL
- GC — GOLF COURSE
- LK — COMMUNITY LAKE
- FS — FIRE STATION
- S — ELECTRICAL SUBSTATION
- LIB — LIBRARY
- WR — WATER RECLAMATION PLANT

EXHIBIT 1.0-3
LAND USE PLAN

FEBRUARY 1999

2.5 WATER RESOURCES

2.5.1 *INTRODUCTION AND SUMMARY*

Portions of this section have been revised since the Newhall Ranch Draft Additional Analysis was circulated for public review in April 2001. This revised section completely replaces and supersedes the prior section 2.5 (2001). Although this section replaces the prior version, the basic finding with respect to water resources remains unchanged. This finding is presented below. A redline copy of the original section 2.5 with the revisions made is available for review upon request at the County of Los Angeles Public Libraries and County of Los Angeles Department of Regional Planning, 320 West Temple Street, 13th Floor, Los Angeles, California. Contact Lee Stark.

An adequate supply of water is available to meet the demands of the Newhall Ranch Specific Plan without creating significant environmental impacts.

2.5.1.1 Preface

This section describes the trial court's decision and writ in the Newhall Ranch litigation. It also summarizes the water supply sources that would be used to meet the projected water demand for the Newhall Ranch Specific Plan in response to the trial court's decision and writ.

2.5.1.2 Trial Court Decision Regarding Water Resources

The Water Resources Section was prepared in response to a decision and writ of mandate issued by the Kern County Superior Court (Honorable Roger D. Randall), finding that the Newhall Ranch Final EIR did not adequately demonstrate that sufficient water will be available for build-out of the Newhall Ranch Specific Plan ("Newhall Ranch" or "Specific Plan"). The trial court also directed the County of Los Angeles to take action to ensure that the Newhall Ranch Specific Plan is consistent with the General Plan Development Monitoring System (DMS) policies as they relate to water supplies.

On page 4 of the writ (**Appendix 1.0(a)**), the trial court found that the Newhall Ranch Final EIR did not adequately demonstrate that sufficient water will be available for build-out of the Specific Plan. The trial court also found that the Specific Plan could only meet its water demands if it also utilized flood flows from Castaic Creek. However, the trial court found a lack of substantial evidence showing that modification of the agreement to allow the withdrawal of the flood flows and the storage of Newhall's share of those flows was achievable. In addition, the trial court found a lack of substantial evidence to support a finding that a given volume of water could be stored in the Saugus Aquifer under the Aquifer

Storage and Recovery ("ASR") Alternative. The trial court noted that there is an admitted lack of understanding as to the properties of the aquifers in question and that any assumptions based upon professional judgments are merely guesses as to the capacity of the aquifers which, if wrong, could substantially impact water available to the project and also the use of the aquifers by downstream users in Ventura County. Finally, the trial court found that the EIR's Mitigation Measure 4.11-6, standing alone, did not pass the scrutiny of the analysis found in the Stanislaus decision.[1]

In light of the ruling, the trial court directed any supplemental analyses to demonstrate that adequate water sources will be available for build-out of the Specific Plan, which may be achieved by securing other water sources consistent with CEQA and/or by developing a factual basis providing substantial evidence from which the Board of Supervisors could adequately assess the environmental impacts of the employment of the ASR alternative and its ability to meet water needs. The trial court also directed the County of Los Angeles to take action to ensure that the Newhall Ranch Specific Plan is consistent with the General Plan Development Monitoring System policies as they relate to water supplies. Finally, the trial court directed that the Board of Supervisors consider the additional analysis and adopt such mitigation measures, alternatives and/or additional or revised findings as may be necessary to comply with CEQA and the trial court's writ.

In response to the trial court's direction, the Water Resources Section summarizes the water supply sources that would be used to meet the projected water demand for the Specific Plan and addresses the Specific Plan's consistency with County General Plan DMS policies.

2.5.1.3 Overview of Revised Project Water Supply and Demand Analysis

The County of Los Angeles and the Newhall Ranch applicant are responding to the trial court's decision and direction to demonstrate availability of identified water supplies by now relying on its own primary sources of water supply. The first source is the applicant's historical alluvial groundwater produced in the County of Los Angeles that is presently committed to agriculture uses. The second source is the applicant's purchase of water from Nickel Family LLC in Kern County (the "Nickel Water"). Because these two independent primary water sources meet the potable water needs of the Specific Plan, no potable water would be needed from State Water Project (SWP) and Castaic Lake Water Agency (CLWA) supplies.

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1 The trial court was referring to *Stanislaus Natural Heritage Project v. County of Stanislaus* (1996) 48 Cal.App.4th 182.

The applicant's right to the beneficial use of its agricultural water resources is well established under California law.[2] This agricultural water will be available for agricultural production until it is phased out by urban development. There would be a limit placed on the amount of groundwater converted to urban uses so that it will not exceed the amount already used for agricultural purposes. This agricultural water supply has historical long-term availability and reliability, and is an established supply. This agricultural water supply will provide approximately 81 percent of the Specific Plan's potable water need. The Alluvial aquifer has consistently been at or near its highest level and is not in an overdraft condition.

The Nickel Water consists of 1,607 acre-feet per year (AFY) of water purchased by the applicant from Nickel Family LLC. 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. Pursuant to Nickel's contract water rights, the water delivered to Nickel for sale to Newhall must be high quality water, acceptable for delivery into the California aqueduct. In addition, delivery of the water to Nickel being sold to Newhall is mandatory, unaffected by annual hydrologic conditions. Consequently, the Nickel Water is not subject to unpredictable reductions in quality or quantity typical of other water sources. These characteristics make the Nickel water a dependable water supply source. See **Section 2.5.5.3, Newhall Ranch Water Supplies,** for additional information. The water would be delivered through the Kern County Water Agency and the State Water Project (SWP) system. 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 20th 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, which would then be used as a dry year supplemental supply. These two sources of supply would balance the Newhall Ranch Specific Plan potable water demand in normal/average years. The non-potable demand would be met by the use of reclaimed water supplied by the Newhall Ranch water reclamation plant (WRP) and reclaimed water that will be supplied by CLWA.

Furthermore, the applicant has undertaken several major steps to enhance the reliability of the water supply for the Newhall Ranch Specific Plan. Specifically, the applicant has accomplished the following:

- Secured 7,648 AFY of additional SWP water entitlement from landowners who are served by a member agency of the Kern County Water Agency.
- Purchased 55,000 AF of groundwater banking storage capacity, which includes the ability to use up to 4,950 AF of water during dry years as a water supply from the Semitropic Water Storage District.
- Determined through comprehensive groundwater testing that the local Saugus aquifer can be successfully used for groundwater banking through an aquifer storage and recovery (ASR) program.

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2 See, the California Supreme Court's decision, *City of Barstow v. Mojave Water Agency* (2000) 23 Cal.4th 1224.

- Along with members of the "Downstream Water Users," including the United Water Conservation District, forwarded a unanimously supported request to the State Department of Water Resources (DWR) to amend the 1978 Castaic Creek Flood Flow agreement, thereby making these flows available for use in groundwater banking and for other appropriate beneficial water uses. This step improves the potential to use Castaic Creek flood flows.
- Determined that CLWA could provide the applicant with supplemental water supplies, if needed.

The relationships between Newhall Ranch water demand and supply in normal/average and dry years are provided below in **Tables ES-1** and **ES-2**, and are illustrated in **Chart ES-1**.

2.5.1.4 Answers to Questions of the Trial Court

Provided below are the questions posed by the trial court with regard to Newhall Ranch water resources, along with the answers to each question posed.

Question: Is Sufficient Water Available for Build-out of the Specific Plan?

Answer: Yes

An adequate amount of water is available to meet the needs of the Specific Plan. In fact, actions being taken by the Specific Plan applicant will result in even more water being made available to the Specific Plan than is needed to meet its water need. The primary sources of water for the Specific Plan include supplies that are available for use today in the Santa Clarita Valley. To ensure that adequate water is available for the Specific Plan, the Specific Plan will rely on the following sources of water:

(a) Newhall Ranch Water Supplies

The following summary identifies the Newhall Ranch non-potable and potable water supplies needed to serve the Specific Plan site:

Non-Potable Supplies

Newhall Ranch Reclaimed Water. Reclaimed water (also referred to as "recycled water") from the Water Reclamation Plant ("WRP") proposed as part of the Newhall Ranch Specific Plan would be used to partially meet the non-potable water demands (e.g., irrigation) of the Specific Plan. The availability of this source would occur in stages, mirroring the staged construction of the WRP on the Specific Plan site.

CLWA Reclaimed Water. CLWA would serve the Specific Plan site with reclaimed water from existing upstream WRPs, consistent with CLWA's draft "Reclaimed Water System Master Plan," which is being implemented in stages. This reclaimed water supply would meet the remaining non-potable water demand of the Specific Plan.

Potable Supplies

Newhall Agricultural Water. The project applicant would meet potable water demands of the Specific Plan by using Newhall's historical alluvial groundwater produced in the County of Los Angeles, which is presently committed to agricultural uses. No additional groundwater would be pumped over historical and present amounts; instead, the water presently used to irrigate crops would be treated and then used to partially meet the potable water needs of the Specific Plan.

Nickel Water. The applicant has secured water under contract with Nickel Family LLC in Kern County. 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 water would be delivered through the Kern County Water Agency and the SWP system. The Nickel Water would only be needed on the Specific Plan site in years where all of the Newhall Agricultural Water has been used, which is estimated to occur after the 20th 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, which would then be used as a dry year supplemental supply.

Semitropic Groundwater Banking Project. The project applicant has entered into an agreement to reserve and purchase water storage capacity of up to 55,000 acre-feet in the Semitropic Water Storage District Groundwater Banking Project. The stored water could be extracted in dry years in amounts of up to 4,950 AFY from the project. This supply will be used as a water source for the Specific Plan in dry years only. Sources of water that can be stored in this banking project include, but are not limited to, Nickel Water, Newhall/SWP supplies, and Other CLWA Supplies.

Table ES-1
Newhall Ranch Specific Plan
Normal/Average Year Potable And Non-Potable Water Usage
(Acre-Feet/Year)

	Demand	Supply	
		7,038	Newhall Agricultural Water (a)
		1,607	Nickel Water (b)
Potable	8,645	8,645	
		5,344	Newhall Ranch Reclaimed Water
		3,691	CLWA Reclaimed Water
Non-Potable	9,035	9,035	
Total (c)	**17,680**	**17,680**	

(a) Firm groundwater supply historically and presently used by the applicant for agricultural irrigation purposes on its agricultural land in The County of Los Angeles.
(b) The applicant has secured water under contract with Nickel Family LLC in Kern County. 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 water would be delivered through the Kern County Water Agency and the SWP system.
(c) See Table 2.5-25, Summary of Newhall Ranch Water Demands.

Additional Programs To Enhance Reliability Of Supplies

Groundwater Banking Program for Dry Years (h)		Supplemental Supplies	
Saugus Groundwater Banking/ ASR Program (e)	4,500	4,500	CLWA SWP and Other Supplies (g)
		4,566	Newhall/SWP Water (d)
		7,043	Castaic Creek Flood Flows (f)
Total	**4,500**	**16,109**	

(d) Newhall/SWP water (7,648 acre-feet per year of annual entitlement) secured by the applicant from landowners served by a member agency of the Kern County Water Agency, which would be delivered through SWP facilities to CLWA. This source would be reduced to approximately 59.7 percent in average years as discussed in ***Section 2.5, Water Resources*** *(4,566 = 7,648 x 0.597).*
(e) The Saugus Groundwater Banking/ASR Program involves injecting or "banking" 4,500 AFY of treated Newhall/ SWP water or other available water at times when those sources are readily available in normal/average years. During drought periods, up to 4,100 AFY would be withdrawn from the groundwater bank to partially meet Specific Plan dry year water demand.
(f) Subject to approval by DWR, Castaic Creek flood flows could be used in normal/average years, when available, as a water source for the Semitropic Groundwater Banking Project (through a water transfer), or for the Saugus Groundwater Banking/ASR Program. This supply is variable; in some years, the flood flows are not available.
(g) In addition to Newhall/SWP Water and Castaic Creek Flood Flows, CLWA SWP entitlement and other CLWA supplies could be used as a source of water for injection into the Semitropic and Saugus Groundwater Banks.
(h) CLWA's SWP entitlement is 95,200 acre-feet per year. The amount of the water shown above is not a limitation on the amount of CLWA SWP supplies that could be used as a source of water; however, the CLWA supplies are only considered a supplemental source for Newhall Ranch, because the applicant has taken steps to secure its own primary potable water supplies.

Table ES-2
Newhall Ranch Specific Plan
Dry Year Potable and Non-Potable Water Usage
(acre-feet/year)

	Demand (c)	Supply	
		7,038	Newhall Agricultural Water (a)
		1,607	Nickel Water (b)
		865	Semitropic Groundwater Banking Project (e)
Potable	9,510	9,510	
		5,344	Newhall Ranch Reclaimed Water
		4,595	CLWA Reclaimed Water
Non-Potable	9,939	9,939	
Total	**19,449**	**19,449**	

(a) Firm groundwater supply historically and presently used by the applicant for agricultural irrigation purposes on its agricultural land in The County of Los Angeles.

(b) The applicant has secured water under contract with Nickel Family LLC in Kern County. 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 water would be delivered through the Kern County Water Agency and the SWP system.

(c) Demands are projected to increase in a dry year by approximately 10 percent due to a lack of local rainfall.

Additional Programs To Enhance Reliability Of Supplies

	Supplemental Supplies	
	3,044	Newhall/SWP Water (d)
	4,085	Semitropic Groundwater Banking Project (e)
	4,100	Saugus Groundwater Banking/ASR Program (f)
Total	**13,701**	

(d) Newhall/SWP water (7,648 acre-feet per year of annual entitlement) secured by the applicant from landowners served by a member agency of the Kern County Water Agency, which would be delivered through SWP facilities to CLWA. This source would be reduced to approximately 39.8 percent in dry years as discussed in ***Section 2.5, Water Resources*** *(3,044 = 7,648 x 0.398). This water is not related to CLWA's 95,200 AF entitlement.*

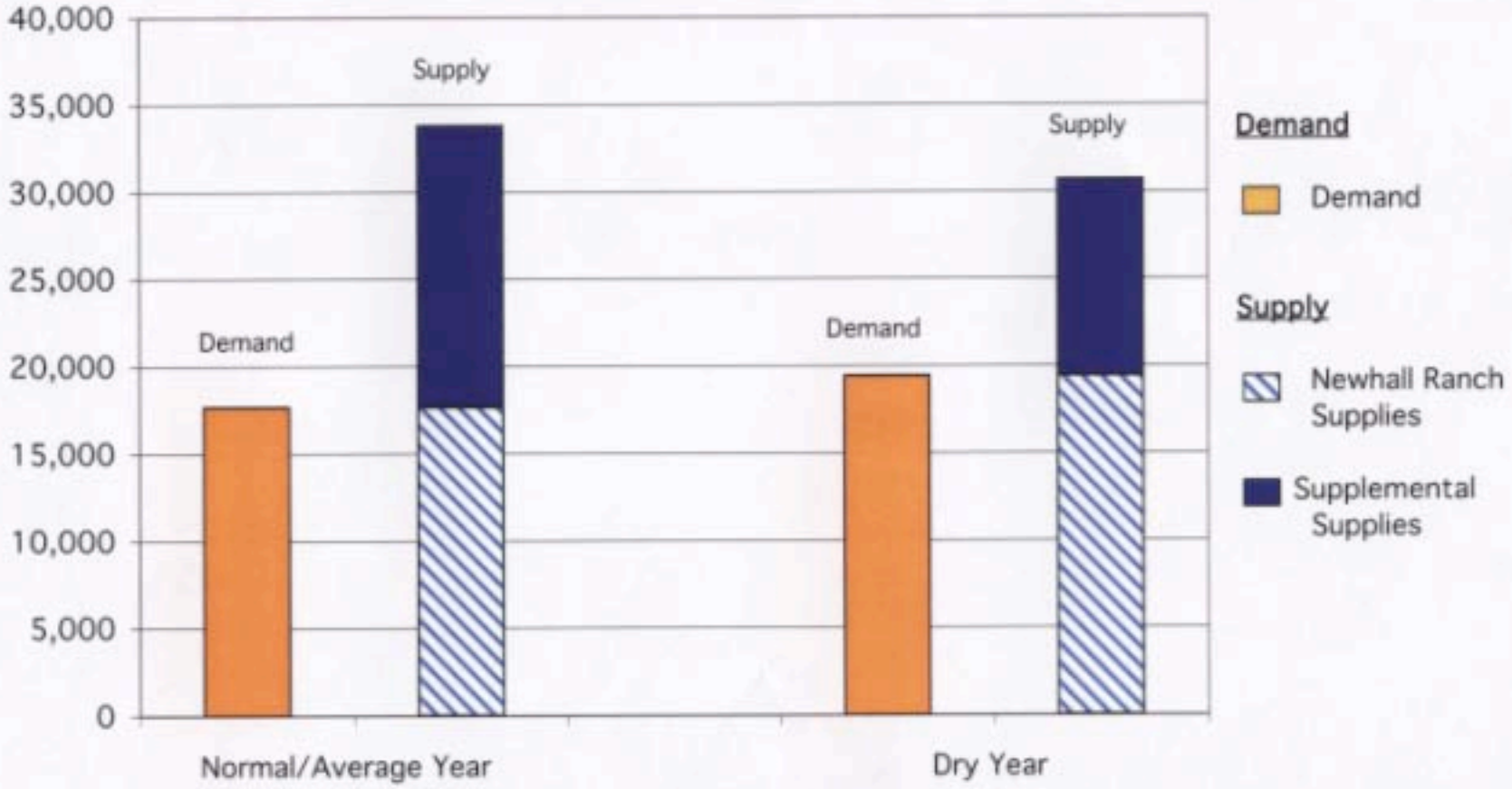
(e) The project applicant has entered into an agreement to secure water storage capacity of up to 55,000 acre-feet in the Semitropic Water Storage District Groundwater Banking Project. The stored water would be extracted in dry years in amounts of up to 4,950 AFY from the project. This supply will be used as a water source for the Specific Plan in dry years only. The storage capacity will be filled in the initial years (beginning in year 2005) from available water before Newhall Ranch demand requires this supply. Afterward, further demand for this water in wet/average years, on an as needed basis, could be met by banking excess Newhall/SWP Water, Castaic Creek Flood Flows, CLWA SWP entitlement and other supplies as available.

(f) The Saugus Groundwater Banking/ASR Program involves injecting or "banking" 4,500 AFY of treated Newhall/SWP water or other available water at times when those sources are readily available in normal/average years. During drought periods, up to 4,100 AFY would be withdrawn from the groundwater bank to partially meet Specific Plan water demand.

Chart ES-1

Newhall Ranch Water Demand vs. Supply

(acre-feet per year)



NOTE: SUPPLY IS GREATER THAN DEMAND

(b) Supplemental Water Supplies

As summarized above, there are sufficient water supplies to meet the Newhall Ranch Specific Plan demand. However, it remains important for the Santa Clarita Valley to hedge against potential regulatory and operational risks that may adversely affect the reliability of water supplies over the years. Although the purveyors have planned and developed water supplies to maintain reliability into the future even with a repeat of statewide droughts, the Santa Clarita Valley water agencies are faced with impacts due to the potential future promulgation of increasingly stringent water quality standards, litigation over water supplies and allocations, environmental constraints and changes in SWP operational criteria. These regulatory and operational uncertainties are many times unanticipated developments and not easily quantifiable. However, these types of uncertainties have occurred throughout the history of California's development of water resources. It is expected that they will continue in the future. A major challenge in water planning is to determine the appropriate measures of insurance to safeguard against these uncertainties to enhance supply reliability. One way of providing supply insurance against such risks is to secure additional or supplemental water supplies. The summary provided below identifies some of the important supplemental water supplies that could be available to serve the Newhall Ranch Specific Plan:

Newhall/SWP Water. The project applicant has entered into an agreement to reserve and ultimately purchase 7,648 AFY of additional State Water Project (SWP) water entitlement, which would be delivered through SWP facilities to CLWA and be available to serve the Specific Plan. The same SWP reliability parameters discussed above for CLWA SWP water would apply to this source of water.

Castaic Creek Flood Flows. Subject to approval by DWR, Castaic Creek flood flows could be used as a variable supply source in normal/average years, when available, for the Semitropic Groundwater Banking project (through a water transfer), or for the Saugus Groundwater Banking/ASR program (from CLWA).

Semitropic Groundwater Banking Project. The project applicant has entered into an agreement to reserve and purchase water storage capacity of up to 55,000 acre-feet in the Semitropic Water Storage District Groundwater Banking Project. Sources of water that could be stored in this banking project include, but are not limited to, Nickel Water, Newhall/SWP supplies, and Other CLWA Supplies. The stored water would be extracted in dry years in amounts of up to 4,950 AFY from the project. Up to 865 AFY of this amount would be used as a primary water source during dry years. The remainder (4,085 AFY) would be available as a supplemental source.

Saugus Groundwater Banking/ASR Program. The Groundwater Banking/Aquifer Storage and Recovery (ASR) program, which involves installation of six wells in the Saugus aquifer, would be used to inject or "bank" 4,500 AFY of treated SWP water or other available water when those sources are readily available in normal/average years. During drought periods, when SWP water supplies or other available sources are curtailed, the ASR wells would then be used to recover up to 4,100 AFY to partially meet Specific Plan water demand. In lay terms, the program would operate much like a local bank. Water would be deposited (injected) into the groundwater basin and later withdrawn (recovered), when needed, in dry years.

CLWA SWP and Other Supplies. A relatively small portion of CLWA's existing SWP Table A water entitlement could be used, if needed, to supplement a portion of the Specific Plan's potable water need.

As a SWP contractor, CLWA may also obtain additional SWP supplies from or through DWR in connection with other programs. The other SWP supplies include the Turnback Water Pool program, the Interruptible water program, Surplus water provisions and Carryover water. These SWP supplies are available in average/normal years as water supply sources for the Saugus Groundwater Banking/ASR program and the Semitropic Groundwater Banking project. However, the CLWA supplies are only considered a supplemental source for Newhall Ranch because the applicant has taken steps to secure its own primary potable water supplies.

The surplus of water created by existing water sources and the actions of the applicant will ensure an adequate supply of water for the Specific Plan without creating significant impacts on existing water supplies or downstream water users. For additional information on this topic, please see **Subsection 2.5.5, Newhall Ranch Water Demand and Supplies**, below. Several of the identified Specific Plan sources presently exist in the Santa Clarita Valley (e.g., Newhall's agricultural water and CLWA's SWP water) and several of the sources, consistent with CEQA, are reasonably expected to occur as the Specific Plan builds out (e.g., Newhall Ranch Water Reclamation Plant reclaimed water, CLWA reclaimed water, Saugus Groundwater Banking/ASR program water, Newhall/SWP water, Nickel Water).

Question: Is the Saugus Groundwater Banking/ASR Program Feasible?

Answer: Yes

The results of injection and recovery tests conducted by the applicant demonstrate that implementing a groundwater banking/ASR program in the Saugus Formation is feasible. The determination that the Saugus Groundwater Banking program is feasible is based on the actual injection and pumping tests conducted at wells in the Saugus Formation from July 2000 through October 2000, as well as groundwater modeling. (*See, Newhall Ranch ASR Impact Evaluation*, CH_2MHill; and *Assessment of the Hydrogeologic Feasibility of Injection and Recovery of Water in the Saugus Formation, Santa Clarita Valley, California, Slade.*) The testing and the modeling show that there is no discernible effect on Alluvial water levels or the Santa Clara River, from either Saugus Formation well injection or pumping. For additional information on this topic, please see **Subsection 2.5.5.3(d)(5)** entitled "**Saugus Groundwater Banking/ASR Program.**"

Question: ***Is the Newhall Ranch Specific Plan Consistent with the General Plan Development Monitoring System Policies as They Relate to Water Supplies?***

Answer: *Yes*

The Newhall Ranch Specific Plan is consistent with the County's General Plan DMS policies as they relate to water supplies. This analysis has been completed to determine if sufficient water supplies will be available for the Specific Plan under the County's General Plan Development Monitoring System (DMS) requirements. The projected total water demand for the Specific Plan is 17,680 acre-feet per year in average years and 19,449 acre-feet per year dry years. The analysis addresses water supply requirements resulting from buildout of all pending, recorded, and approved projects listed in the County's DMS, plus the Newhall Ranch Specific Plan. Under the DMS analysis, there will be sufficient water supplies for the entire demand of the Newhall Ranch Specific Plan and all pending, approved and recorded projects in DMS. Because two independent primary water sources have been secured to meet the potable water needs of the Specific Plan, no additional potable water would be needed from State Water Project (SWP) and the Castaic Lake Water Agency (CLWA) supplies. In fact, a water surplus of approximately 16,566 to 44,103 AFY would occur in average years and a surplus of approximately 16,552 to 88,089 AFY would occur in dry years.

The analysis also shows that the Newhall Ranch Specific Plan site is located immediately adjacent to existing development and the retail water service area of the Valencia Water Company. The site is also within the wholesale service area of CLWA. The Newhall Ranch Specific Plan site is located approximately one eighth of one mile from the Magic Mountain Theme Park, Castaic Junction, and the Valencia Commerce Center, and approximately three quarters of a mile from the Valencia Industrial Park. All of these existing development areas are served by County or other public services, and provide commercial services and job opportunities. As indicated above, more than enough water supplies are available to the Specific Plan to meet its projected demand. For additional information on this topic, please see **Subsection 2.5.5.4(a)(1)** entitled **"DMS General Plan Consistency."**

2.5.1.5 Summary of Applicable Legal Standards

The Specific Plan is analyzed in this Water Resources Section with respect to its water demand, water supply and the potential environmental impacts associated with supplying water to the site. The section also identifies mitigation measures to ensure that there is adequate water availability and delivery for build-out of the Specific Plan. In conducting the analysis presented in this section, a good-faith effort was

made to provide meaningful information regarding water demand, water supplies and the significant environmental effects that are reasonably foreseeable given those water supplies. It should be emphasized, however, that CEQA does not require that project sponsors actually secure sources of water for a long-term project before an EIR will be viewed as "adequate." Instead, under CEQA, it is sufficient to identify water sources, to show that the water sources are adequate and available for build-out of the project, and to consider the impacts of supplying such water to the project site.[3]

In addition, as discussed in the Newhall Ranch Final EIR, it should be emphasized that the County of Los Angeles has already determined that a "program" or "first-tier" EIR is appropriate for the Specific Plan because the Newhall Ranch planning process is at the general plan and zoning stages only, to be followed by subsequent project-specific subdivision maps and further environmental review, and because the build-out for Newhall Ranch is projected to occur over approximately 25 to 30 years.[4]

Consistent with the CEQA standards for a program/first-tier EIR, the County contemplates that further environmental documentation will be required as the Specific Plan moves from the general plan/zoning stages to project-specific subdivision maps. The environmental documentation for project-specific subdivision maps will involve the preparation of supplemental or subsequent Environmental Impact Reports in accordance with the requirements of CEQA and the CEQA Guidelines. By imposing a supplemental and/or subsequent EIR requirement on future project-specific subdivision map applications, the County will ensure that, as part of the Specific Plan subdivision map process, water availability will be verified for each subdivision map under review by the County through its Development Monitoring System ("DMS"), which is a required component of the County's General Plan. As each Specific Plan subdivision map is processed, the County will require confirmation from the water purveyor that it can serve each subdivision with available water supplies. The County will also continue to monitor implementation of all water-related mitigation measures adopted as part of the Newhall Ranch Final Program EIR.

2.5.1.6 Reference Documents

The following documents were used as reference materials in the preparation of the Water Resources Section:

(a) *2000 Urban Water Management Plan ("UWMP")*, dated December 2000, prepared for CLWA and three of the four retail water purveyors in the Santa Clarita Valley: Santa Clarita Water

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3 *See, Stanislaus Natural Heritage Project v. County of Stanislaus* (1996) 48 Cal.App. 4th 182, 205-206.

4 For further information regarding program EIR standards and "tiering" guidelines, please refer to CEQA (Public Resources Code §§21068.5, 21093) and the CEQA Guidelines (Guidelines §§15146, 15168, 15385).

Company, Newhall County Water District and Valencia Water Company, including, a technical memorandum prepared by Richard C. Slade & Associates, LLC, dated November 16, 2000 (Appendix C to UWMP), and a letter from Joseph C. Scalmanini, Luhdorff and Scalmanini Consulting Engineers, dated December 15, 2000, regarding review of the groundwater components of the UWMP (Appendix D to the UWMP);

(b) *1999 and 2000 Santa Clarita Valley Water Reports* prepared by the Upper Santa Clara Valley Water Committee, dated February 2000, and March 2001, respectively;

(c) *2001 Santa Clarita Valley Water Report* prepared by the Santa Clarita Valley Water Purveyors, dated March 2002;

(d) *Assessment of the Hydrogeologic Feasibility of Injection and Recovery of Water in the Saugus Formation, Santa Clarita Valley, California*, February 2001, by Richard C. Slade & Associates, LLC, including, the Technical Appendix, *Hydrogeologic Conditions in the Saugus Formation, Santa Clarita Valley, California*, February 2001, by Richard C. Slade & Associates, LLC;

(e) *Newhall Ranch ASR Impact Evaluation*, prepared by CH_2MHill, February 2001;

(f) Newhall Ranch Updated Water Resources Impact Evaluation, prepared by CH_2MHill, October 2002;

(g) *Draft Integrated Water Resources Plan*, Water Demand and Supply Evaluation, dated February, 1998, prepared by Bookman Edmonston/Montgomery Watson Consulting Engineers for CLWA;

(h) *Water Management Program*, prepared by Valencia Water Company, dated December 1995, and Valencia's *Water Management Program*, dated November 29, 2001;

(i) *Hydrogeologic Investigation of the Perennial Yield and Artificial Recharge Potential of the Alluvial Sediments in the Santa Clarita Valley of Los Angeles County, California*, dated December 1986, a 2-volume report prepared by Richard C. Slade & Associates;

(j) *Hydrogeologic Assessment of the Saugus Formation in the Santa Clarita Valley of Los Angeles County, California*, dated February 1988, a 2-volume report prepared by Richard C. Slade & Associates;

(k) *Final EIR for the Semitropic Groundwater Banking Project*, including Draft EIR, Findings and Mitigation Monitoring Plan, 1994 (State Clearinghouse No. 93072024);

(l) *Management of the California State Water Project, Bulletin 132-95*, Department of Water Resources, November 1995;

(m) *Management of the California State Water Project, Bulletin 132-96*, Department of Water Resources, August 1997;

(n) *Management of the California State Water Project, Bulletin 132-98*, Department of Water Resources, November 1999;

(o) *Critical Water Shortage Contingency Plan*, Governor's Advisory Drought Planning Panel, December 29, 2000;

(p) *The California Water Plan Update, Bulletin 160-98*, Department of Water Resources, November 1998;

(q) *Final Programmatic Environmental Impact Statement/Environmental Impact Report* ("Final EIS/EIR") for the CALFED Bay-Delta Program, dated July 2000, including the August 28, 2000 Record of Decision;

(r) *Final Project Report, Update of Basin Plan for Piru, Sespe, and Santa Paula Hydrologic Areas*, State of California, The Resources Agency, Department of Water Resources, Southern District, June 1989;

(s) Nickel Water agreements and related environmental documentation;

(t) 2001 Update Report on the Hydrogeologic Conditions in the Alluvial and Saugus Formation Aquifer Systems, Volumes I and II, prepared by Richard C. Slade & Associates LLC, July 2002;

(u) *Water Transfer Issues in California*, Final Report to the California State Water Resources Control Board by the Water Transfer Workgroup, June 2002;

(v) *Programmatic Record of Decision*, prepared by the CALFED Bay-Delta Program, August 28, 2000;

(w) *Draft Recommendations to Streamline State and Federal Water Approval Process in California*, prepared by the CALFED Water Transfer Streamlining Subcommittee;

(x) *A Guide to Water Transfers*, Draft, prepared by SWRCB staff, July 1999;

(y) *The Role of Water Transfers in Meeting California's Water Needs*, prepared by the Legislative Analyst Office, September 8, 1999;

(z) *Groundwater Management in California*, prepared by DWR, 1999;

(aa) *Water Transfers in California: Translating Concept Into Reality*, DWR, 1993; and

(bb) *The Transfer of Water Rights in California: Background and Issues*, Governor's Commission to Review California Water Rights Law, Staff Paper No. 5, 1977.

(cc) *Draft Final Eastern Santa Clara Subbasin Groundwater Study Site Characterization Phase (Remedial Investigation) Quality Assurance Project Plan*, Prepared for United States Army Corps of Engineers, Los Angeles District, Southern Pacific Division, October 2002, Prepared by CH2M Hill.

(dd) *Draft Final Eastern Santa Clara Subbasin Groundwater Study Site Characterization Phase (Remedial Investigation) Work Plan*, Prepared for United States Army Corps of Engineers, Los Angeles District, Southern Pacific Division, October 2002, Prepared by CH2M Hill.

(ee) *Draft Final Eastern Santa Clara Subbasin Groundwater Study Site Characterization Phase (Remedial Investigation) Community Involvement Work Plan*, Prepared for United States Army Corps of Engineers, Los Angeles District, Southern Pacific Division, October 2002, Prepared by CH2M Hill.

(ff) *Draft Final Eastern Santa Clara Subbasin Groundwater Study Site Characterization Phase (Remedial Investigation) Field Sampling Plan*, Prepared for United States Army Corps of Engineers, Los Angeles District, Southern Pacific Division, October 2002, Prepared by CH2M Hill.

(gg) *Draft Report, Recycled Water Master Plan*, Castaic Lake Water Agency, May 2002.

All of the reference documents are incorporated by this reference. The documents identified in paragraphs (a), (b), and (d) are presented in Appendix 2.5 of the original Draft Additional Analysis (April 2001). Due to the size, the documents identified in paragraphs (g) through (s), above, are available for public review by contacting: Impact Sciences, Inc., Tom Worthington, 30343 Canwood Street, Suite 210, Agoura Hills, California 91301, (818) 879-1100; or the County of Los Angeles Department of Regional

Planning, Lee Stark, 320 W. Temple Street, Room 1346, Los Angeles, California 90012, (213) 974-6467. The documents identified in paragraphs (c), (f), (s) and (t) are provided in this Revised Draft Additional Analysis in **Appendix 2.5**.

2.5.2 OVERVIEW OF WATER RESOURCES SECTION

The purpose of this section is to provide an overview of the Water Resources section. The Water Resources section contains the information provided below in response to the trial court's decision and writ.

Section 2.5.3: Existing Setting. This section describes the existing water purveyors in the Santa Clarita Valley and their service areas, and summarizes important characteristics applicable to the water service area in the Santa Clarita Valley, which includes the Specific Plan site. The data found in the section provides an important backdrop to understanding water supplies and demand in the Santa Clarita Valley generally, as well as understanding Newhall Ranch's water demand and supplies.

Section 2.5.4: Water Supplies and Demand in the Santa Clarita Valley. The section provides important regional information regarding water sources for the Santa Clarita Valley, including the Specific Plan site. The section summarizes two aspects of the water supply and demand picture, which provide context to the Specific Plan. First, the section summarizes the existing and planned future water supplies for the Castaic Lake Water Agency ("CLWA") service area, including the Specific Plan site. Second, the section summarizes the historic, existing and projected water demands within the CLWA service area.

Section 2.5.5: Newhall Ranch Water Demand and Supplies. This section is the "heart" of the Water Resources section. This section specifically responds to the trial court's inquiries and directions with respect to available water sources for the Specific Plan. This section demonstrates that adequate water sources will be available for build-out of the Specific Plan by showing that the project applicant has secured other water sources and developed the factual basis for feasibly utilizing the Saugus Groundwater Banking/ASR Program. This section also includes tables depicting the Specific Plan and cumulative water demand and supply data. The tables, for convenience, are duplicated and provided at the end of this section. Because two independent primary water sources have been secured to meet the potable water needs of the Specific Plan, no potable water would be needed from State Water Project (SWP) and CLWA supplies.

Section 2.5.6: Water Impacts Analysis. As directed by the trial court's decision and writ, this section assesses the environmental impacts associated with providing the identified water supplies to the Specific Plan, including the impacts of the Saugus Groundwater Banking/ASR Program. The environmental impacts are also assessed against specified "significance thresholds" identified in this section. The issues addressed in this section include, among other topics: (a) impacts from groundwater pumping associated

with the Saugus Groundwater Banking/ASR Program; (b) impacts from valley-wide groundwater pumping; (c) impacts of reclaimed water use; (d) perchlorate impacts; (e) water quality impacts of increased SWP water importation; and (f) impacts to sensitive biological resources in and along the Santa Clara River and downstream, which would result in the provision of water to the Specific Plan site.

Based on the analysis in this section, the issues presented above did not give rise to the identification of any unmitigated significant environmental impacts resulting from the provision of water to the Specific Plan site.

Sections 2.5.7 and 2.5.8: Mitigation Measures and Significant Impact Findings. Consistent with the trial court's decision and writ, this section evaluates feasible mitigation measures and makes findings that the provision of water to the Specific Plan does not result in any unavoidable significant impacts.

Water Tables. The tables depicting the Specific Plan and cumulative water demand and supply are briefly summarized below and are provided for convenience. For further information regarding the water tables and the Specific Plan demand and supplies, please refer to **Section 2.5.5** of this report.

> **Table 2.5-1, Specific Plan Demand and Supply Comparison,** shows the Specific Plan's water demand and water supply sources;
>
> **Table 2.5-2, Existing Plus Specific Plan Demand and Supply for the Santa Clarita Valley,** shows both the existing water demand and the Specific Plan demand and compares that demand against the water supplies in the Santa Clarita Valley, including the Newhall Ranch supplies;
>
> **Table 2.5-3, Scenario 1: DMS Buildout Scenario Demand and Supply for the Santa Clarita Valley,** shows a cumulative development scenario involving existing development demand, plus demand associated with build-out of the development monitored by the County's Development Monitoring System ("DMS") for the Santa Clarita Valley, plus the Specific Plan demand, and compares that "DMS Buildout Scenario" to the water supplies for Santa Clarita Valley, including the Newhall Ranch supplies;
>
> **Table 2.5-4, Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Demand,** shows a more extensive cumulative build-out scenario involving existing development, plus DMS demand, plus Specific Plan demand, and "additional urban demand" associated with both partial build-out of the Valley in the year 2020 and full build-out of the Valley in the year 2045;
>
> **Table 2.5-5, Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Supplies,** depicts the water supplies for both the Santa Clarita Valley and the Specific Plan under the Valley's "Cumulative Buildout Scenario;" and
>
> **Table 2.5-6, Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Demand and Supply,** depicts both the water demand and supply for the Santa Clarita Valley under the more extensive "Cumulative Buildout Scenario."

As shown in **Table 2.5-1** and **Chart 2.5-1**, the Specific Plan's total average year water demand is 17,680 acre-feet per year (AFY), of which 8,645 AFY represents the annual potable demand and 9,035 AFY represents the annual non-potable demand. In a dry year, demand increases by approximately 10 percent due to a reduction in local rainfall. In an average year, an additional 4,500 acre-feet is required to inject into the Saugus aquifer as part of the proposed Saugus Groundwater Banking/ASR Program.

Table 2.5-2, shows both existing water demand and Specific Plan demand and compares that demand against the water supplies in the Santa Clarita Valley, including the Newhall Ranch supplies. As shown on **Table 2.5-2**, water supplies range from 121,085 AFY to 138,585 AFY and 112,530 to 131,530 AFY in average and dry years, respectively. These water supplies more than meet the existing plus Specific Plan demand in Santa Clarita Valley. It should be noted that the scenario depicted in this table would not actually occur. This scenario assumes that the only new development that would occur in the Santa Clarita Valley would be on the Newhall Ranch Specific Plan site. However, new development would actually occur simultaneously on the Newhall Ranch site and at other locations in the Santa Clarita Valley. Such scenarios are depicted on **Tables 2.5-3** through **2.5-6** below.

As shown in **Table 2.5-3** and **Chart 2.5-2**, under the "DMS Buildout Scenario," water supplies range from 116,594 to 144,131 AFY and 121,635 to 193,172 AFY in average and dry years, respectively. These water supplies more than meet the existing, plus Specific Plan, plus DMS demand of 100,028 acre-feet per year in an average year and the demand of 105,082 AFY in a dry year. In fact, a surplus of water ranging from 16,566 to 44,103 AFY and 16,552 to 88,089 AFY would occur in an average and dry year, respectively. This surplus would be available in normal/average years for water banking programs (e.g., Saugus Groundwater Banking/ASR Program, Semitropic Groundwater Banking Project, etc.).

Tables 2.5-4, **2.5-5** and **2.5-6**, and **Charts 2.5-3** and **2.5-4** show the water picture for both partial build-out of the Santa Clarita Valley and the Specific Plan by the year 2020, and full build-out of the Valley by the year 2045. Under partial buildout, total water demands, including Newhall Ranch, would be 105,200 AFY in an average year and 112,750 AFY in a dry year. The water supplies at partial build-out range from 129,722 to 159,722 AFY and 133,167 to 197,667 AFY in average and dry years, respectively, which would more than meet the expected demand. In fact, a surplus of water ranging from 24,522 to 54,522 AFY and 20,417 to 84,917 AFY would occur in average and dry years, respectively.

Under full build-out to the year 2045, total water demands, including Newhall Ranch, would be 153,500 AFY in an average year and 163,900 AFY in a dry year. The water supplies at full build-out range from 165,010 to 174,210 AFY in average years, and would be approximately 194,245 AFY in dry years. Again, these water supplies would exceed expected demands over the long-term. In fact, a net water supply surplus ranging from 11,510 to 20,710 AFY in average years, and approximately 30,345 AFY would be available in dry years. This surplus of water would be available in normal/average years for banking programs (e.g., Semitropic Groundwater Banking Project, other groundwater banking projects, etc.). In

short, the water supply picture for the Santa Clarita Valley, including Newhall Ranch, shows that water supplies exceed existing, near-term and long-term projected demand.

Table 2.5-1
Specific Plan Demand and Supply Comparison
(acre-feet per year)

		Average	Dry
Newhall Ranch Water Demand			
- Potable Demand		8,645	8,645
- Non-Potable Demand		9,035	9,035
	Subtotal	17,680	17,680
- Dry Year 10% Increase in Demand [f]		0	1,768
	Total	**17,680**	**19,449** [f]
Additional Groundwater Bank Programs			
- Saugus Groundwater Banking/ASR Program		**4,500**	**0**
Newhall Ranch Water Supply			
- Non-Potable Supplies			
- Newhall Ranch Reclaimed Water		5,344	5,344
- CLWA Reclaimed Water		3,691	4,595
	Subtotal	9,035	9,939
- Potable Supplies			
- Newhall Ranch Agricultural Water		7,038	7,038
- Nickel Water [a]		1,607	1,607
- Semitropic Groundwater Banking Project		0	865
	Subtotal	8,645	9,510
	Total	**17,680**	**19,449**
Additional Groundwater Programs/Supplemental Supplies			
- CLWA SWP and Other Supplies [b]		4,500	0
- Newhall/SWP Water [b]		4,566	3,044
- Castaic Creek Flood Flows [e]		7,043	0
- Semitropic Groundwater Banking Project		0	4,085 [c]
- Saugus Groundwater Banking/ASR Program		0	4,100[c]
	Total	**16,109**	**11,229**
	Total Supplies	**33,789**	**30,678**
	Total Surplus [d]	**11,609**	**11,229**

a *The applicant has secured water under contract with Nickel Family LLC in Kern County. 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 water would be delivered through the Kern County Water Agency and the SWP system.*

b *Consistent with the DWRSIM model, the figures show SWP entitlement (including the Newhall/SWP water entitlement of 7,648 AF per year) reduced in average years to approximately 59.7 percent of entitlement and in dry years to approximately 39.8 percent of entitlement. In any given year, the actual amount of SWP water deliveries could be above or below these model projections.*
As these programs are needed in dry years, they could be used up to the amounts indicated (as needed).

c *The surplus shown above is the net water available for injection into banking programs (e.g., Semitropic Groundwater Banking Project, other*

d *groundwater banking projects, etc.).*

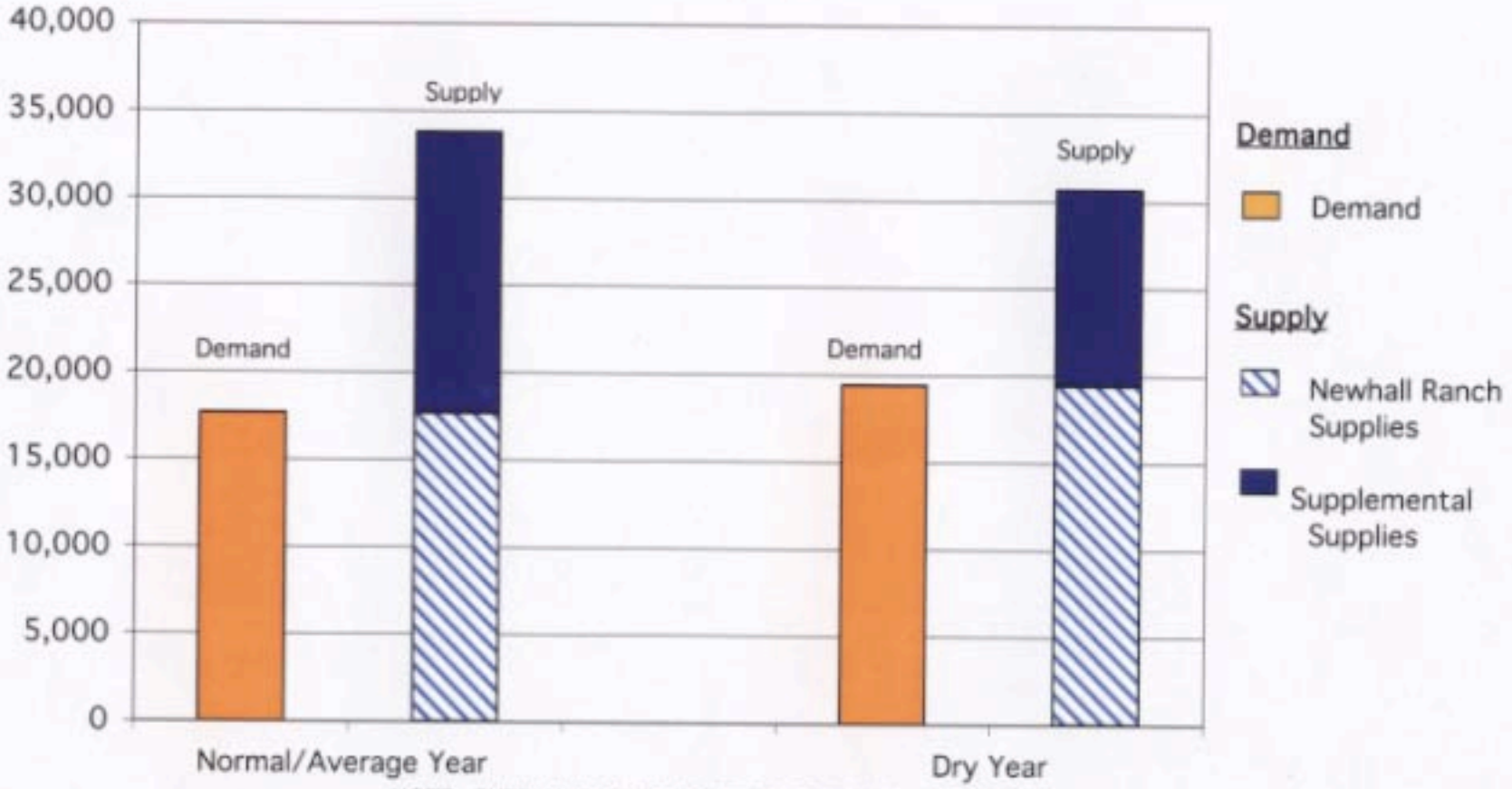
e *See discussion in **Section 2.5.5**. Castaic Creek flood flows are a variable source of water that could be used, when available, in wet and average years, for the Semitropic Groundwater Banking Project (through water transfers) or the Saugus Groundwater Banking/ASR Program (from CLWA through Valencia Water Company).*

f *In single dry years, demand could increase by 10 percent. In multi-dry years, actual demand is expected to decrease by approximately 20 percent as it did in 1991 due to implementation of voluntary conservation measures.*

Chart 2.5-1

Newhall Ranch Water Demand vs. Supply

(acre-feet per year)



NOTE: SUPPLY IS GREATER THAN DEMAND

Table 2.5-2
Existing plus Specific Plan Demand and Supply for the Santa Clarita Valley
(acre-feet per year)

	Average Years		Dry Years	
Santa Clarita Valley Demand				
- Existing Demand [a]	76,769		76,769	
- Dry Year 10% Increase in Demand	0		7,677	
- Specific Plan Demand [b]	17,680		19,449	
Potable Demand		8,645		8,645
Non-Potable Demand		9,035		9,035
Dry Year 10% Increase in Demand		0		1,768
Saugus Groundwater Banking/ASR Program	4,500		0	
Total	**98,949**		**103,895** [i]	
Santa Clarita Valley Supply [c]				
- Local Supply				
a. Groundwater				
- Alluvial Aquifer	30,000 to 40,000		30,000 to	35,000
- Less Newhall Ranch Agricultural Water	(7,038)		(7,038)	
- Saugus Aquifer	7,500 to 15,000		11,000 to	15,000
- Saugus Aquifer (new wells)	0		10,000 to	20,000
b. Reclaimed Water	0		0	
- Imported Supplies				
a. SWP Supplies [d]	56,800		37,900	
Less Portion for Newhall Ranch	(1,607)		(2,472)	
Total	**85,655 to 103,155**		**79,390 to**	**98,390**
Newhall Ranch Specific Plan Supplies				
- Non-Potable Supplies				
Newhall Ranch Reclaimed Water	5,344		5,344	
CLWA Reclaimed Water	3,691		4,595	
Subtotal	9,035		9,939	
- Potable Supplies				
Newhall Ranch Agricultural Water	7,038		7,038	
Nickel Water	1,607		1,607	
Semitropic Groundwater Banking Project	0		865	
Subtotal	8,645		9,510	
Total	**17,680**		**19,449**	
Additional Groundwater Programs/Supplemental Supplies				
CLWA SWP and Other Supplies [d]	4,500		0	
Newhall/SWP Water [g]	4,566		3,044	
Castaic Creek Flood Flows [h]	7,043		0	
Semitropic Groundwater Banking Project	0		4,085	
Saugus Groundwater Banking/ASR Program	0		4,100	
Total	**16,109**		**11,229**	
Total Supplies	**121,085 to 138,585**		**112,530 To**	**131,530**
Total Surplus [f]	**22,136 to 39,636**		**8,635 To**	**27,635**

[a] *Source: The County of Los Angeles Department of Regional Planning, Inventory Information for Water Service, July 2002.*

[b] *This demand would occur starting with the Specific Plan's buildout year of approximately 2030. Newhall Ranch buildout is assumed to occur from 2005 to 2030 at a rate of 864 dwelling units per year, with water demands of 707 AFY average.*

[c] *Source: UWMP, December 2000, Tables 2-6 and 4-1.*

[d] *Consistent with the DWRSIM model, the figures show SWP entitlement reduced in average years to approximately 59.7 percent of entitlement and in dry years to approximately 39.8 percent of entitlement. In any given year, the actual amount of SWP water deliveries could be above or below these model projections. Deliveries of water associated with CLWA's SWP entitlement of 95,200 acre-feet per year are affected by a number of factors, including hydrologic conditions, the status of SWP facilities' construction, environmental requirements and evolving policies for the Bay-Delta. Several programs are in place that have the potential to improve the reliability of SWP water (see Urban Water Management Plan, December 2000, page 2-10).*

[e] *Consists of surplus SWP water available in normal/average years from CLWA water transfers, Interruptible SWP water, SWP Turnback Pool program, SWP Surplus water provisions and SWP Carryover Water program.*

[f] *The surplus shown above is the net water available for injection into banking programs (e.g., Semitropic Groundwater Banking Project, other groundwater banking projects, etc.), not including Castaic Creek Flood Flows.*

[g] *This source consists of CLWA SWP Table A water plus Newhall/SWP Water (purchase consists of 7,648 AF of surplus Table A entitlement water) reduced in average years to approximately 59.7 percent of entitlement and in dry years to approximately 39.8 percent of entitlement.*

[h] *See discussion in* **Section 2.5.5**. *Castaic Creek flood flows are a variable source of water that could be used, when available, in average and wet years, for the Semitropic Groundwater Banking Project (through water transfers) or the Saugus Groundwater Banking/ASR Program (from CLWA through Valencia Water Company).*

[i] *Consistent with the UWMP, December 2000, demand is increased by approximately 10 percent in dry years.*

Note: The scenario depicted in this table would not actually occur. This scenario assumes that the only new development that would occur in the Santa Clarita Valley would be on the Newhall Ranch Specific Plan site. However, new development would occur actually simultaneously on the Newhall Ranch site and at other locations in the Santa Clarita Valley. Such scenarios are depicted on **Tables 2.5-3** *through* **2.5-6** *below.*

Table 2.5-3
Scenario 1: DMS Buildout Scenario Demand and Supply for the Santa Clarita Valley
(acre-feet per year)

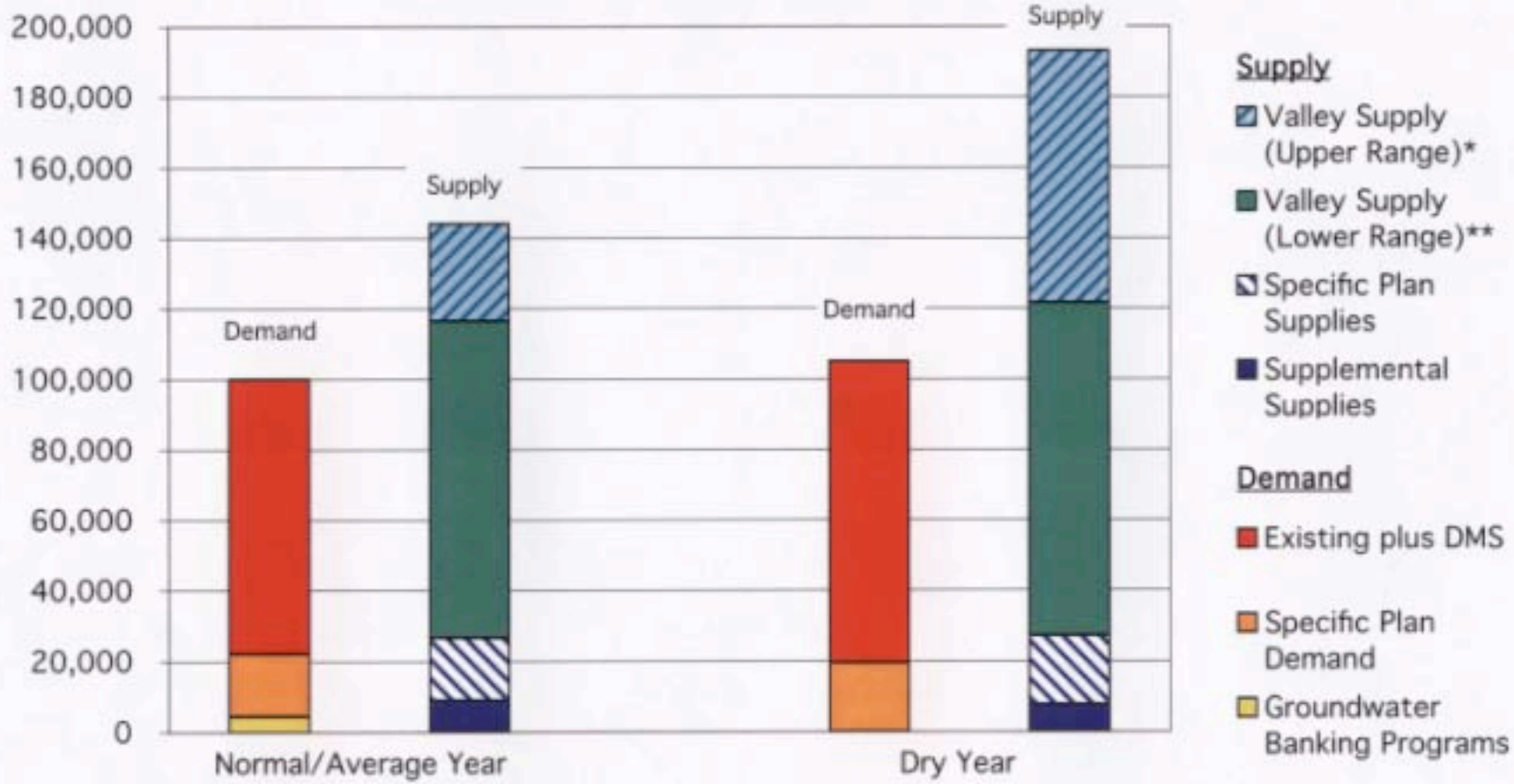
	Average Years	Dry Years
Santa Clarita Valley Demand		
- DMS Demand [a]	87,674	87,674
- Dry Year 10% Increase in Demand	0	8,767
- Specific Plan Demand [b]	17,680	19,449
Potable Demand	8,645	8,645
Non-Potable Demand	9,035	9,035
Dry Year 10% Increase in Demand	0	1,768
- Additional Groundwater Banking Program	4,500	0
- Less Conservation [j]	(9,825)	(10,808)
Total	**100,028**	**105,082**
Santa Clarita Valley Supply [c]		
- Local Supply		
a. Groundwater		
Alluvial Aquifer	30,000 to 40,000	30,000 to 35,000
- Less Newhall Ranch Agricultural Water	(7,038)	(7,038)
Saugus Aquifer	7,500 to 15,000	11,000 To 15,000
Saugus Aquifer (new)	0 0	10,000 To 20,000
b. Reclaimed Water	1,700 10,737	1,700 10,737
Less CLWA Reclaimed Water Supply for Newhall Ranch	(1,033)	(1,033)
- Imported Supplies		
a. SWP Supplies [d]	56,800	37,900
b. Water Banking/Conjunctive Use		10,000 to 52,500
c. Desalination	2,000 To 3,000	2,000 To 3,000
Total	**89,963 to 117,500**	**94,518 To 166,055**
Specific Plan Supplies		
- Non-Potable Supplies		
WRP Reclaimed Water	5,344	5,344
CLWA Reclaimed Water Supply for Newhall Ranch	1,033	1,033
Subtotal	6,377	6,377
- Potable Supplies		
Newhall Ranch Agricultural Water	7,038	7,038
Nickel Water [k]	1,607	1,607
Newhall/SW P Water (Average Years); Semitropic Groundwater Banking Project [e] (Dry Years)	2,658	4,427
Subtotal	11,303	13,072
Total	**17,680**	**19,449**
Additional Groundwater Programs/Supplemental Supplies		
Newhall/SWP Water [h]	1,908	3,044
Castaic Creek Flood Flows [i]	7,043	0
Semitropic Groundwater Banking Project [e]	0	523
Saugus Groundwater Banking/ASR Program [e]	0	4,100
Total	**8,951**	**7,667**
Total Supplies	**116,594 to 144,131**	**121,635 to 193,172**
Total Surplus [g]	**16,566 to 44,103**	**16,552 to 88,089**

a Complete buildout of DMS land uses is estimated to occur in 2012.
b This demand would occur starting with the Specific Plan's buildout year of approximately 2030. Newhall Ranch buildout is assumed to occur from 2005 to 2030 at a rate of 864 dwelling units per year, with water demands of 707 AFY average.
c Source: UWMP, December 2000, Tables 2-6 and 4-1.
d Consistent with the DWRSIM model, the figures show SWP entitlement reduced in average years to approximately 59.7 percent of entitlement and in dry years to approximately 39.8 percent of entitlement. In any given year, the actual amount of SWP water deliveries could be above or below these model projections. Deliveries of water associated with the Agency's SWP entitlement of 95,200 acre-feet per year are affected by a number of factors, including hydrologic conditions, the status of SWP facilities' construction, environmental requirements and evolving policies for the Bay-Delta. Programs are in place that have the potential to improve the reliability of imported water (see UWMP, December 2000, page 2-10).
e As these programs are needed in dry years, they could be used up to the amounts indicated (as needed).
f Consists of surplus SWP water available in normal/average years from CLWA water transfers, Interruptible SWP water, SWP Turnback Pool program, SWP Surplus water provisions and SWP Carryover Water program.
g The surplus shown above is the net water available for injection into banking programs (e.g., Semitropic Groundwater Banking Project, other groundwater banking projects, etc.), not including Castaic Creek Flood Flows.
h Newhall/SWP water consists of 7,648 AF of surplus Table A entitlement water reduced in average years to approximately 59.7 percent of entitlement and in dry years to approximately 39.8 percent of entitlement.
i See discussion in Section 2.5.5. Castaic Creek flood flows are a variable source of water that, when available in average and wet years, could be used for the Semitropic Groundwater Banking Project and/or Saugus Groundwater Banking/ASR Program.
j The UWMP (pages 3-8 and 3-9) indicates that water demand can be expected to decrease through implementation of water conservation practices in the CLWA service area.
k Nickel Water consists of 1,607 AF of water purchased by Newhall Land and delivered via the Kern County Water Agency. This water is 100 percent reliable and is not affected by same factors that reduce the reliability of SWP water.

Chart 2.5-2

Current DMS Buildout Scenario Water Demand vs. Supply

(acre-feet per year)



* Upper Range = Water supply expected when the upper range of the supply ranges are considered (see Table 2.5-36).

** Lower Range = Water supply expected when the lower range of the supply ranges are considered (see Table 2.5-36).

NOTE: DMS includes City of Santa Clarita and and unincorporated County area.

Table 2.5-4
Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Demand
(acre-feet per year)

	Partial Buildout (year 2020)		Full Buildout (year 2045)	
	Average	Dry	Average	Dry
Buildout Demand				
- DMS Demand	87,674	87,674	87,674	87,674
Dry Year 10% Increase in Demand	0	8,767	0	8,767
- Newhall Ranch Specific Plan [a]	10,608	11,669	17,680	19,449
Potable Demand	5,187	5,187	8,645	8,645
Non-Potable Demand	5,421	5,421	9,035	9,035
Dry Year 10% Increase in Demand	0	1,061	0	1,768
- Additional Urban Demand	14,818	14,818	58,126	58,126
Dry Year 10% Increase in Demand	0	1,482	0	5,812
- Additional Groundwater Banking Program (ASR)	2,700	0	4,500	0
- Less Conservation	(10,600)	(11,660)	(14,480)	(15,928)
Total	105,200 [c]	112,750 [b]	153,500 [d]	163,900 [b]

a *Newhall Ranch buildout is assumed to occur from 2005 to 2030 at a rate of 864 dwelling units per year, with average water demands of 707 AFY.*

b *Consistent with the UWMP, December 2000, demand is increased by approximately 10 percent in dry years (102,500 x 1.10 = 112,750 and 149,000 x 1.10 = 163,900).*

c *Source: UWMP, December 2000, Table 3-5.*

d *Source: UWMP, December 2000, Table 3-5, using a straight-line projection from 2020 to 2045.*

e *The Urban Water Management Plan (pages 3-8 and 3-9) indicates that water demand can be expected to decrease through implementation of water conservation practices in the CLWA service area.*

Note: It is expected that the existing plus DMS demand would reach its peak in approximately 2012. The Newhall Ranch Specific Plan demand would begin in approximately 2005 and would reach its peak in approximately 2030. The additional urban demand would begin in approximately 2013, after DMS demand peaks, and would reach its peak in approximately 2045.

Table 2.5-5
Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Supplies
(acre-feet per year)

	Partial Buildout (year 2020)		Full Buildout (year 2045)	
	Average Years	Dry Years	Average Years	Dry Years
Santa Clarita Valley Water Supplies [a]				
Local Supply				
a. Groundwater				
Alluvial Aquifer	30,000 to 40,000	30,000 to 35,000	35,000	32,500
Less Newhall Ranch Agricultural Water	(7, 038)	(7,038)	(7,038)	(7,038)
Saugus Aquifer	7,500 to 15,000	11,000 to 15,000	11,250	13,000
Saugus Aquifer (new wells)	0	10,000 to 20,000	0	15,000
b. Reclaimed Water	17,000	17,000	17,000	17,000
Less CLWA Reclaimed Water Supply for Newhall Ranch	(2,215)	(2,215)	(3,691)	(4,595)
Imported Supplies				
a. CLWA SWP Table A Water [b]	56,800 to 66,300	37,900	73,700 to 82,900	40,200
b. Water Banking/Conjunctive Use	0	10,000 to 52,500	0	52,500
c. Desalination	2,000 to 5,000	2,000 to 5,000	5,000	5,000
Total	**104,047 To 134,047**	**108,647 to 173,147**	**131,221 to 140,421**	**163,567**
Newhall Ranch Specific Plan Supplies				
- Non-Potable Supplies				
Newhall Ranch Reclaimed Water	3,206	3,206	5,344	5,344
CLWA Reclaimed Water	2,215	2,215	3,691	4,595
Subtotal	5,421	5,421	9,035	9,939
- Potable Supplies				
Newhall Ranch Agricultural Water	7,038	7,038	7,038	7,038
Nickel Water	1,607	1,607	1,607	1,607
Semitropic Groundwater Banking Project [c]	0	0	0	865
Subtotal	8,645	8,645	8,645	9,510
Total	**14,066**	**14,066**	**17,680**	**19,449**
Additional Groundwater Programs/Supplemental Supplies				
CLWA SWP and Other Supplies	0	0	4,500	0
Newhall/SWP Water [f]	4,566	3,044	4,566	3,044
Castaic Creek Flood Flows [e]	7,043	0	7,043	0
Semitropic Groundwater Banking Project [c]	0	4,950	0	4,085
Saugus Groundwater Banking/ASR Program [c]	0	4,100	0	4,100
Total	**11,609**	**10,454**	**16,109**	**11,229**
Total Supply	**129,722 to 159,722**	**133,167 to 197,667**	**165,010 to 174,210**	**194,245**

a Source: UWMP, December 2000, Tables 2-2, 2-6 and 4-1.

b Assumes that by year 2045 the Interim Delta Improvements have been implemented.

c As these programs are needed in dry years, they could be used up to the amounts indicated (as needed).

d Consists of surplus SWP water available in normal/average years from CLWA water transfers, Interruptible SWP water, SWP Turnback Pool program, SWP Surplus water provisions and SWP Carryover Water program.

e See discussion in Section 2.5.5. Castaic Creek flood flows are a variable source of water that could be used, when available, in average and wet years, for the Semitropic

f Groundwater Banking Project (through water transfers) or the Saugus Groundwater Banking/ASR Program (from CLWA through Valencia Water Company). SWP entitlement reduced in average years to approximately 59.7 percent of entitlement and in dry years to approximately 39.8 percent of entitlement. In any given year, the actual amount of SWP water deliveries could be above or below these model projections.

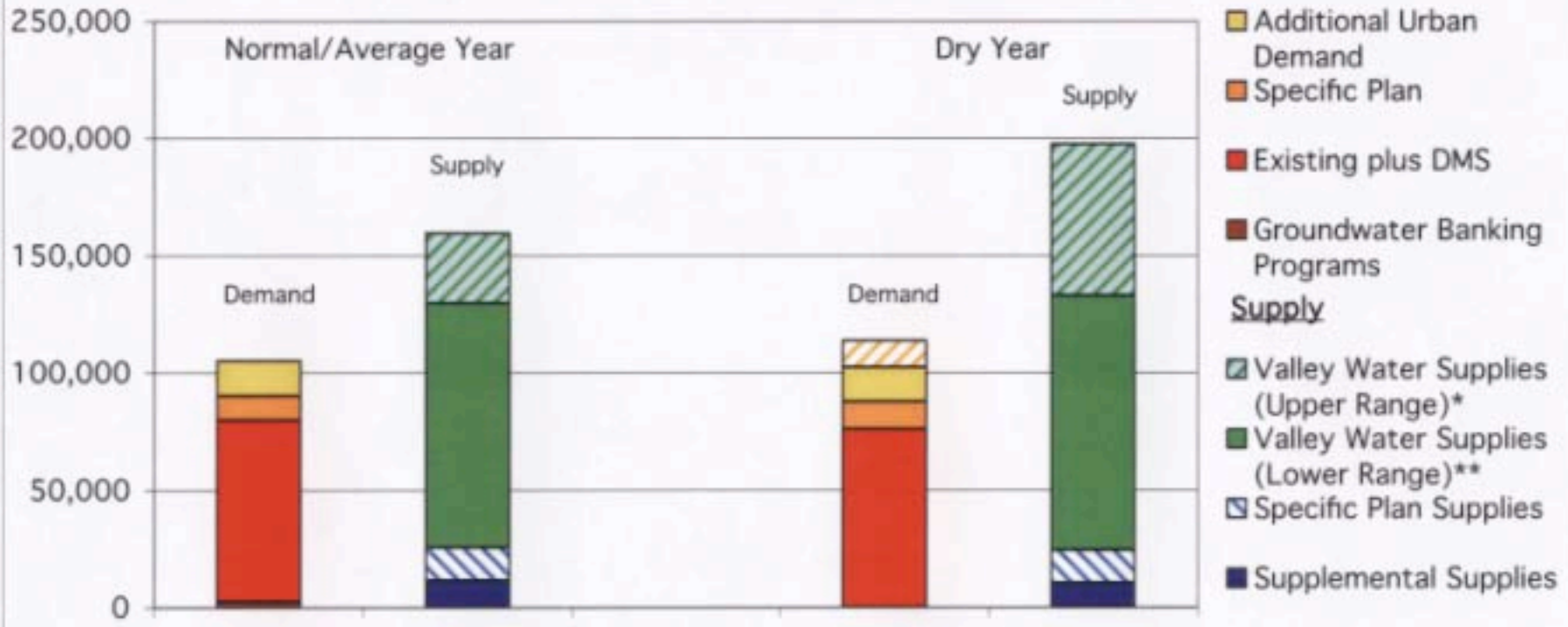
g In dry years under full buildout, amount of SWP water delivered to Newhall Ranch is assumed to be approximately 66 percent of SWP water delivered in average years. Actual future conditions possibly may result in Newhall Ranch using Nickel Water, CLWA SWP Water and Newhall/SWP water.

Table 2.5-6
Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Demand and Supply
(acre-feet per year)

	Partial Buildout (year 2020)		Full Buildout (year 2045)	
	Average Years	Dry Years	Average Years	Dry Years
Total Buildout Demand [b]	105,200 [a]	112,750	153,500 [c]	163,900
Santa Clarita Valley Water Supplies [d]	104,047 to 134,047	108,647 to 173,147	131,221 to 140,421	163,567
Newhall Ranch Specific Plan Supplies	14,066	14,066	17,680	19,449
Additional Groundwater Programs/Supplemental Supplies	11,609	10,454	16,109	11,229
Total Supply	**129,722 to 159,722**	**133,167 to 197,667**	**165,010 to 174,210**	**194,245**
Total Surplus [e]	**24,522 to 54,522**	**20,417 to 84,917**	**11,510 to 20,710**	**30,345**

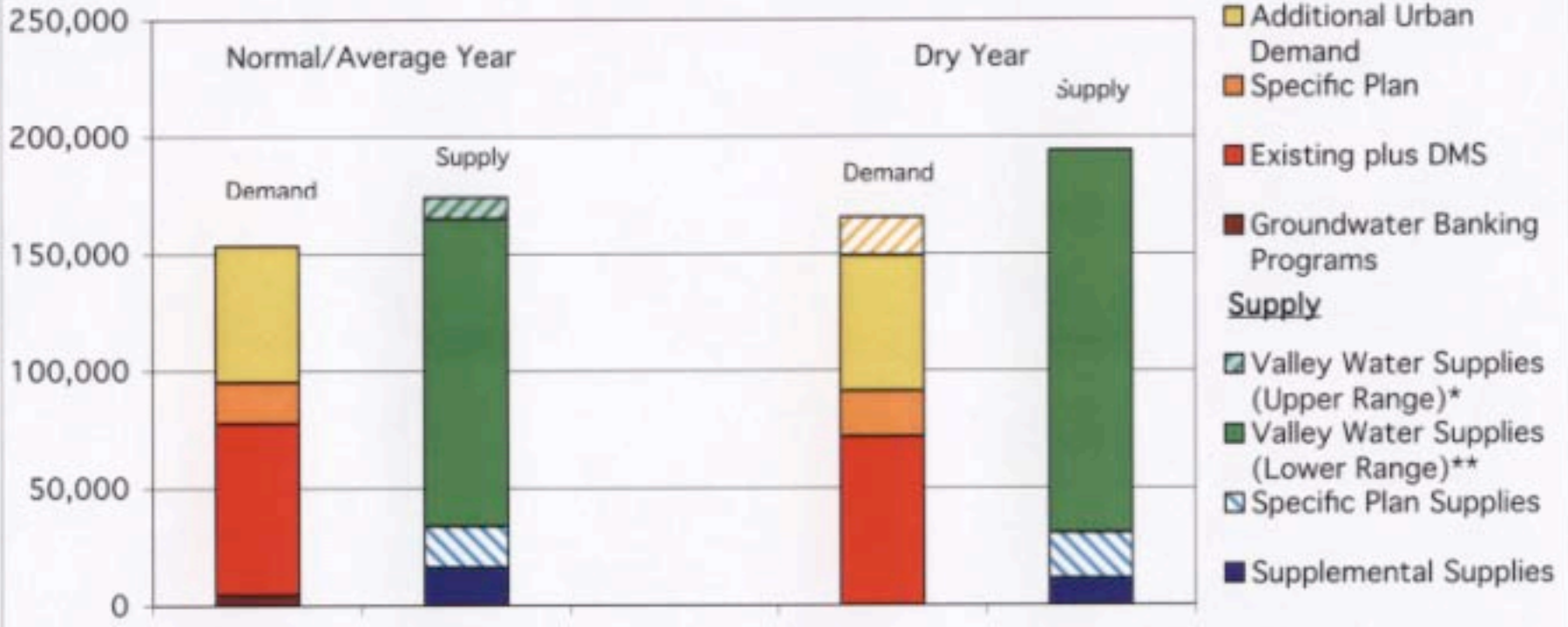
a Source: 2000 UWMP, December 2000, Table 3-5, plus Saugus Groundwater Banking/ASR Program injection demand.
b Consistent with the UWMP, December 2000, demand is increased by approximately 10 percent in dry years.
c Source: UWMP, December 2000, Table 3-5, using a straight-line projection from 2020 to 2045, plus Saugus Groundwater Banking/ASR Program injection demand.
d Source: UWMP, December 2000, Tables 2-2, 2-6 and 4-1.
e The surplus shown above is the net water available for injection into banking programs (e.g., Semitropic Groundwater Banking Project, other groundwater banking projects, etc.).

Chart 2.5-3
Santa Clarita Valley Cumulative Buildout Scenario
Water Demand vs. Supply
Full Buildout (2020)
(acre-feet per year)



* Upper Range = Water supply expected when the upper range of the supply ranges are considered (see Table 2.5-37).
** Lower Range = Water supply expected when the lower range of the supply ranges are considered (see Table 2.5-37).
NOTE: Includes City of Santa Clarita and and unincorporated County area.

Chart 2.5-4
Santa Clarita Valley Cumulative Buildout Scenario
Water Demand vs. Supply
Full Buildout (2045)
(acre-feet per year)



* Upper Range = Water supply expected when the upper range of the supply ranges are considered (see Table 2.5-37).
** Lower Range = Water supply expected when the lower range of the supply ranges are considered (see Table 2.5-37).
NOTE: Includes City of Santa Clarita and and unincorporated County area.

2.5.3 EXISTING SETTING

2.5.3.1 Preface

This section describes the existing water purveyors in the Santa Clarita Valley and their service areas, and summarizes important characteristics applicable to the water service area in the Santa Clarita Valley, which includes the Specific Plan site. The data found in the section provides an important backdrop to understanding water supplies and demand in the Santa Clarita Valley generally, as well as understanding Newhall Ranch's water demand and supplies.

2.5.3.2 Water Purveyors in Santa Clarita Valley and Their Service Areas

(a) Castaic Lake Water Agency

For most residents within the Santa Clarita Valley, domestic water service is provided by four retail water purveyors: Los Angeles County Waterworks District 36, Newhall County Water District, Santa Clarita Water Division of CLWA and Valencia Water Company. However, these four retail water purveyors actually obtain all or a portion of their water supplies from the Castaic Lake Water Agency.

CLWA was formed in 1962 as a wholesale water agency for the purpose of contracting with the California Department of Water Resources ("DWR") to provide a supplemental supply of imported water from the State Water Project ("SWP") to serve retail water purveyors in the Santa Clarita Valley.[5] CLWA is one of 29 agencies with long-term water supply contracts with DWR for SWP water.[6] CLWA obtains SWP water from the upper reservoir at Castaic Lake, a storage reservoir of the SWP. CLWA serves the City of Santa Clarita, the unincorporated Santa Clarita Valley in Los Angeles County and portions of Ventura County. CLWA's service area covers approximately 195 square miles. **Figure 2.5-1** depicts CLWA's service area.

CLWA's physical water delivery system is comprised of facilities needed to treat and convey SWP supplies to the retail water purveyors. The funding for CLWA's expansion, modification and addition to its current facilities and programs is through its Capital Improvement Plan ("CIP"). As part of CLWA's annual budget process, the CIP is reviewed and updated as necessary. An integral part of CLWA's CIP is

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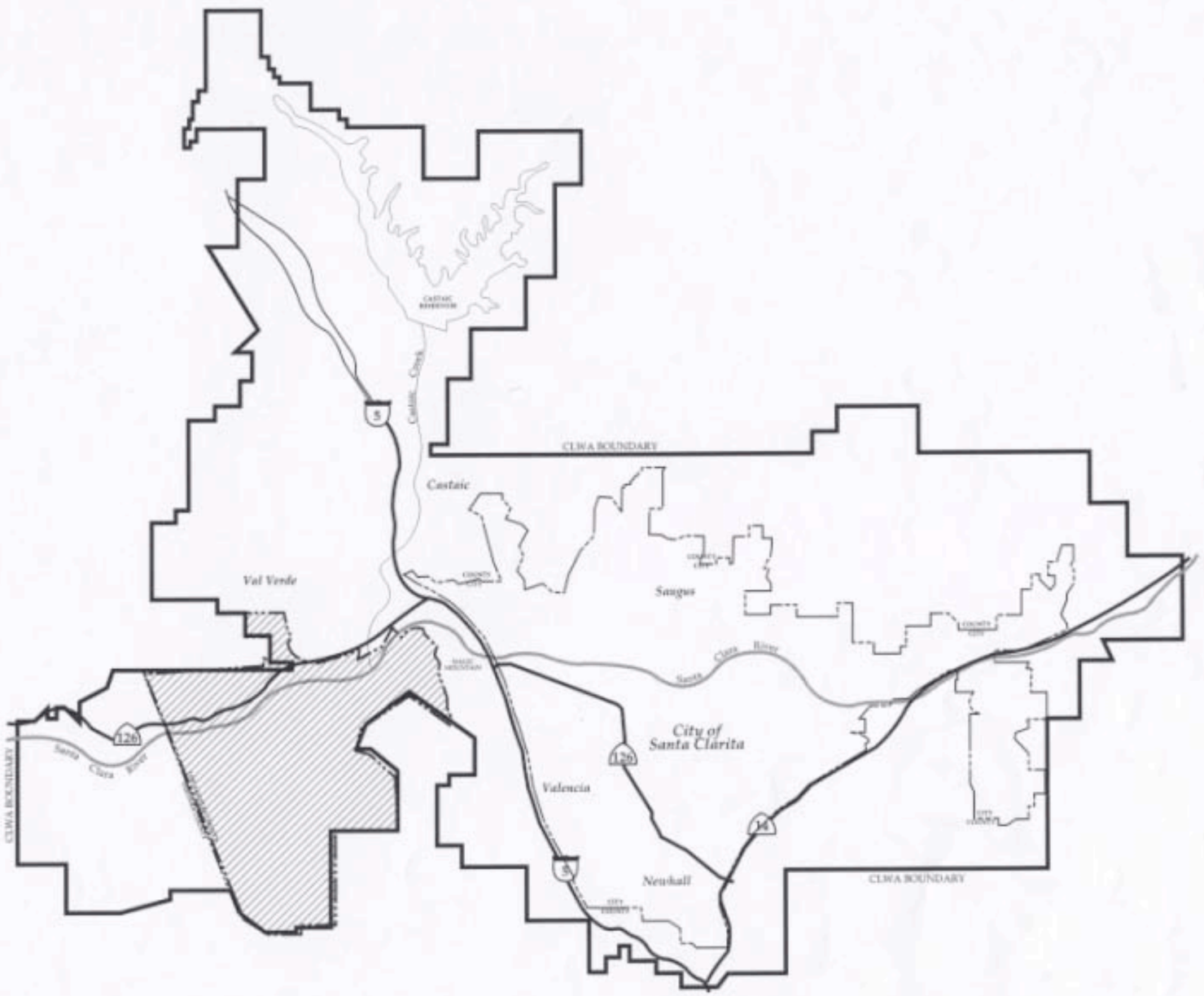
5 *See*, California Water Code Appendix Sections 103-1, 103-15.

6 CLWA also provides retail water service through a contract with the Santa Clarita Water Division of CLWA since September 1999.

its capital facilities fee, or development impact fee, which is a source of revenue to fund additional facilities and programs required to accommodate growth within the service area. As part of CLWA's CIP, funding has been established to provide for the purchase of additional imported supplies, implementation of reclaimed water (also referred to as "recycled water") programs and enhancement of groundwater, as well as groundwater banking/conjunctive-use programs both inside and outside the CLWA service area. According to CLWA, implemented over time, these measures will provide assurance that there will be sufficient supplies to meet water demands. Seawater and local brackish water desalination coupled with other contractual water exchanges could also provide the additional water supplies to meet anticipated community needs. It should be noted that desalination water would not likely be delivered to the Santa Clarita Valley. Desalination water would be exchanged for non-desalination water owned by another water agency located nearer to the desalination source. According to CLWA, the priority for implementation of some of these supply approaches will be driven in part by the relative cost.

CLWA's existing water delivery system is presented in **Figure 2.5-2**. As shown in that figure, CLWA owns and operates two water filtration plants, the Earl Schmidt Filtration Plant, with a current water capacity of 28 million gallons per day ("mgd"), and the Rio Vista Water Treatment Plant, with a water capacity of 30 mgd. The two plants have a current capacity to treat a total of 58 mgd. These plants were designed to accommodate expansion as required. CLWA has currently authorized a private consultant to proceed with the pre-design of the Earl Schmidt plant expansion to increase the plant's treatment capacity to a total of approximately 50 mgd. The expanded plant is scheduled to be on-line by mid-2003. CLWA also owns and operates an intake pump station at the Earl Schmidt plant, a pump station at the Rio Vista plant, major water transmission lines, and storage tanks and reservoirs.

CLWA treats the SWP water at its two water filtration plants and then distributes the water to the local retail water purveyors in the Santa Clarita Valley. From CLWA's two existing plants, the treated SWP water is delivered by gravity to the retail water purveyors through CLWA's distribution network of pipelines and turnouts. Local water retailers, such as Valencia Water Company, combine SWP water with groundwater from their own municipal-supply wells in the Alluvial aquifer and Saugus formation to meet water demand within their respective service areas. The actual mix between SWP and groundwater distributed by the water retailers to their respective service areas is variable over time and is based upon availability and operational and cost considerations.



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L E G E N D

SPECIFIC PLAN SITE

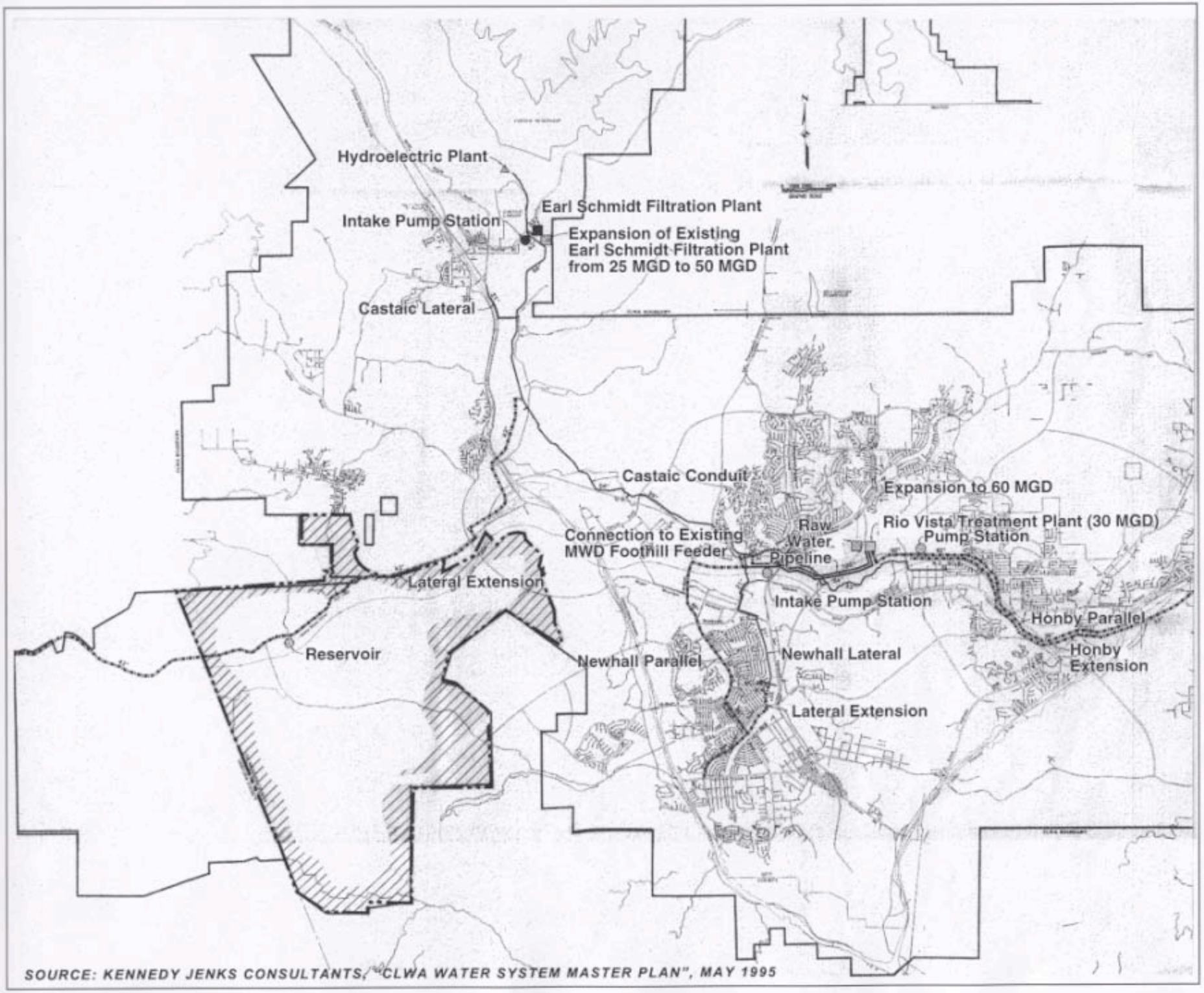
CASTAIC LAKE WATER AGENCY BOUNDARY

IMPACT SCIENCES INC

NORTH

FIGURE 2.5-1

CASTAIC LAKE WATER AGENCY SERVICE AREA



SOURCE: KENNEDY JENKS CONSULTANTS, "CLWA WATER SYSTEM MASTER PLAN", MAY 1995

NEWHALL RANCH
Newhall Ranch Company

L E G E N D

- FILTRATION PLANT
- TREATMENT PLANT
- EXPANSION
- INTAKE PUMP STATION
- PUMP STATION
- HYDROELECTRIC PLANT
- RESERVOIR

IMPACT SCIENCES INC

NORTH

FIGURE 2.5-2
CASTAIC LAKE WATER AGENCY WATER DELIVERY SYSTEM

CLWA's current total entitlement to SWP water is 95,200 AFY.[7] Of that amount, CLWA obtained 41,000 AFY from KCWA, through its member district Wheeler Ridge-Maricopa Water Storage District ("Wheeler Ridge"), pursuant to a March 1999 water transfer agreement. CLWA analyzed the potential environmental impacts of the water transfer in a Final EIR entitled, "Supplemental Water Project Environmental Impact Report," dated February 1999 (SCH No. 98041127) ("the CLWA EIR"). A project opponent filed a petition for writ of mandate in April 1999, challenging the adequacy of the CLWA EIR under CEQA. The trial court rejected the petition, finding that the CLWA EIR complied with CEQA, and the petitioner appealed.

In a decision issued in January 2002, the appellate court reversed the trial court's judgment but not on any of the specific grounds urged by the petitioner. Rather, the appellate court found that, since the appeal had been filed, another EIR, which studied the environmental effects of the Monterey Agreement ("the Monterey Agreement EIR"), had been ordered decertified. Because it found that the CLWA EIR had "tiered" on the now-decertified Monterey Agreement EIR, the appellate court held that the CLWA EIR also must be decertified. Notably, the appellate court found that, were it not for the intervening decertification of the Monterey Agreement EIR, it "would have affirmed [the trial court's] judgment." *See, Friends of the Santa Clara River v. Castaic Lake Water Agency* (2002) 95 Cal.App.4th 1373, 1387.

Importantly, although the appellate court ordered the CLWA EIR decertified, it did *not* order CLWA to void its approval of the water transfer agreement itself. Instead, the appellate court remanded the matter to the trial court for further proceedings concerning the remedy, stating that the trial court was in a "better position" than the appellate court to make the factual determinations necessary to devise an appropriate remedy. *Id.* at 1388.

The trial court held a hearing on September 24, 2002, to hear argument on whether the water transfer agreement should be allowed to remain intact while CLWA completes a new EIR. As directed by the appellate court, the trial court ordered CLWA to vacate its certification of the CLWA EIR. However, the trial court did not order CLWA to vacate its approval of the water transfer agreement itself. Rather, the court ruled that CLWA may utilize and rely on the 41,000 AFY. During the hearing, the petitioner argued that CLWA should not be permitted to rely on the additional entitlement to serve either existing or projected new water users within its service area, nor should it be permitted to rely on the entitlement for planning purposes. The court rejected the petitioner's argument, expressing concern that such a ruling could usher in an unnecessary water shortage in the Santa Clarita Valley and referencing substantial

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7 An acre-foot is 43,560 cubic feet. An acre-foot of water has been generally defined as "an irrigation-based measurement equaling the quantity of water required to cover an acre of land to a depth of one-foot." *See, Brydon v. East Bay Mun. Utility Dist.* (1994) 24 Cal.App.4th 178, 182, fn. 1.

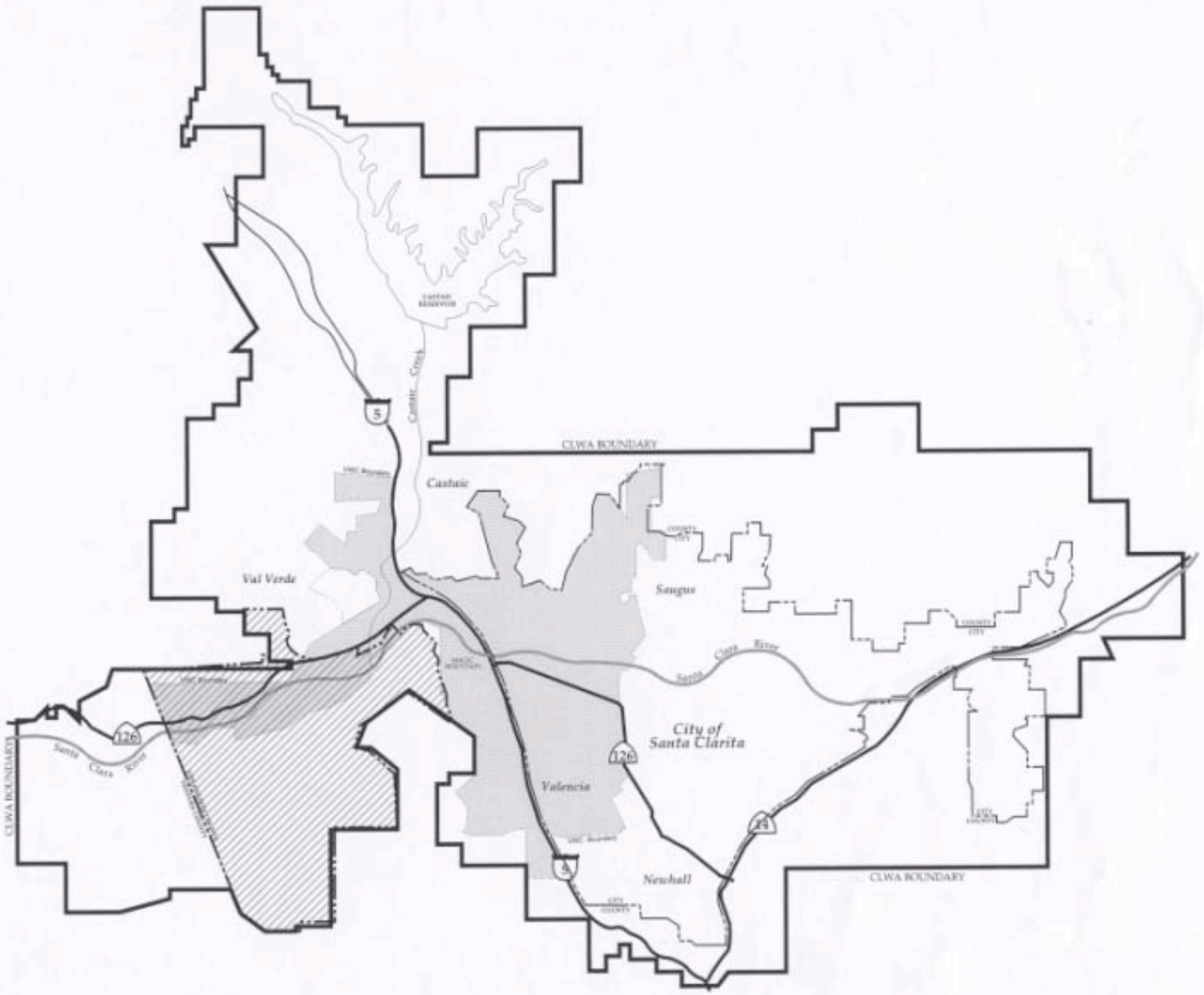
evidence, provided by CLWA, that such a shortage was a possibility. The trial court allowed that the petitioner may renew its application for a prohibition on CLWA's use of the 41,000 AFY if the petitioner could provide evidence that CLWA is actually using the additional entitlement for purposes the petitioner considers improper. A copy of the trial court's judgment and writ, along with a transcript of the September 24, 2002 hearing, is provided in **Appendix 2.5(n)** to this report.

Regardless of the litigation surrounding the CLWA EIR and the water transfer agreement, an adequate supply of water is available to meet the demands of the Newhall Ranch Specific Plan. In addition, CLWA is currently in the process of preparing a new EIR for the water transfer agreement, consistent with CEQA and the appellate court opinion. CLWA has hired an environmental consultant and the work on the new EIR is well underway. In addition, Specific Plan reliance on any of the 41,000 AFY would not occur, *if at all*, until late in the Specific Plan's 25- to 30-year buildout period, by which time the dispute over the CLWA EIR will have been resolved. More importantly, the CLWA SWP water is considered only one of several *supplemental* water supply sources available to the Specific Plan. Even if that source were removed entirely, the Specific Plan would still have more than sufficient water to serve both its potable and non-potable needs.

(b) Valencia Water Company

Valencia Water Company, an investor-owned company regulated by the California Public Utilities Commission ("CPUC"), is one of the four retail water agencies within the Santa Clarita Valley. Valencia's current service area includes a mix of residential and commercial land uses, mostly comprised of single-family homes, apartments, condominiums and a number of local shopping centers and neighborhood commercial developments. The City of Santa Clarita and Los Angeles County special irrigation districts are the largest overall water users for irrigation purposes. Magic Mountain Amusement Park is the largest individual commercial water user. The service area includes two golf courses, the Valencia Industrial Center and the Valencia Commerce Center. The service area also includes light industrial uses that can be classified as service oriented with a light manufacturing/assembly mix. All water services are metered, with the exception of fire services.

Figure 2.5-3 shows the service area of Valencia Water Company. The Newhall Ranch Specific Plan site and the VWC Service Area are located within the CLWA service area and the Newhall Ranch Specific Plan site is partially within the service area of the VWC. Valencia is expected to be the retail water purveyor for the Newhall Ranch Specific Plan.



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L E G E N D

SPECIFIC PLAN SITE

VALENCIA WATER COMPANY SERVICE AREA

CASTAIC LAKE WATER AGENCY BOUNDARY

IMPACT SCIENCES INC

NORTH

FIGURE 2.5-3

VALENCIA WATER COMPANY SERVICE AREA

SOURCE: Impact Sciences, Inc., 1997.

As build-out of the Specific Plan proceeds over time, each Newhall Ranch tentative subdivision map would require preliminary and final water plans for review and approval by the Valencia Water Company. The plans would indicate anticipated water demand, required water storage facilities, booster pump stations, and on-site and off-site piping needed for adequate domestic and fire water flow pressure to the Specific Plan site.

Once the final water plan for a subdivision is approved by the Valencia Water Company, Valencia would file an "advice letter" with the CPUC seeking to expand its service territory to add the Newhall Ranch subdivisions that are currently not within its service area. The CPUC would consider Valencia's requests to expand its service area to add the new Newhall Ranch subdivisions and assure itself that adequate water supplies are available to meet demand.[8]

(c) Retail Water Purveyor Service Areas

CLWA and the four retail water purveyors provide water 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 in the Hasley Canyon area and the unincorporated community of Val Verde. The District obtains its full water supply from CLWA turnouts. The District presently has no operating groundwater extraction facilities.

The Newhall County Water District service area lies within three distinct geographical areas of the Santa Clarita Valley: Newhall, Pinetree and Castaic. The District's service connections are located over a 34 square mile area. The District's water supplies are obtained from groundwater wells and SWP water from CLWA turnouts.

Santa Clarita Water Division of CLWA service area includes portions of the City of Santa Clarita and unincorporated portions of Los Angeles County in the communities of Saugus, Canyon Country and Newhall. The Company's water supplies are obtained from groundwater wells and SWP water from CLWA turnouts.

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8 *See*, Public Utilities Code, Sections 451 and 2708. In addition, the CPUC's role in water planning is set forth in *Sierra Club, Angeles Chapter v. Valencia Water Company*, D.99-04-061, dated April 22, 1999.

The Valencia Water Company service area, as stated above, serves a portion of the City of Santa Clarita and the unincorporated communities of Castaic, Newhall, Saugus, Stevenson Ranch and Valencia in Los Angeles County. Valencia's service area is approximately 25 square miles. Valencia's water supplies are obtained from groundwater wells and SWP water from CLWA turnouts. **Figure 2.5-4** illustrates the respective service areas of CLWA and the four retail water purveyors in the Santa Clarita Valley.

As of 1999, the four retail water purveyors service approximately 50,000 connections in the Santa Clarita Valley. The specific breakdown by purveyor is provided in **Table 2.5-7**.

Table 2.5-7
Santa Clarita Valley Retail Water Purveyors

Purveyor	Connections
Los Angeles County Waterworks District 36	827
Newhall County Water District	6,758
Santa Clarita Water Division of CLWA	21,100
Valencia Water Company	20,865
Total	**49,550**

Source: UWMP 2000.

(d) CLWA's Allocation of Imported Water Supplies

In January 1996, CLWA adopted a resolution changing the method of allocating imported water among the four retail water purveyors served by CLWA. CLWA's prior allocation system divided the total water supply among the four retail purveyors based on fixed percentages. CLWA's fixed percentage of water allocated to Valencia Water Company was 35.9 percent, or approximately 19,500 acre-feet based on CLWA's total entitlement at that time of 54,200 acre-feet.

Under the new approach, CLWA's fixed-percentage allocation to retail purveyors was replaced with a "first-come, first-served" allocation method.[9] CLWA distributes imported water supplies among "water service areas" established by CLWA on a basis that allows imported water to be delivered to these areas where it is needed. CLWA's current allocation system, defined by Section 103-29.5 of CLWA's governing act as interpreted by CLWA, is based on the collection of water connection fees and other contributions paid by new development within each "water service area." Under CLWA's new allocation method, water supplies available to CLWA are allocated among the CLWA-defined "water

9 Based on personal communications with CLWA (Robert C. Sagehorn) and Valencia Water Company (Robert J. DiPrimio).

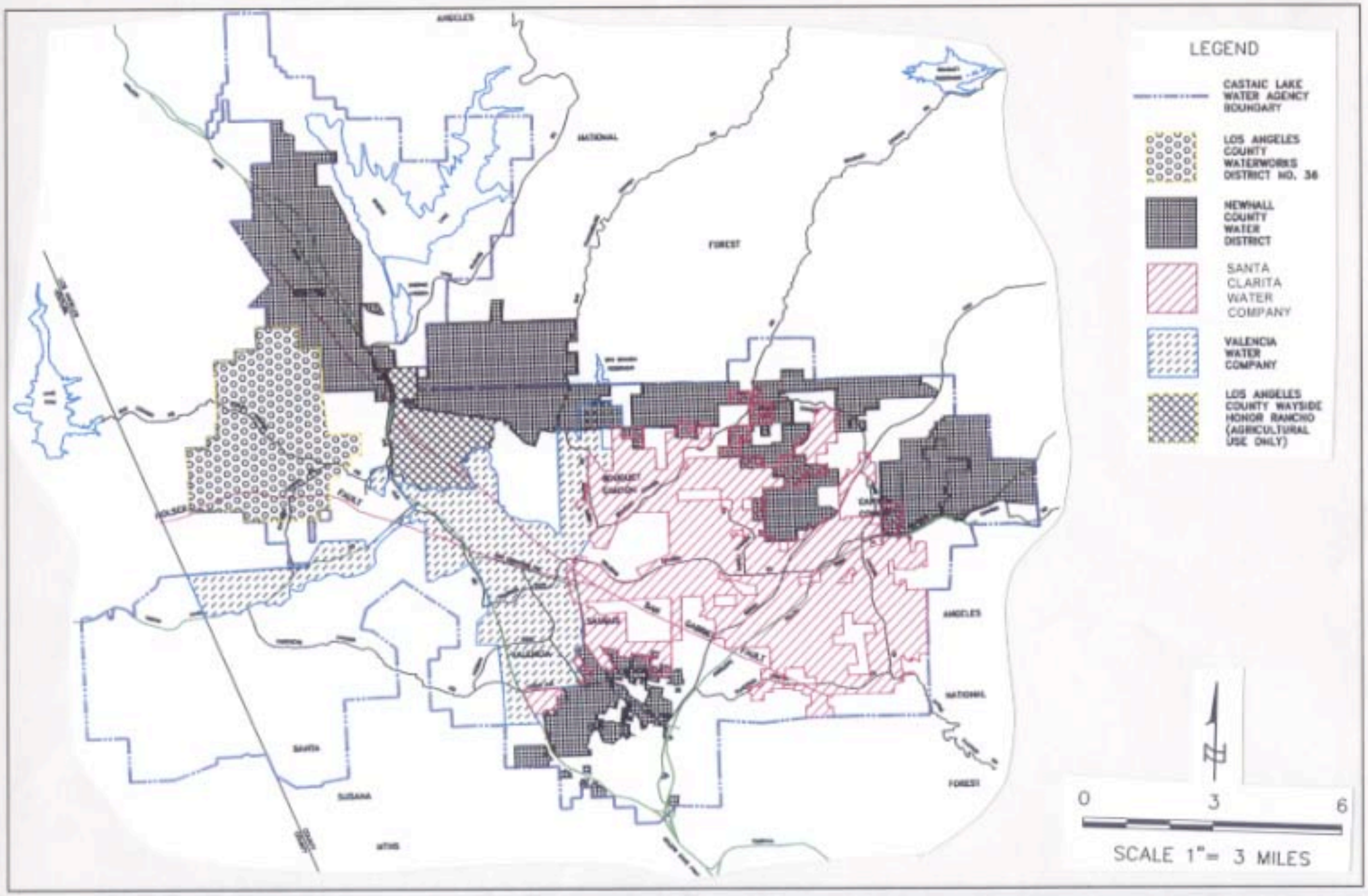

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FIGURE 2.5-4
WATER SERVICE AREA FOR ALL SANTA CLARITA VALLEY PURVEYORS

service areas" based on the payment of water connection fees and other contributions that fund CLWA's Capital Program. Historically, however, CLWA has not been required to allocate imported water supplies to the retail water purveyors, because the available supply of imported water has been sufficient to meet all purveyor requests. Even in the extreme drought year, 1991, no allocation was necessary, because the four retail purveyors entered into a water sharing agreement by which the purveyors shared all available water supplies and, with the help of significant conservation, were able to meet all water demand in the Santa Clarita Valley. Accordingly, absent the need for an allocation during times of limited supply under CLWA's new method, CLWA supplies are delivered to retail water purveyors on a first-come, first-served basis.

In light of CLWA's new allocation method, Valencia expects that its share of water supplies from CLWA will significantly increase for the following reasons: (a) Valencia's "water service area" includes significant amounts of existing and planned development; (b) water supplies are now allocated among CLWA-defined "water service areas," and Valencia's "water service area" significantly contributes to the funding of the CIP; and (c) water supplies are now delivered by CLWA to the purveyors on a first-come, first-served basis. Accordingly, SWP water supplies in the Santa Clarita Valley are evaluated on a valley-wide basis, rather than on individual percentage allocations to retail purveyors.

(e) The Upper Santa Clara Valley Water Committee

The wholesale and retail water purveyors in Santa Clarita Valley meet regularly as a technical group to coordinate the water resources of the Valley. The group has been commonly known as the Upper Santa Clara Valley Water Committee ("the Committee"). One of the highest priorities of this group is to provide an adequate water supply for the CLWA service area, safeguard existing water resources and develop both short-term and long-range plans for the efficient use of water in the Valley.

Over the years, the Committee has documented the availability of water resources in the region, assessed the condition of the local groundwater aquifers and their hydrogeologic character and reviewed aquifer storage capacity and the perennial yield and recharge rate of the aquifers. The Committee has also studied the potential for conjunctive use of both groundwater and imported water resources. In addition, the Committee continues to monitor water quality, including plans for the treatment of water to maintain good quality water for use in the Santa Clarita Valley.

Other cooperative efforts of the Committee have included development of drought contingency plans, evaluation of landfill impacts on the groundwater basin, coordination of emergency response procedures and implementation of valley-wide conservation programs. In 1985, the Committee prepared the area's

first Urban Water Management Plan. In 1998, the Committee participated with CLWA in the preparation of a draft Integrated Water Resources Plan ("IWRP"), which assessed the existing and long-term water supply and demand of the Santa Clarita Valley. In addition to identifying the range of water demands and supplies, the IWRP addressed opportunities to improve water supply reliability for the Santa Clarita Valley. The plan suggested a phased approach toward development of the supplies needed to meet projected demands. This approach combined additional acquisition of imported water, water conservation, surface and groundwater storage, water transfers and exchanges and water reclamation in an integrated strategy designed to meet increasing water demands while assuring a reasonable degree of supply reliability.

In 1998, 1999, 2000 and 2001, the Committee prepared Annual Water Reports (also referred to as "water reports") providing information about the local water supplies and water demands in Santa Clarita Valley. These water reports are required as part of the Newhall Ranch EIR mitigation measures imposed by Los Angeles County. The information presented in the water reports is intended to supplement information already required by the County's Development Monitoring System ("DMS"). The DMS is used by both the County and the City of Santa Clarita to track development activity in the Santa Clarita Valley, and it requires that adequate water supplies be in place prior to development taking place. The information presented in the water reports will be used by the County in connection with future land use decisions for the Newhall Ranch Specific Plan site and by the County and City of Santa Clarita for development projects in the Santa Clarita Valley in general.

In addition, in December 2000, the Santa Clarita Valley's water agencies jointly sponsored preparation of the 2000 Urban Water Management Plan ("UWMP"). The UWMP covers the CLWA service area, which includes the service areas of the four retail water purveyors. The UWMP presents information about the water supply, water demand, water reclamation (also referred to as "water recycling"), water conservation and reliability planning in the CLWA service area over a 20-year time frame. Consultants with expertise in water resource management were retained to assist CLWA and retail water purveyors in preparing the UWMP.

In April 2001, opponents of the UWMP filed a lawsuit against CLWA and the retail water purveyors challenging the adequacy of the UWMP under the Urban Water Management Planning Act and the Public Trust doctrine. CLWA and the purveyors successfully demurred to the Public Trust doctrine claim and the trial court ordered the claim dismissed. The trial court has not yet ruled on the petitioners' claims challenging the adequacy of the UWMP.

The Santa Clarita Valley Water purveyors have adopted resolutions approving the UWMP. The State Department of Water Resources (DWR) has also accepted the UWMP for filing. In addition, DWR indicated in its review that the Santa Clarita Valley water purveyors had addressed virtually all of the requirements of the Urban Water Management Planning Act, including all of the more significant provisions relating to water supply, demand and reliability. Accordingly, the UWMP is considered to be in compliance with the Urban Water Management Planning Act. Whatever the outcome of the UWMP litigation, however, it is not expected to have any impact on the validity of this water resources analysis. The bulk of the UWMP data utilized in this report relates to aspects of the plan not challenged in the current litigation. Moreover, all of the UWMP data cited in this report is provided for informational purposes only. It is not required for CEQA compliance.

(f) Water Reclamation Plants in the Santa Clarita Valley

Most existing wastewater generated in the Santa Clarita Valley is treated at two WRPs, which are upstream of the proposed Newhall Ranch Specific Plan site. The two plants are operated by the County Sanitation Districts of Los Angeles County ("CSDLAC").

The Saugus WRP, a tertiary treatment plant, is located southeast of the intersection of Soledad Canyon Road and San Fernando Road. The Valencia WRP, also a tertiary treatment plant, is located on The Old Road, north of Magic Mountain Parkway. The two facilities are illustrated in **Figure 2.5-5**. The Saugus WRP, located in District No. 26, has a permitted capacity of 6.5 mgd. The Valencia WRP, in District No. 32, recently completed an expansion of its facilities to increase its permitted capacity to 13.5 mgd.

These two WRPs have been interconnected to form a regional treatment system known as the Santa Clarita Valley Joint Sewerage System ("SCVJSS"). The relationship between the two districts was established through a joint powers agreement that created the regional treatment system and permits the Valencia WRP to accept flows that exceed the capacity of the Saugus WRP.

Due to site space constraints, the Saugus WRP, completed in 1962, will not be expanded beyond its current permitted capacity of 6.5 mgd. In 1999, the Saugus WRP had an average effluent flow of 5.62 mgd (6,294 AFY), which is approximately 86 percent of its design capacity. Effluent from the Saugus WRP contains about 723 milligrams per liter TDS (total dissolved solids) and is discharged to the Santa Clara River west of Bouquet Canyon Road (UWMP 2000).

The Valencia WRP, completed in 1967, has a current permitted capacity of 13.5 mgd. The ultimate planned capacity for the Valencia WRP is 22 mgd. In 1999, the average effluent flow for the Valencia

WRP was 10.44 mgd (11,693 AFY), which is approximately 83 percent of its current design capacity. Effluent from the Valencia WRP is discharged to the Santa Clara River west of The Old Road (UWMP 2000).

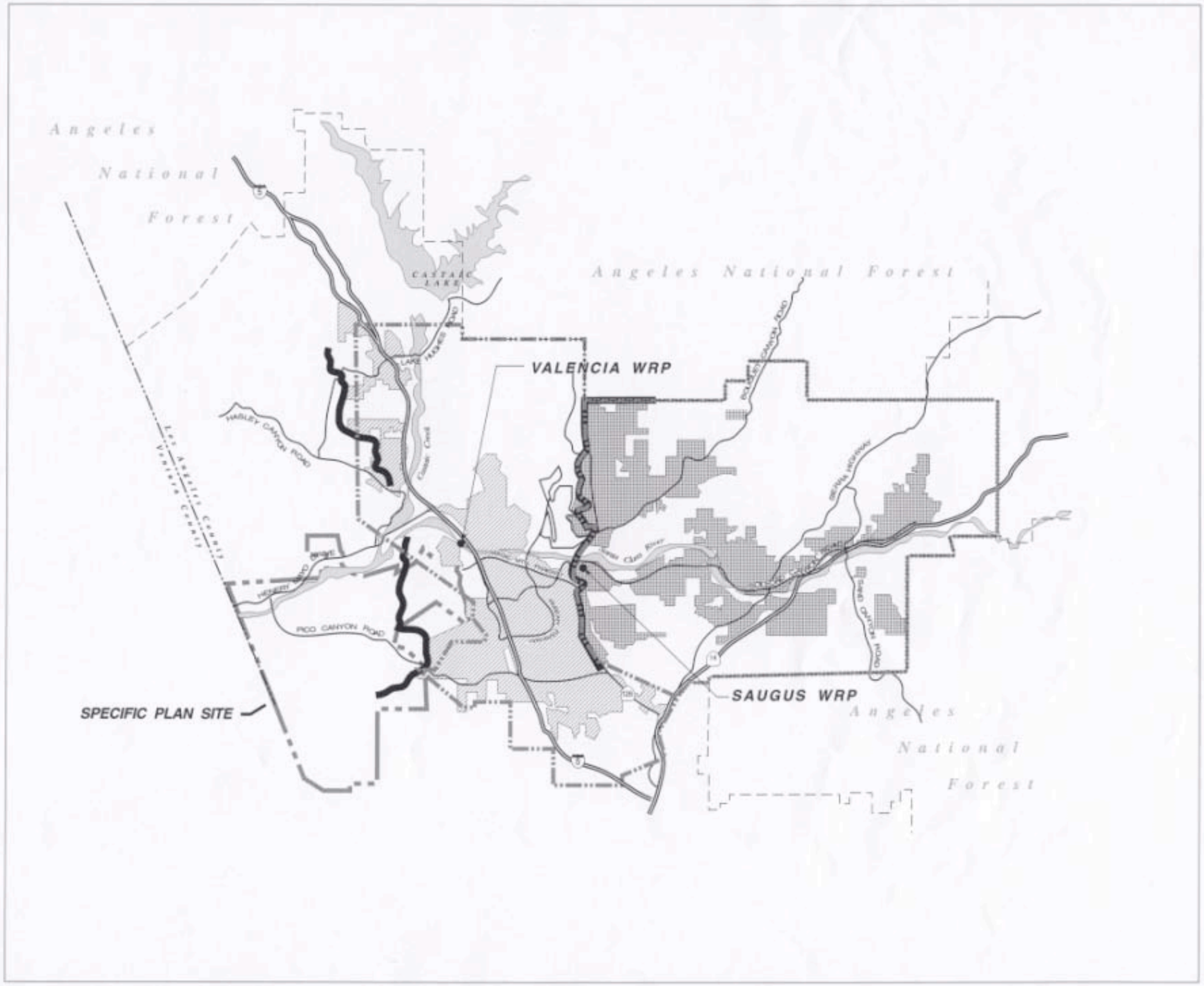
The Newhall Ranch Specific Plan proposes a new 6.9 mgd WRP on the Newhall Ranch site to exclusively serve the Specific Plan. The proposed Newhall Ranch WRP would be located near the western edge of the Specific Plan site along the south side of State Route (SR)-126. Effluent from the proposed Newhall Ranch WRP would be used to partially meet non-potable water demands within the Specific Plan site. According to the Newhall Ranch Final EIR, the proposed WRP is projected to produce an average of approximately 5,630 AFY. Of this amount, 5,344 AFY would be used for irrigation, with the remaining 286 AFY discharged to the Santa Clara River during winter months when demands are low. This supply is projected to meet 59 percent of the 9,035 AFY of potential non-potable water demands for the Specific Plan (please see Newhall Ranch Specific Plan and Water Reclamation Plant Final EIR, Appendix 4.11). The remainder of the non-potable demand is expected to be met by using reclaimed water to be provided through CLWA as part of CLWA's projected reclaimed water program. This program is described in Chapters 2.0, 5.0 and 7.0 of the UWMP.

For further information regarding use of reclaimed water from the existing WRPs and the proposed Newhall Ranch WRP, please refer to **Section 2.5.5** below.

2.5.3.3 Existing Water Service Area Characteristics

To understand water supplies and demand in the Santa Clarita Valley, it is important to highlight some of the important local conditions or characteristics of the area. These local conditions affect water demand and supplies in the Santa Clarita Valley, including the Specific Plan site and surrounding areas. The section describes local climatic conditions, regional demographics, existing topography and regional area geology and surface water flows in the Santa Clarita Valley and downstream.

In addition, the section briefly summarizes the effects of statewide drought conditions on the Santa Clarita Valley. As explained below, in general, there was minimal impact on the Santa Clarita Valley prior to the 1990-1991 statewide drought conditions. The 1990-1991 statewide drought impacted water supplies in the Santa Clarita Valley; however, on balance, the Valley responded well to those drought conditions. Since the 1990-1991 drought, CLWA and the other retail water purveyors have continued to work cooperatively to ensure that water demands are met in response to varying hydrologic conditions and increasing demand from existing and planned growth. This effort includes the decision by most of the Valley's water agencies to jointly prepare the UWMP. The UWMP describes current and future implementation of water conservation measures (called Water Demand Management Measures) within the CLWA service area, and it updates the Valley's "Water Shortage Contingency Plan."



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L E G E N D

- COUNTY SANITATION DISTRICT No 26
- COUNTY SANITATION DISTRICT No 26 POTENTIAL SERVICE AREA
- COUNTY SANITATION DISTRICT No 32
- COUNTY SANITATION DISTRICT No 32 POTENTIAL SERVICE AREA
- DRAINAGE AREA BOUNDARIES

IMPACT SCIENCES INC

NORTH

MILES

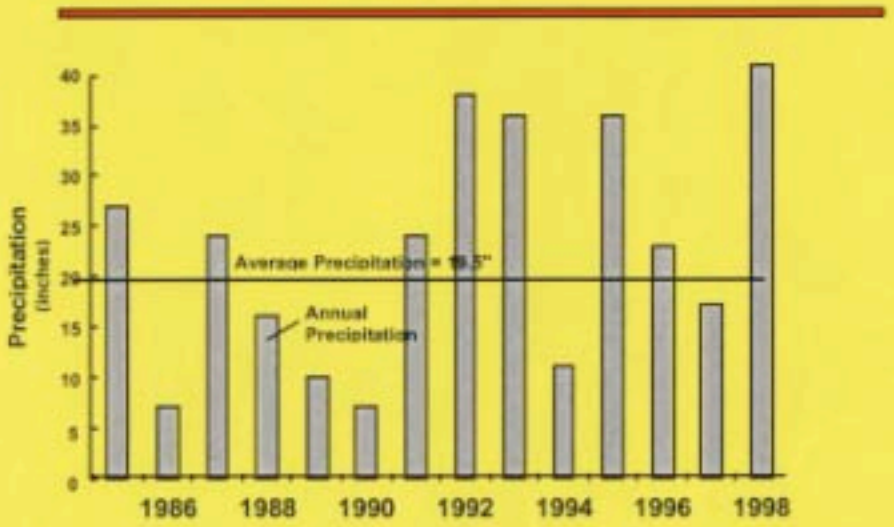
FIGURE 2.5-5

EXISTING WATER RECLAMATION PLANTS AND SANITATION DISTRICTS

(a) Climate

The climate in the Santa Clarita Valley is generally characterized as semi-arid and warm. Summer months are dry with temperatures that can reach as high as 110°F. Winter months are somewhat cool with temperatures that can drop as low as 20° F. Typically, "dry" years (less than 10 inches of rainfall per year) are followed by "wet" years (greater than 20 inches of rainfall per year) in a cyclical pattern. Average rainfall is approximately 19 inches per year in the flat areas and approximately 27 inches per year in the mountains. The region is subject to wide variations in annual precipitation.[10] **Figure 2.5-6** illustrates the annual rainfall in the Valley and graphically depicts the time periods with low rainfall.

Figure 2.5-6
Rainfall in the Santa Clarita Valley



(b) Regional Demographics

The water purveyors provide water service to residential, commercial, industrial and agricultural customers within CLWA's service area, including Santa Clarita Valley. Water service is also provided for other uses, such as fire service and utility line cleaning.

CLWA reports that the number of new service connections in its service area increased from 39,299 in 1990 to 49,550 in 1999 (**Table 2.5-8**). As shown on **Table 2.5-8**, the increase in the number of new service

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10 *See, Newhall Ranch ASR Impact Evaluation*, prepared by CH_2MHill, February 2001, Section 4.

connections was slightly more than 500 connections per year in 1991, to a maximum of 2,028 connections in 1999, representing an average annual increase of 1,139 new service connections.

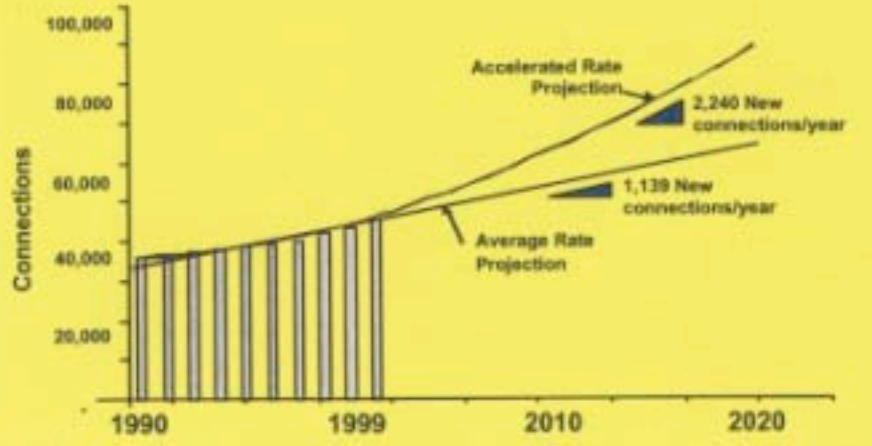
Table 2.5-8
Historical Number of Service Connections

Service Connections	1990	1992	1994	1996	1998	1999
Valencia	14,272	14,854	15,703	17,420	19,863	20,865
Newhall	5,854	6,144	6,294	6,477	6,585	6,758
Santa Clarita Water Division of CLWA	18,550	19,000	19,400	19,650	20,300	21,100
LA County #36	623	736	752	768	774	827
Total	39,299	40,734	42,149	44,315	47,522	49,550

Source: UWMP 2000.

To determine the future number of service connections in the CLWA service area, the UWMP used two different projection techniques. Using an "average rate" regression technique, the number of connections is projected to be about 70,000 in the year 2020. Under the second technique (accelerated rate projection), the UWMP projects the connections to be about 96,000 by the year 2020. **Figure 2.5-7** depicts the historical and projected number of service connections in the CLWA service area.

Figure 2.5-7
Historical and Projected Number of Service Connections



(c) Topography

The CLWA service area encompasses the relatively flat-lying Santa Clarita Valley, the eastern portion of the Santa Clara River Valley and portions of the surrounding hills and mountains. The mountains include the Santa Susana and San Gabriel Mountains to the south and the Sierra Pelona and Leibre-Sawmill Mountains to the north. Elevations range from about 800 feet on the valley floor to about 6,500 feet in the San Gabriel Mountains. The headwaters of the Santa Clara River are at an elevation of about 3,200 feet at the divide separating this hydrologic area (i.e., the Upper Santa Clara River Hydrologic Area) from the Mojave Desert.

The Newhall Ranch Specific Plan is located within the East Groundwater Subbasin of the Santa Clara River Valley.[11] This area is upstream of the other groundwater basins in the Santa Clara River Valley drainage. The western end of the East Subbasin extends to roughly the Los Angeles County/Ventura County boundary line. The Piru groundwater basin is located to the west in Ventura County. The two groundwater basins are connected through relatively thin alluvial deposits (in the Alluvial aquifer) that overlie relatively impermeable Pico Formation bedrock deposits at this location. Groundwater in the Santa Clarita Valley also discharges to the Santa Clara River, which flows into Ventura County.

(d) Regional Geology

The geology within and adjacent to the CLWA service area consists of relatively thin alluvial deposits (Alluvium) overlying a deeper, relatively thick Saugus Formation in certain areas. **Figure 2.5-8** delineates the location of the Alluvium and the Saugus Formation. As discussed in further detail below, both the Alluvium and Saugus Formation contain water-bearing sediments capable of becoming saturated so as to provide water to wells. These water-bearing sediments constitute the local "groundwater reservoir" for the Santa Clarita Valley.[12]

The upper basin, called the Alluvium or Alluvial aquifer, generally underlies the Santa Clarita Valley and side canyons. The main river valley consists of medium-grained sand on the west to cobbly sand in the east. Due to the unconsolidated to poorly consolidated condition of the Alluvium, and its lack of cementation, the Alluvium has relatively high permeability and porosity. The maximum thickness of the Alluvium varies along the Santa Clarita Valley, but is generally considered to be 200 feet. The groundwater is pumped from wells up to 200 feet in depth. The Alluvium is estimated to store over 240,000 acre-feet of water. It has supplied approximately 30,000 to 40,000 acre-feet per year in

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11 *See, Newhall Ranch ASR Impact Evaluation,* prepared by CH_2MHill, February 2001, Section 3, Figure 3-2.

12 This section is based on information from the *Newhall Ranch ASR Impact Evaluation,* prepared by CH2MHill, February 2001, Sections 3 and 4, and *Hydrogeologic Conditions in the Saugus Formation, Santa Clarita Valley, California,* prepared by Richard C. Slade & Associates, LLC, January 2001.

average/normal years, and 30,000 to 35,000 acre-feet per year in dry years. The annual average groundwater production from the Alluvial aquifer during the 1990s was approximately 33,500 AFY.

Underlying the Alluvium deposits in the main portion of the Santa Clarita Valley is the Saugus Formation. The Saugus Formation consists of unconsolidated to semi-consolidated sandstone and conglomerate materials. Two faults, the active San Gabriel fault, and the potentially-active Holser fault, traverse the area. Although maximum thickness of the Saugus Formation is reported to be 8,500 feet, the estimated water-bearing thickness of the formation ranges from 5,500 feet between the San Gabriel fault and the Holser fault to 1,500 feet northeast of the San Gabriel fault. It is estimated that the amount of groundwater in storage in the Saugus Formation is about 1.65 million acre-feet. Of the 1.65 million acre-feet, the area north of the San Gabriel fault is estimated to contain approximately 130,500 acre-feet, the area between the Holser and San Gabriel faults is estimated to contain approximately 641,000 acre-feet and the area south of the Holser fault is estimated to contain approximately 641,000 acre-feet. The Saugus Formation is pumped by wells extending to about 2,000 feet in depth. It has supplied approximately 7,500 to 15,000 acre-feet per year in average/normal years, and 11,000 to 15,000 acre-feet per year in dry years.

(e) Hydrology of the Santa Clarita Valley

Most of the CLWA service area is within the Santa Clarita Valley groundwater basin (also referred to as the east subbasin of the Santa Clara River Valley.) The primary drainage course in the service area is the Santa Clara River.[13] **Figure 2.5-9** depicts the geology and hydrologic cycle in Santa Clarita Valley. **Figure 2.5-10** shows the Santa Clarita Valley, East Subbasin, with respect to other groundwater basins downstream of the Specific Plan area. **Figure 2.5-11** shows the locations of production wells in the Alluvial aquifer and Saugus Formation.

The Santa Clara River and its tributaries flow generally westward from the Santa Clarita Valley to the Pacific Ocean. The principal tributaries to the Santa Clara River include Mint Canyon, Bouquet Canyon, San Francisquito Canyon and Castaic Creek. Water flow in the canyon areas is ephemeral, and diminishes rapidly after most rainfall events. The local surface water bodies include the Santa Clara River, Bouquet Reservoir and Castaic Lake. Various reaches of the Santa Clara River were listed by EPA in 1999 as impaired due to high concentrations of chloride, nitrogen, nitrates and nitrites, high coliform count and dissolved oxygen.

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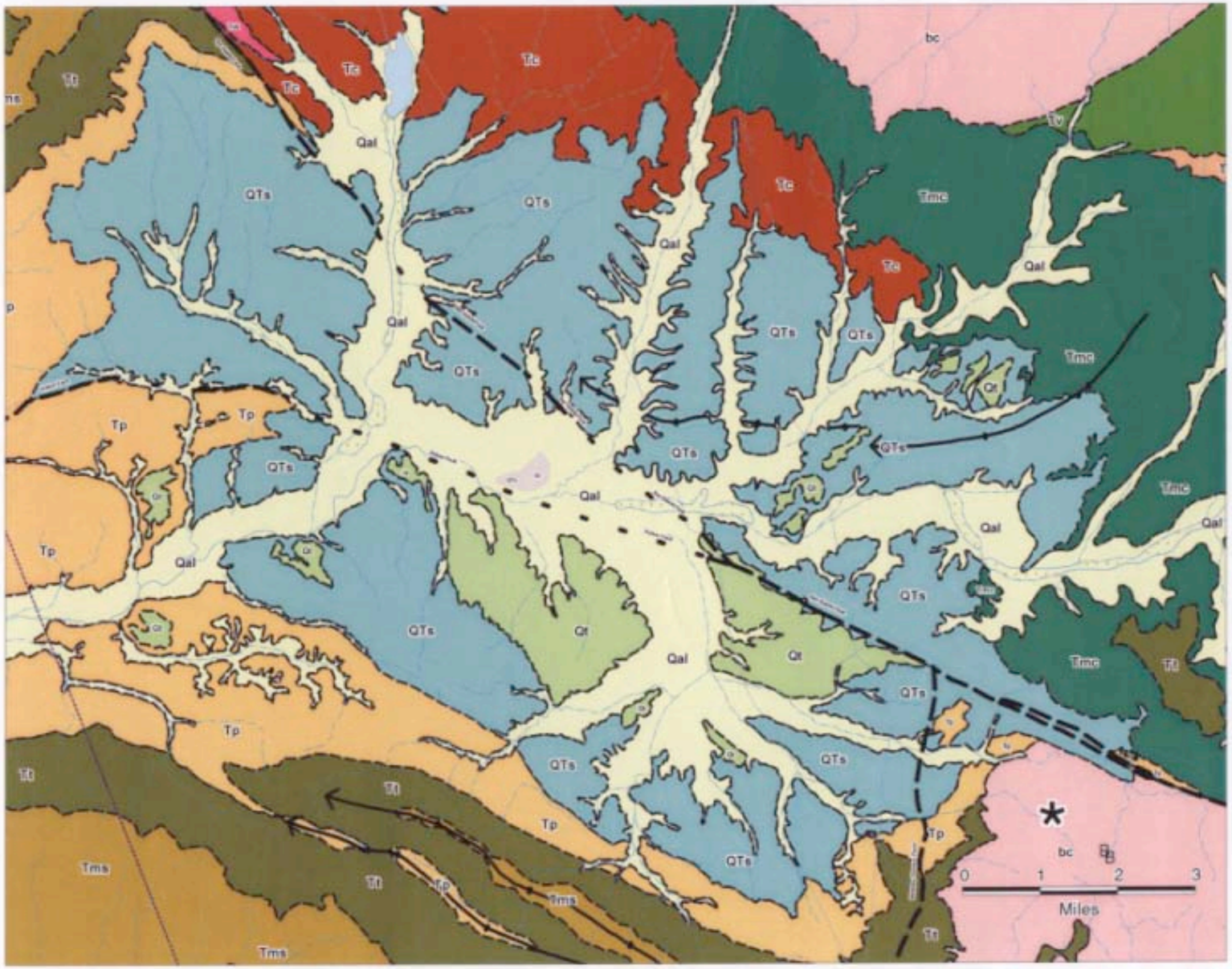
13 The information contained in this section is from *Newhall Ranch ASR Impact Evaluation*, prepared by CH_2MHill, February 2001, and an updated technical memorandum prepared by CH_2MHill.



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L E G E N D

Mapped Geologic Formations

Potentially Water Bearing

- Qal = Undifferentiated Alluvium (Quaternary Age)
- Qt = Terrace Deposits (Pleistocene Age)
- QTs = Saugus Formation (Plio-Pleistocene Age)

Non Water Bearing

- Tp = Pico Formation (Miocene Age)
- Tt = Towsley Formation (Miocene Age)
- Tms = Modelo Formation (Miocene Age)
- Tc = Castaic Formation (Miocene Age)
- Tvb = Violin Breccia (Miocene Age)
- Tmc = Mint Canyon Formation (Miocene Age)
- Ttc = Tick Canyon Formation (Miocene Age)
- Tv = Vasquez Formation (Oligocene Age)
- bc = Undifferentiated Basement Complex (pre-Tertiary Age)

Mapped Geologic Structures

- Approximate Surface Trace of Fault
- Approximate Concealed Trace of Fault
- Approximate Surface Trace of Anticlinal Fold Axis with Direction of Plunge
- Approximate Surface Trace of Synclinal Fold Axis with Direction of Plunge
- Approximate Geologic Contact

Note: Only major faults and fold axis are shown.
Geology adapted from Oakeshott (1958), Winterer & Durham (1958), Nelligan (1978), Stitt (1980), Saul & Woertas (1983), Smith (1984), Dibblee (1991, 1992a,b, 1993, 1996a,b,c, 1997a,b,c)

FIGURE 2.5-8

LOCATION OF ALLUVIAL AND SAUGUS FORMATION

The sources of surface water in the Santa Clarita Valley include precipitation, irrigation return flows, groundwater discharge, and treatment plant discharges to the Santa Clara River from the two existing WRPs. Another significant source of surface flow comes from the increased importing of SWP water supplies by CLWA to its service area.

Since 1980, CLWA has been importing SWP water as a supplemental water source to the retail water purveyors in its service area. The total amount of SWP water delivered to the service area from 1980 through 1997 was 253,800 acre-feet.

In order to evaluate historical and projected surface flow to Ventura County from imported SWP water in Santa Clarita Valley, an updated technical memorandum was prepared by CH_2MHill. The objective of the updated technical memorandum was to estimate the historical and projected flow to Ventura County due to the importation of SWP water by CLWA and the use of that water in the Valley.

Based on the updated technical memorandum, imported SWP water is used to meet both residential and non-residential interior and exterior water demands. A portion of the imported SWP water finds its way into the Santa Clara River watersheds where it recharges local aquifers and flows downstream to Ventura County. Stream gage data collected at the County line (USGS Gage No. 11108500) from 1953 to 1996 demonstrates a 60 percent increase in average annual flow since the importation of SWP water, even during dry years (the annual flow of 17,596 cubic feet per second (cfs) in 1991, a drought year, exceeds the annual average flow prior to importation of 16,479 cfs). The source of this additional flow in the Santa Clara River watershed includes imported SWP water.

The SWP water used to meet residential and non-residential interior water demands ultimately reaches the local existing WRPs in the Valley. Historically, the treated water has been discharged to the Santa Clara River, where it contributes significantly to the natural surface water and groundwater flows reaching Ventura County. As discussed below, although a significant portion of the imported water used for irrigation is lost through evapotranspiration to the atmosphere, SWP water has significantly increased the flow of surface water and groundwater flows in the Santa Clara River watershed.

Based on the updated technical memorandum, it is estimated that approximately 136,544 acre-feet of imported SWP water has been added to the Santa Clara River through return flow and discharges from existing water treatment plants in Santa Clarita Valley. It is estimated that approximately 18,000 AFY enhanced the watershed and flowed downstream to Ventura County in 1999.

In the future, when CLWA takes its full 95,200 AFY entitlement of SWP water, CH_2M Hill estimates that approximately 22,160 AFY will enhance the watershed and flow to Ventura County (CH2M Hill, 2001). Consequently, similar to other watersheds where water importation has occurred (e.g., Santa Ana River), the flow in the Santa Clara River watershed is, and will continue to be, significantly enhanced by importing SWP water to the watershed. The importing of SWP water, and the use of that water in the CLWA service area, will continue to result in a net benefit in the amount of surface flow into Ventura County.

(f) Effects Of Drought

Drought cycles will affect the Specific Plan in two ways. First, local droughts in the Santa Clarita Valley historically have resulted in short-term increased water demand, short-term increased groundwater pumping, and short-term decreased recharge to the local groundwater system. Second, a state-wide drought affects water availability in the SWP system and ultimately deliveries from the SWP system. Droughts have occurred locally in 1947-1950, 1958-1960 and 1990-1991. Recent statewide droughts have occurred in 1976-1977 and 1987-1992.[14] Since the area's water supplies are dependent upon rainfall conditions both locally and statewide, it is important to note that wet and dry year conditions do not occur at the same time in Northern and Southern California. As a result, the water purveyors in Santa Clarita Valley are able to adjust the mix of available water resources on a year-to-year basis in response to local and statewide hydrologic conditions.

Prior to 1990-1991, drought conditions statewide had a minimal impact upon the Santa Clarita Valley other than requiring additional water supply to compensate for the lack of spring rainfall for irrigation (e.g., crops, lawns and gardens). In 1990-1991, however, for the first time, statewide drought conditions caused cutbacks in imported SWP supplies in the Santa Clarita Valley. Water production also declined in some wells operating in the shallow, outlying reaches of the Alluvial aquifer. However, because Valencia Water Company's alluvial wells are located in the major water bearing reaches of the aquifer, none of Valencia's alluvial wells experienced loss of production during 1990-1991. In addition to the alluvial groundwater supplies, the water purveyors in Santa Clarita Valley pumped

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14 The 1987-1992 drought was notable for its six-year duration. Statewide reservoir storage was about 40 percent of average by the third year of the drought. The State Water Project met contractors' delivery requests during the first four years of the drought, but then were forced by declining reservoir storage to reduce deliveries substantially. The SWP terminated deliveries to agricultural contractors and provided about 30 percent of requested urban deliveries in 1991, the single-driest year of the drought. A 1991 Governor's executive order resulted in implementation of a state drought water bank. (*Critical Water shortage Contingency Plan*, Governor's Advisory Drought Planning Panel, December 29, 2000.)

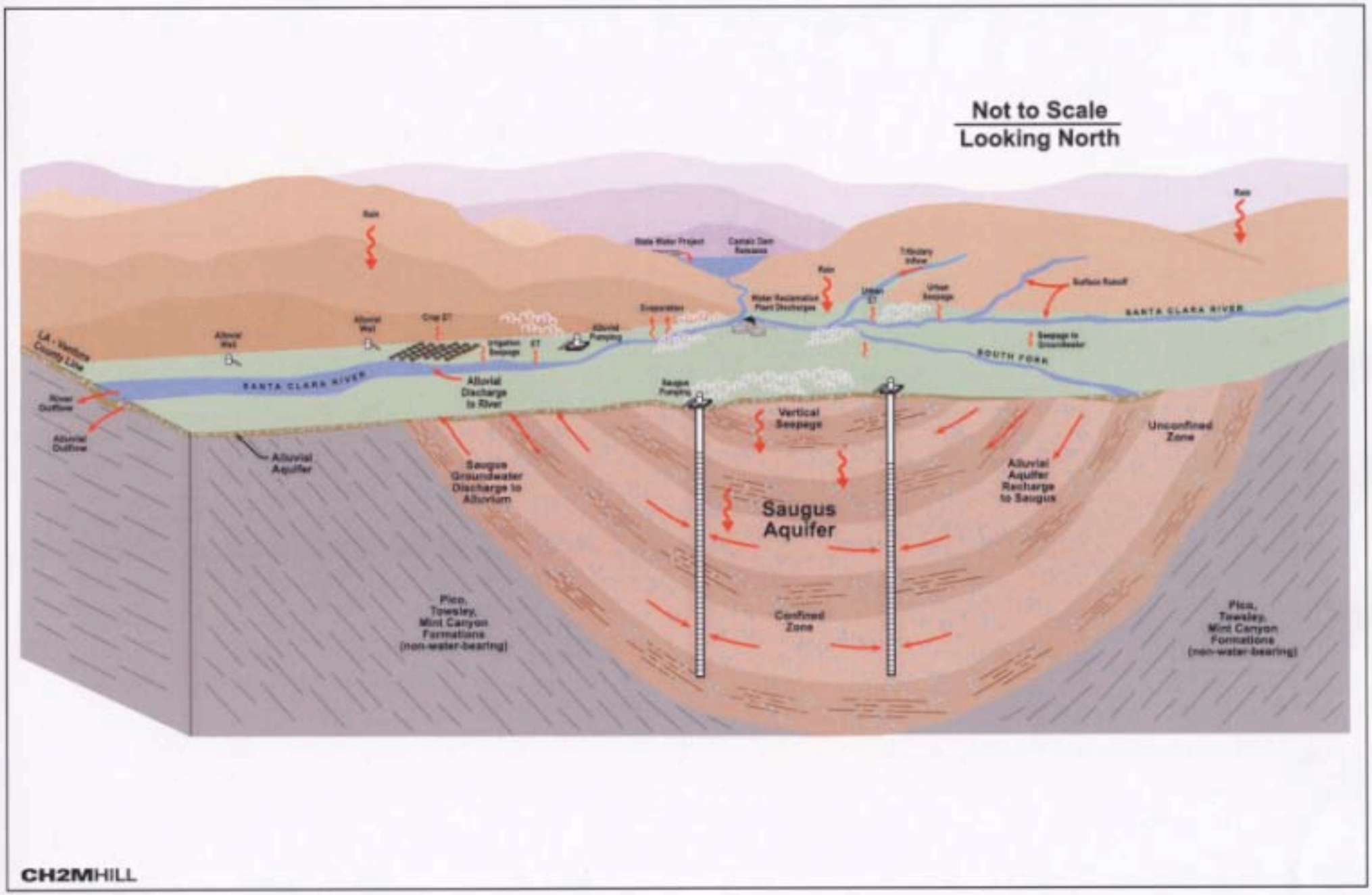

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FIGURE 2.5-9

GEOLOGY AND HYDROLOGIC CYCLE–SANTA CLARITA VALLEY

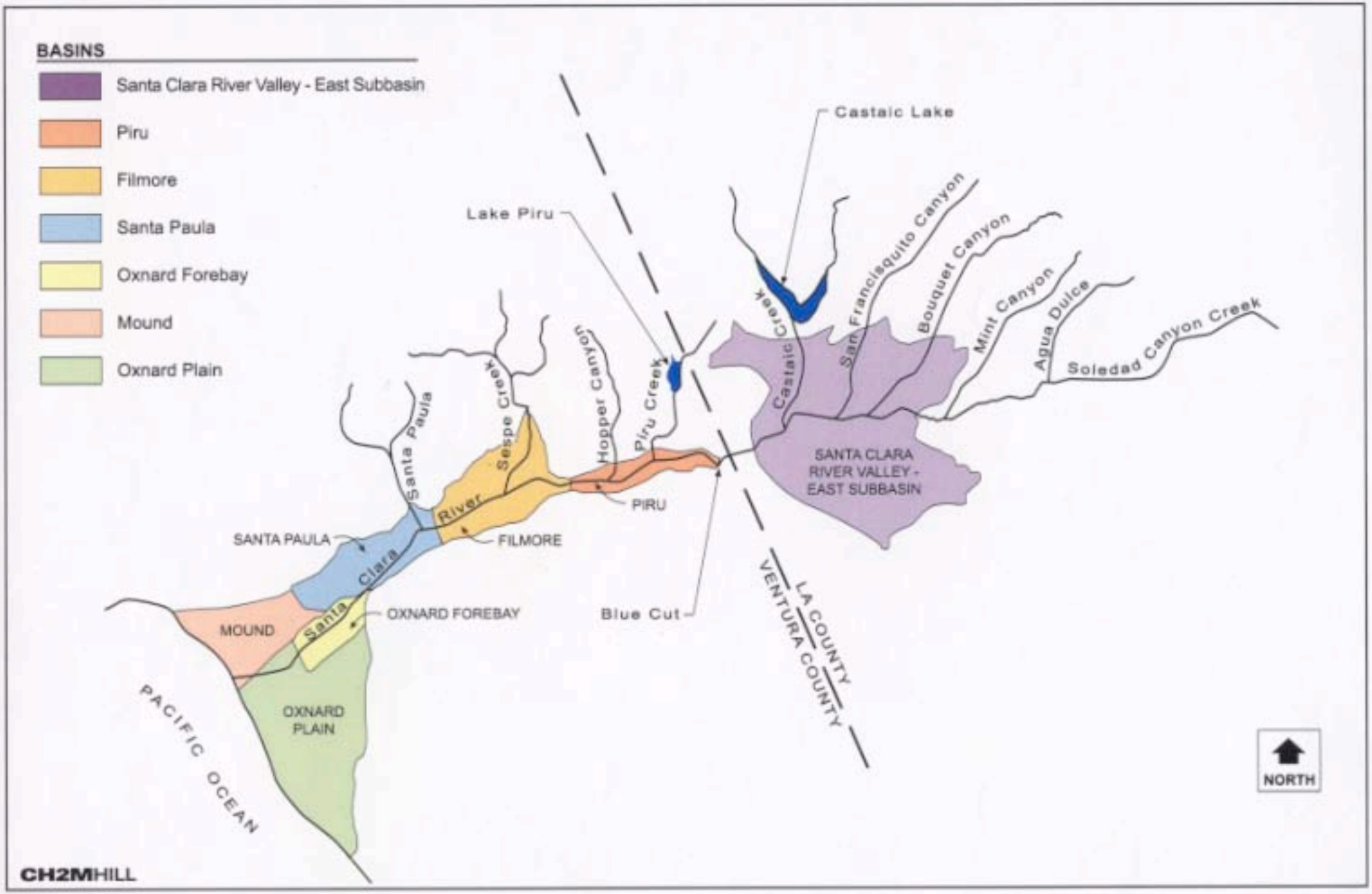

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FIGURE 2.5-10
GROUNDWATER BASINS IN THE SANTA CLARA RIVER DRAINAGE

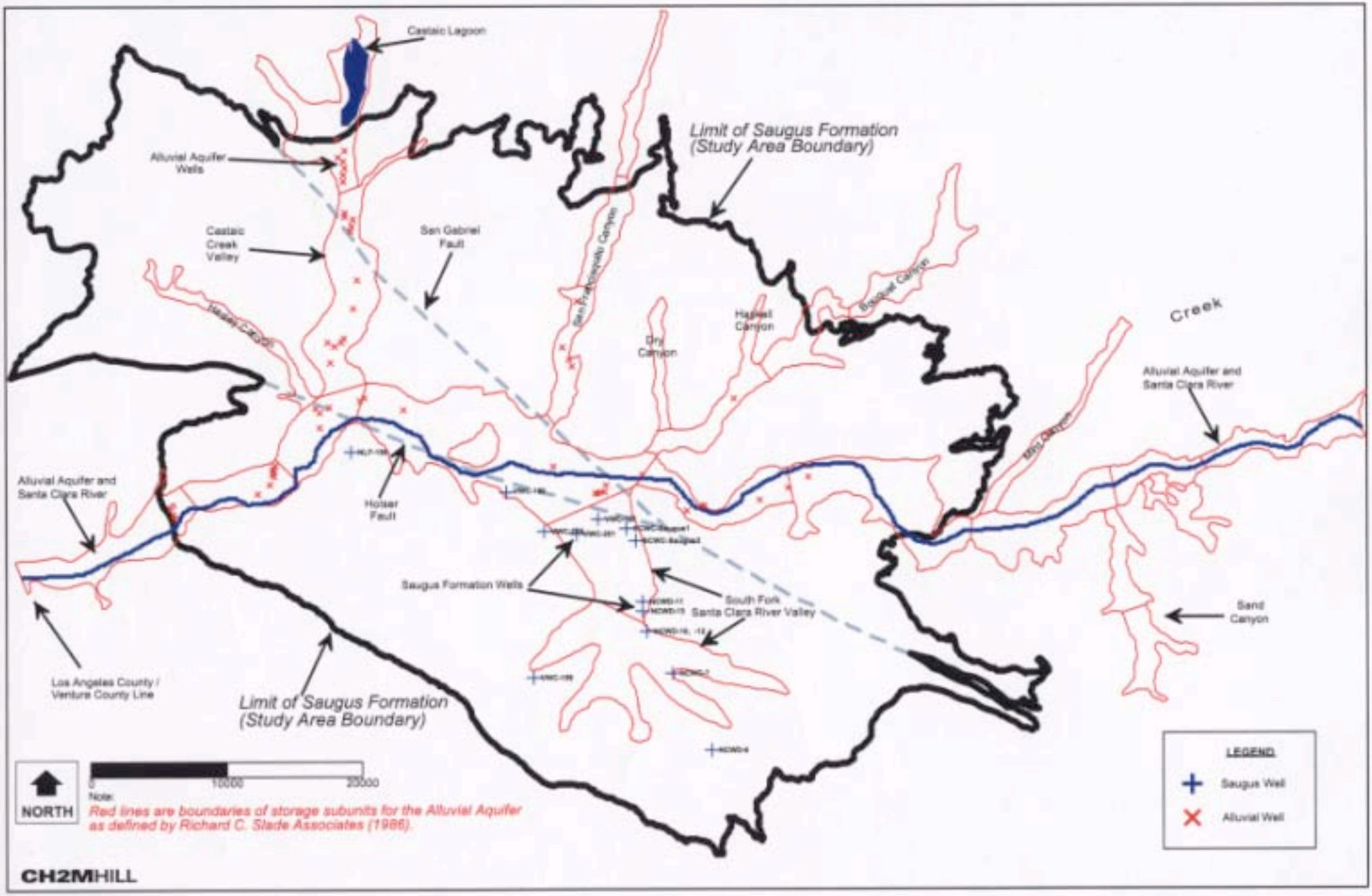

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FIGURE 2.5-11

GROUNDWATER PRODUCTION WELL LOCATION–SANTA CLARITA VALLEY

more water from the Saugus Formation in 1990-1991, and requested that their customers voluntarily conserve water by 10 percent. Actual water use in the valley decreased by 20 percent as a direct result of water conservation efforts.

Due to the steps taken by the local purveyors, water demands in the Santa Clarita Valley were met for the duration of the 1990-1991 drought. CLWA also elected not to participate in the state's Drought Water Bank because alternate local supplies were available to meet water demands in the Valley. In addition, members of the Upper Santa Clara Valley Water Committee signed a "Drought Emergency Water Sharing Agreement," agreeing to share water from all sources, and to facilitate beneficial water transfers, exchanges and wheeling arrangements. The Committee also worked with the City of Santa Clarita and the County of Los Angeles to implement water use ordinances for Valley residences, review water consumption and supply data and recommend measures to encourage conservation.

Since the 1990-1991 drought, CLWA and the other retail water purveyors have continued to work cooperatively to ensure customer demands are met under varying hydrologic conditions and with overall increasing demands from planned growth. These efforts have included water resource planning activities, acquisition of new water supplies and construction of transmission and treatment facilities, as discussed in further detail below. These efforts include the decision by most of the Valley's water agencies to jointly prepare the UWMP. The UWMP describes current and future implementation of water conservation measures (called Water Demand Management Measures) within the CLWA service area. These conservation measures are described in Chapter 5.0 of the UWMP. The UWMP also includes an update to the Valley's "Water Shortage Contingency Plan." The updated plan is based on the water agencies' actual experience in addressing water shortages in the Valley in 1991 (due to the continuation of the 1990-1991 statewide drought) and in 1994 (due to the 1994 Northridge earthquake). The updated plan is described in Chapter 6.0 of the UWMP.

At the state level, significant changes have also occurred in California's water management framework since the last statewide drought of 1987-1992. For further information regarding these statewide changes, please refer to **Section 2.5.4**, subsection, **"SWP Reliability"** and *Critical Water Shortage Contingency Plan*, Governor's Advisory Drought Planning Panel, December 29, 2000 (Chapter 2).

2.5.4 WATER SUPPLIES AND DEMAND IN THE SANTA CLARITA VALLEY

2.5.4.1 Preface

This section provides important regional information regarding available water sources for the Santa Clarita Valley, including the Specific Plan site. The section summarizes two important aspects of the water picture, which provide context to the water supply and demand analysis of the Specific Plan. First, the section summarizes the existing and planned future water supplies for the Castaic Lake Water Agency ("CLWA") service area, including the Specific Plan site. Second, the section summarizes the historic, existing and projected water demands within the CLWA service area.

Historically, local groundwater extracted from the Alluvial aquifer and Saugus formation has been the primary source of water in the Santa Clarita Valley. However, since 1980, local groundwater supplies have been supplemented with imported water from the SWP. These current water supplies are described in this section.

This section also briefly describes the groundwater resources of the Santa Clarita Valley and SWP water supplies, including reclaimed water, groundwater banking supplies, water transfers and desalted water. In addition, in recent years, water conservation has become an increasingly important factor in water supply planning. Conservation planning is a required component of the UWMP prepared by the water purveyors in the Santa Clarita Valley. Finally, this section describes the UWMP's current drought contingency planning for the Santa Clarita Valley.

As discussed above, this section provides cumulative water demand data for informational purposes only; it is not required by CEQA because the applicant has secured sufficient water sources (Newhall Agricultural Water, Nickel Water, etc.) to serve the Specific Plan through buildout. These water sources, which are independent of the water sources provided by CLWA (i.e., regional/cumulative CLWA/SWP supplies), include either: (a) water already being used by the applicant on an annual basis (i.e., agricultural groundwater); or (b) "new" water purchased by the applicant for the purpose of serving the water needs of the Specific Plan (i.e., Nickel Water, Newhall/SWP Water, etc.). The use of these available supplies does not result in the consumption of the regional/cumulative water supplies of the Santa Clarita Valley. With regard to the former, the supplies are already in use on an annual basis, resulting in no change in regional/cumulative water supplies. As to the "new" supplies identified above, they would not exist *but for* implementation of the Specific Plan.

2.5.4.2 Local Groundwater Supplies

Prior to 1980, local groundwater extracted from the Alluvial aquifer and the Saugus formation was the primary water source for the Santa Clarita Valley. The current capacities and future potential of these aquifers are discussed below, including the reliance on these sources during drought periods. The groundwater information presented below is based on: (a) a 2-volume report prepared by Richard C lade & Associates ("Slade") entitled, "Hydrogeologic Investigation of the Perennial Yield and Artificial Recharge Potential of the Alluvial Sediments in the Santa Clarita Valley of Los Angeles County, California," dated December 1986; (b) a 2-volume report prepared by Slade entitled, "Hydrogeologic Assessment of the Saugus Formation in the Santa Clarita Valley of Los Angeles County, California," dated February 1988; (c) a technical memorandum prepared by Slade, dated November 16, 2000 (Appendix C to UWMP); (d) a letter from Joseph C calmanini, Luhdorff and Scalmanini Consulting Engineers, dated December 15, 2000, regarding review of the groundwater components of the UWMP (Appendix D to the UWMP); (e) a report prepared by Slade entitled, *Assessment of the Hydrogeologic Feasibility of Injection and Recovery of Water in the Saugus Formation, Santa Clarita Valley, California,* dated February 2001, including the Technical Appendix by Slade entitled, *Hydrogeologic Conditions in the Saugus Formation, Santa Clarita Valley, California,* February 2001; (f) a report prepared by CH_2MHill entitled, *Newhall Ranch ASR Impact Evaluation,* dated February 2001; (g) a report prepared by Slade entitled, *2001 Update Report Hydrogeologic Conditions in the Alluvial and Saugus Formation Aquifer Systems,* dated July 2002; and (h) a report prepared by CH_2MHill entitled, *Newhall Ranch Updated Water Resources Impact Evaluation,* dated September 2002.

As stated above, the groundwater basin underlying the CLWA service area consists of two aquifers comprised of the Alluvial aquifer and the deeper underlying Saugus Formation (see previous, **Figure 2.5-8**). The two aquifers occupy approximately 84 square miles in the central portion of CLWA's service area.

The geologic sediments in the Alluvial aquifer and the underlying Saugus Formation have been assessed according to their relative water-bearing characteristics. The term "water-bearing characteristics" means the relative ability of the geologic materials to contain, transmit and yield groundwater to wells. As such, two geologic divisions are recognized in the Santa Clarita Valley: a water-bearing sediment group and a nonwater-bearing rock group. Depending upon water levels, the water-bearing sediments are capable of becoming saturated, which allow the sediments to provide water that can be extracted by pumping through wells. As such, the sediments in these aquifers constitute the "groundwater reservoir" in the Santa Clarita Valley.

The water-bearing sediments have been penetrated to various depths by numerous water wells in the region and historically have provided virtually all of the groundwater extracted in the Valley. Underlying the water-bearing sediments is the relatively impermeable, nonwater-bearing bedrock.

Figure 2.5-8 illustrates the water-bearing sediments in the Alluvium (shown as map symbol, Qal), in the terrace deposits (shown as Qt) and in the geologically older sediments known as the Saugus Formation (shown as QTs). For the most part, the water-bearing sediments are geologically younger, more permeable, less consolidated and less structurally deformed than the underlying relatively impermeable, nonwater-bearing bedrock.

(a) Alluvial Aquifer

The water-bearing sediments in the Santa Clarita Valley consist of the alluvial or valley fill deposits that underlie the Santa Clara River and its tributaries. Typically, the Alluvial aquifer tends to be the deepest along the central portion of the river, and thins or pinches-out as the flanks of the adjoining hills are approached. The maximum thickness of the Alluvial aquifer varies in the Santa Clarita Valley, but is generally considered to be approximately 200 feet. (Slade 1986, 2000.) The Alluvium is able to produce good quality water where saturated.

Groundwater present in the alluvial deposits in the Santa Clarita Valley is unconfined. Natural sources of recharge to the Alluvium include deep percolation of direct precipitation; infiltration of stream runoff flowing into the valley along the Santa Clara River and its tributaries; subsurface inflow from the adjoining (upgradient) portions of the Alluvial aquifer to the north and east of the Valley; and discharge of groundwater from the Saugus Formation to the Alluvial aquifer on the west side of the Santa Clarita Valley.

Man-made sources of recharge to the Alluvial aquifer include deep percolation of irrigation seepage; percolation of stormwater runoff from urban areas; percolation of surface flow and underflow from Castaic Dam in the Castaic Creek area; percolation of water released by the Los Angeles Department of Water and Power from its reservoir facilities in Dry Canyon and upper Bouquet Canyon; and percolation of discharges to the Santa Clara River from the existing WRPs.

Outflow or discharge from the Alluvial aquifer occurs by water well extractions. Additional discharge occurs by subsurface outflow through the Alluvial aquifer to the downstream Piru groundwater basin to the west, and by seepage to underlying permeable portions of the Saugus Formation, particularly in the eastern portion of the basin. Discharge also occurs by evapotranspiration in areas where deep-rooted

riparian vegetation grows along the main Santa Clara River channel, particularly along the western reach of the river.

Available aquifer test data from Alluvial wells indicate that the Alluvial aquifer is unconfined (i.e., aquifer is under water table conditions). Transmissivity values range from 35,000 to over 400,000 gallons per day per foot and specific yield values range from about 0.09 to 0.16 (Slade, 1986).

As to the municipal-supply water well extraction from the Alluvial aquifer, the Newhall County Water District ("NCWD"), the Santa Clarita Water Division of CLWA ("SCWD") (formerly the Santa Clarita Water Company), Valencia Water Company ("VWC") and the Wayside Honor Rancho ("WHR") own and operate municipal-supply wells and extract water from this aquifer. The Newhall Land and Farming Company also owns and operates private agricultural-supply wells and extracts water from this aquifer.[15] **Figure 2.5-12** illustrates a typical well configuration.

Groundwater levels in the Alluvial aquifer have varied over the period of available record, reflecting changes in pumping and variations in the amount of recharge and discharge.[16] Because of the generally high permeability of the Alluvium and the hydraulic interrelationship between the Alluvial aquifer and the Santa Clara River and its tributaries, groundwater levels may rapidly fluctuate over the course of a year, and, to a large degree, in response to precipitation, runoff and groundwater pumping.

The amount of groundwater in storage in the Alluvium can vary considerably because of the effects of recharge and discharge from the aquifer. Slade (2000) has estimated the historic quantity of water stored in the Alluvial aquifer at 240,000 acre-feet following periods of high rainfall. The historical annual production of the Alluvial aquifer is estimated to be between 30,000 to 40,000 AFY in normal/average rainfall years (Slade 2000; Scalmanini 2000). During dry years, the Alluvial aquifer production should be reduced to the range of 30,000 to 35,000 AFY (Slade 2000). These amounts include the agricultural water that the Newhall Land and Farming Company ("Newhall") pumps for agricultural irrigation purposes on Newhall's land in Los Angeles County. Newhall pumps an average of approximately 7,038 AFY for its agricultural operations in Los Angeles County.

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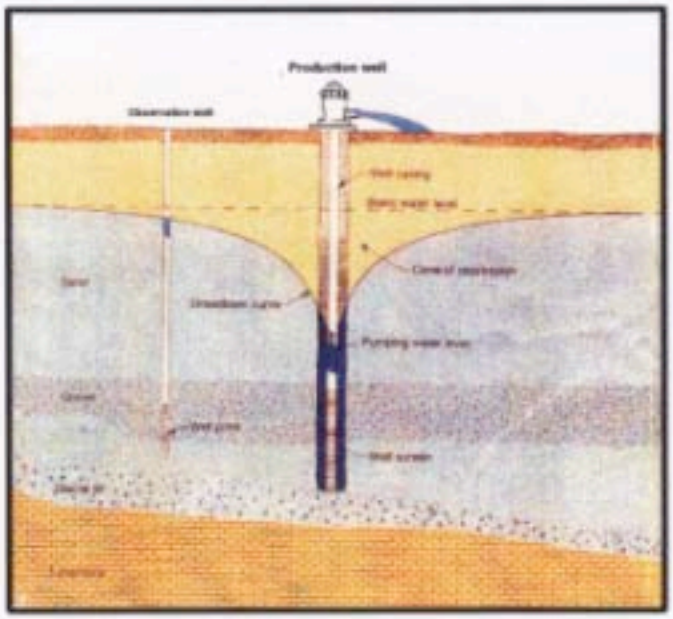
15 The wells identified above do not include pumping of water from this aquifer by other privately-owned industrial, agricultural, ranch or domestic-supply wells. Production of water from these other wells is estimated to be 500 acre-feet per year.

16 Available records generally extend back to the 1950s, with some data available from about 1930 to 1947.

Figure 2.5-12
Typical Well Configuration
Source: UWMP 2000



Based on the results of Slade (1986, 2000), and the operating experience of the Santa Clarita Valley water purveyors, Scalmanini (2000) addressed the sustainable yield of the Alluvial aquifer and found that the range of pumping from the Alluvial aquifer (30,000 to 40,000 AFY in normal/average years, and 30,000 to 35,000 AFY in dry years) is consistent with studies of the aquifer and the successful operating experience of the aquifer over the last 50 years:

> "[T]he Alluvium has been managed within its perennial yield,[17] while pumping in the broad range of nearly 20,000 AFY to more than 42,000 AFY. Although there have been seasonal and longer term intermittent lowering of ground-water levels in response to both variations in pumping and variations in precipitation (and associated recharge), *the long-term trend in Alluvial ground-water levels has been stable, with no persistent trend toward lower water levels and associated depletion of ground-water storage.* While the cited ranges for Alluvial pumpage in various year-types suggest that, overall, the average extraction will be greater than the perennial yield reported by Slade in 1986, recent high Alluvial pumping and sustained high ground-water levels suggest that an updated perennial yield analysis would result in a higher value of perennial yield than that reported by Slade nearly 15 years ago. Ultimately, however, the exact number is not as important as operating in a range of production that does not cause undesirable results such as chronic ground-water level decline; [and] the ranges cited in the UWMP would certainly fit that criterion. In any case, in light of the range of historical pumping from the Alluvium and the lack of any chronic ground-water level depression as a result of that pumping, it

17 Perennial yield is defined as the maximum quantity of water that can be withdrawn annually from a groundwater resource under a given set of conditions without causing an undesirable result. The phase "undesirable result" is understood to refer to a gradual lowering of the groundwater levels resulting eventually in depletion of the supply, subsidence, increased energy costs, desiccated wetland or degraded water quality. Source: *California Groundwater Management*, Groundwater Resources Association of California, Steve Bachman, Carl Hauge, Kevin Neese, Anthony Saracino.

> appears sound to plan on long-term ground-water supplies from the Alluvium in the general ranges of pumping included in the UWMP, which are consistent with what has been successfully practiced over the last 50 years." (*Emphasis added.*) (Scalmanini 2000.)

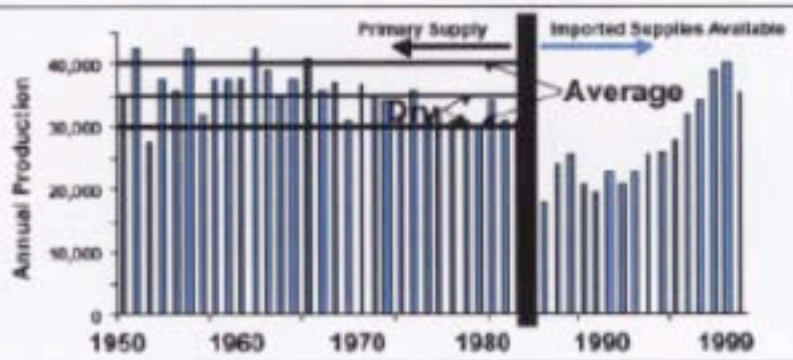
This information indicates that use of the Alluvium has occurred without adverse affects such as long-term water level decline or degradation of groundwater quality. The current management practice of the Santa Clarita Valley water purveyors is to prioritize the use of the Alluvial aquifer because of the aquifer's ability to rapidly recharge, store and produce good quality water on an annual basis. Like most groundwater basins, it is possible to intermittently stress the Alluvial aquifer (i.e., pump in excess of the perennial yield value for one or more years without long-term adverse effects). Short-term withdrawal in excess of the perennial yield may temporarily lower groundwater levels, however, subsequent decreases in pumping and natural recharge results in a rapid return of groundwater levels and associated refilling of groundwater storage with no harm to the resource. Historical groundwater data collected from the Alluvial aquifer over many hydrologic cycles demonstrate that groundwater elevations return to normal in average or wet years following periods of abnormally low rainfall.

(1) Historical and Current Conditions of the Alluvial Aquifer

Over the last 50 years, groundwater production from the Alluvial aquifer has ranged from 20,000 AFY to more than 40,000 AFY. Since the introduction of SWP supplies to the CLWA service area, total pumpage from the Alluvial aquifer has ranged from a low of about 20,000 AFY (in 1983) to a high of 43,000 AFY (in 1999); average pumpage from the Alluvium over that period has been 28,500 AFY. Agricultural pumpage of the aquifer throughout the 1950s was consistently in the range of 33,000 AFY to 41,000 AFY (1999 Water Report, p. 9).

Figure 2.5-13 depicts historical Alluvial aquifer groundwater production from 1950 to 1999. The historical data and all technical information indicate that the Alluvial aquifer is in good operating condition. The data and related information show that the Alluvial aquifer has produced annually up to 40,000 AFY without any undesirable results (such as long-term water level declines or degradation of the water quality).

Figure 2.5-13
Historical Groundwater Production - Alluvial Aquifer
(acre-feet per year)



Source: UWMP 2000.

(2) Groundwater Levels in the Alluvial Aquifer

Based on available data, the groundwater levels over the last 20 years are generally higher than over the preceding 30 years. In some locations of the Alluvial aquifer, there are intermittent dry-period declines (and an associated use of some groundwater from storage) followed by wet-year recoveries (and associated refilling of storage space). On a long-term basis, whether over the last 20 years when average pumpage was slightly less than the 1986 estimate of perennial yield or over the last 40 to 50 years (since the 1950s - 1960s), the Alluvial aquifer shows no trend toward decreasing water levels or storage decline. Based on the available data, pumpage from the Alluvial aquifer has been and continues to be within the perennial yield of the aquifer. (1999 Water Report, p. 10; Scalmanini, 2000, p.2.)

(3) Groundwater Flows in the Alluvial Aquifer

In general, groundwater movement in the Alluvium beneath the side canyons is toward the east-west trending Santa Clarita Valley and then westward in the Alluvium toward the Los Angeles County/Ventura County line. This general pattern of groundwater flow in a westerly direction remains unchanged whether groundwater levels are high or intermittently depressed. This finding is based on an examination of aquifer extent and historical groundwater levels.

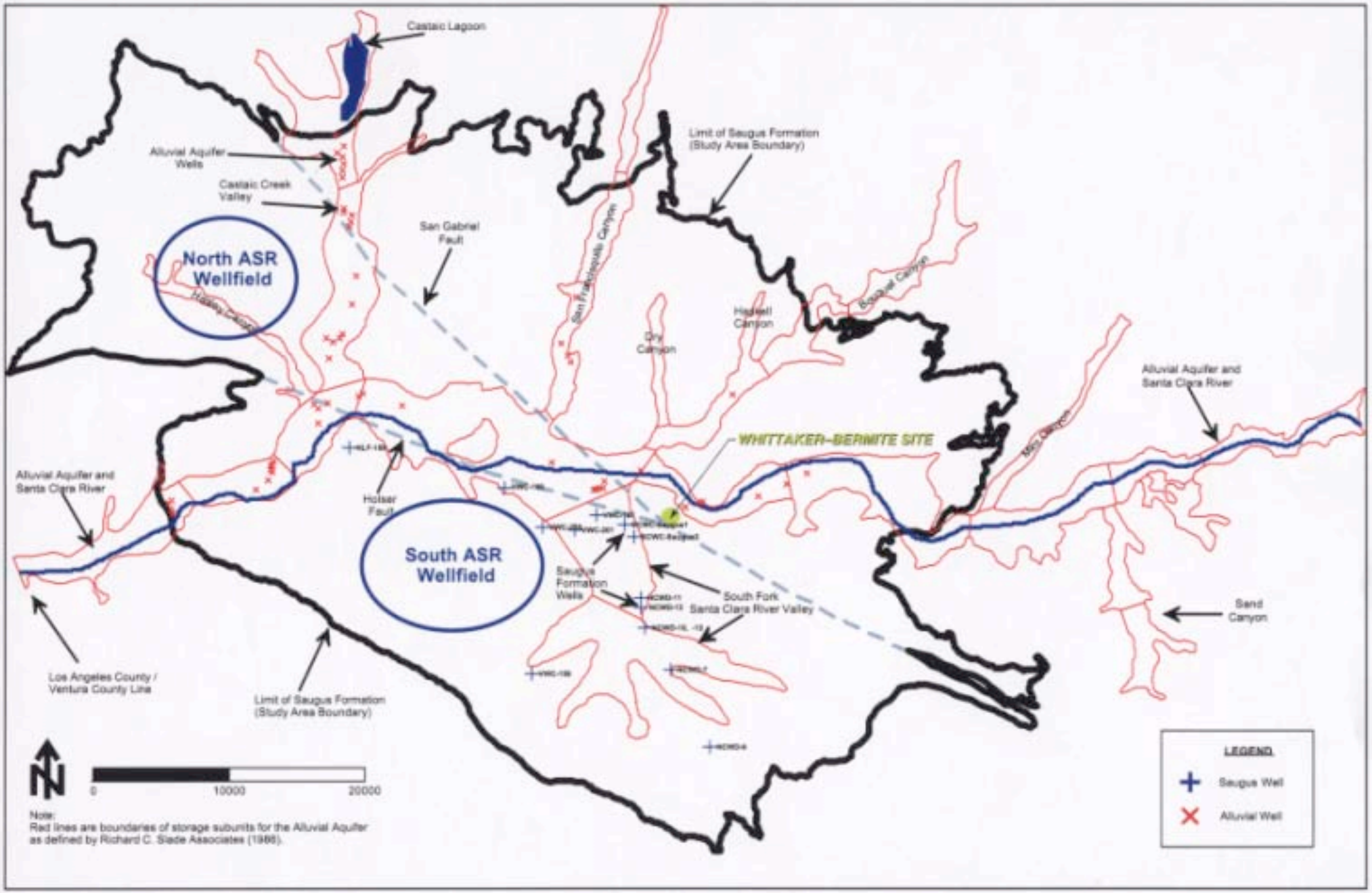
The data suggest that potential groundwater outflow at the westerly end of the Alluvium has remained unchanged for the period of available data, independent of the fluctuations in other parts of the Alluvium (in the central to easterly part of the Santa Clarita Valley). As a result, although not quantified, the nearly

constant long-term groundwater levels suggest that potential outflow from the basin has remained nearly constant throughout the historical variations in pumpage and hydrologic conditions (1999 Water Report, p. 12).

(4) Water Quality in the Alluvial Aquifer

The principal water quality concern in waters from the Alluvial aquifer is total dissolved solids ("TDS"). TDS concentrations in the Alluvial aquifer typically range from 400 to 700 milligrams per liter ("mg/l"), and the water is considered moderately hard to hard. (UWMP 2000). Groundwater quality variations also inversely correlate with precipitation and stream flow: Wet periods have produced substantial recharge of higher quality water (low TDS) and dry periods have resulted in an increase in TDS (and individual component constituents) in the deeper parts of the aquifer.

In addition, the water purveyors have tested municipal-supply water wells in the Alluvial aquifer in response to claims that groundwater supplies in the Alluvium are contaminated from ammonium perchlorate. Perchlorate is used in the manufacture of rocket propellants, munitions and fireworks. The alleged source of perchlorate is a facility in the Santa Clarita Valley known as the Whittaker-Bermite site. As shown in **Figure 2.5-14**, the Whittaker-Bermite site is located approximately five miles away from the nearest site proposed for ASR wells. No perchlorate has been detected during laboratory testing for perchlorate in any municipal-supply water wells in the Alluvial aquifer. (Slade, 2002; UWMP 2000.) In addition, each local water purveyor regularly collects groundwater samples from the numerous municipal-supply wells in the Alluvial aquifer. The wells will continue to be sampled, tested and monitored for possible detection of perchlorate, and any other contaminants. The sampling, testing and monitoring of the numerous municipal-supply wells in the Alluvial aquifer actually serve as an early warning device for the possible detection (and ultimate treatment) of perchlorate and other contaminants. For further information regarding perchlorate and other contaminants in the Valley's other aquifer, Saugus Formation, please refer to **Section 2.5.4.4(b)(4)**, below.



NEWHALL RANCH
Newhall Ranch Company

FIGURE 2.5-14

LOCATION OF ASR WELLS RELATIVE TO WHITTAKER–BERMITE SITE

(b) Saugus Formation

Underlying the Alluvial aquifer in the main portion of the Santa Clarita Valley and extending to the surrounding foothills is the Saugus Formation. The Saugus Formation contains lenticular[18] and interfingered[19] beds of poorly- to well-consolidated sandstone, conglomerate, and siltstone that are at least 5,000 feet thick in the deepest part of the basin. The degree to which these beds are laterally continuous is unknown. However, interpretations of geophysical electric log data by Slade (2000) indicates that some more permeable sand zones may be laterally continuous from one end of the basin to the other. The deepest and oldest portion of the Saugus Formation was deposited in a marine environment (the Sunshine Ranch member) and consists of siltstone, shale, and fine-grained sandstone of low permeability.

Faulting and folding of the rocks in the region have caused the sedimentary rocks, including the Saugus Formation, to form a bowl-shaped structure. The Saugus Formation and the underlying bedrock dip generally toward the center of the "bowl" from all locations along the bottom (basal) contact of the Saugus Formation.

Dominating the geologic structure in the project area is the northwesterly-trending San Gabriel fault. A spur from this fault, referred to as the Holser fault, trends west through the project area. South of the faults, the Saugus Formation is thickest and this is the area where the majority of Saugus municipal water wells are located. North of the San Gabriel fault, the Saugus Formation is older, thinner and finer grained than south of the fault. Little groundwater development has occurred north of the San Gabriel Fault.

The Saugus Formation is recharged by two principal sources: (1) deep percolation of precipitation in the exposed portions of the Saugus in the highlands surrounding the valley, and (2) seepage from the Alluvial aquifer along the Santa Clara River and its tributaries, particularly on the eastern end of the Santa Clarita Valley. Minor recharge may also occur in limited areas through irrigation seepage where the land overlying the Saugus is cultivated. In the eastern part of the Santa Clarita Valley, the Saugus Formation is underlain by older, relatively impermeable rocks of the Castaic Formation and Mint Canyon Formation, which form the bottom and sides of the "bowl-shaped" Saugus structure. Little, if any, groundwater exchange occurs between these formations and the Saugus Formation (*see* **Figure 2.5-15**).

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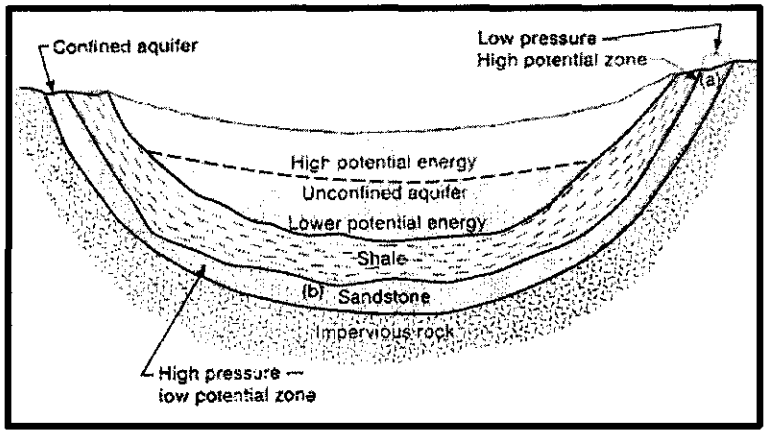
18 Lenticular: Shaped approximately like a double convex lens. When a mass of rock thins out from the center to a thin edge all around, it is said to be lenticular in form.

19 Interfinger: To grade or pass from one material into another through a series of interlocking or overlapping wedge-shaped layers.

Figure 2.5-15
Cross-Section of Groundwater Basin
Source: UWMP 2000



The amount of water-bearing sediments in the Saugus Formation is substantial. Slade (2002) estimated that the amount of water stored in the Saugus Formation is approximately 1.65 million acre-feet. A determination of the perennial yield of the Saugus Formation has not been made because information on the aquifer characteristics is limited. However, for planning purposes, the annual production of the Saugus Formation is estimated to be between 7,500 to 15,000 AFY in normal/average years and 21,000 to 35,000 AFY in dry years. (Slade 2000; *UWMP* 2000.)

Discharge from the Saugus Formation occurs in part through groundwater extraction from wells as deep as 2,000 feet. Discharge from the Saugus Formation also occurs at the west end of the valley (west of the I-5 bridge) where Saugus groundwater is known to discharge to the Alluvial aquifer. This discharge of groundwater from the Saugus Formation into the Alluvial aquifer is promoted in this area by the presence of older and relatively impermeable rocks of the Pico Formation that underlie and form the western boundary of the Saugus Formation (where they are exposed at the ground surface). These older rocks of the Pico Formation form a barrier to groundwater flow and force Saugus groundwater to discharge upwards into the Alluvial aquifer approximately 2.5 miles upstream of the county line (refer to **Figure 2.5-10**). The Saugus does not discharge at "Blue Cut," which is located approximately 3.5 miles downstream of the Saugus/Pico Formation contact and about 1 mile downstream of the County line.

As a result of the folding of the Saugus, Pico, and Mint Canyon Formations in the Santa Clarita Valley, permeable sand layers in places within the Saugus Formation are oriented so that they are in direct connection with the overlying Alluvial aquifer. Consequently, recharge to the Saugus may be greatest in these areas, particularly on the east side of the Valley. Also, discharge to the Alluvium is enhanced where permeable sand layers of the Saugus are contacting the Alluvial aquifer on the western end of the Valley where the Saugus discharges.

Available aquifer test data from Saugus wells located near the center of the Valley where the Saugus is thickest indicate that the Saugus is semi-confined (under pressure). Transmissivity values range from 80,000 to 160,000 gallons per day per foot and storativity values are on the order of 10^{-3} to 10^{-4}. In areas where the Saugus crops out, the uppermost saturated zones are partially unconfined because the permeable beds are folded upwards. In the highlands, the Saugus beds are exposed at the ground surface, and in the valley the Saugus beds are in contact with the Alluvial aquifer.

Based on the results of Slade (1988, 2000), and the operating experience of the water purveyors, Scalmanini (2000) undertook an independent review of the information regarding the Saugus Formation, and concluded that:

> "The Saugus Formation is the more difficult of the two aquifers in the area to assess, both in terms of dry period water supply and long-time dependability, primarily because there is no historical operating experience in the range of dry-year Saugus pumping cited in the UWMP. The memorandum in Appendix C [Slade 2000] includes a brief discussion of historical pumpage (up to a maximum of nearly 15,000 AFY, and an average of slightly more than 7,000 AFY over the last 20 years), limited historical water levels (no long-term change or other evidence of overdraft, with current levels comparable to pre-development levels), and ground-water storage (on the order of one million AF in storage in the depth zone of 500 to 2,500 feet). Based on these conditions and a couple of other considerations (large areal extent and substantial vertical depth of the Saugus, and typically deep well completions with sufficient available drawdown in wells), *it is concluded that it is hydrogeologically feasible to increase pumpage from the Saugus for short-term periods in a ramped manner from 15,000 to 25,000 to 40,000 AFY*. The memorandum is not specific with regard to pumping outside the "short-term" periods when pumpage might be increased; however, it implies that increased pumpage would occur only during dry periods, and that pumpage would decline to lower values in wet and normal period such that the long-term stability in water levels and storage discussed in the memorandum would be maintained." (*Emphasis added.*) (Scalmanini 2000.)

Focusing on the projected groundwater supplies depicted in the UWMP and whether those supplies were "realistic" under average and dry year conditions, Scalmanini (2000) concluded that:

> "[B]oth the Alluvium and the Saugus are reasonable and sustainable sources at the yields represented in the Plan. As such, those yields are not overstated and will not deplete or "dry up" the ground-water basin; and there is no need to "reduce" them for purposes of planning within the context of an Urban Water Management Plan." (Scalmanini 2000).

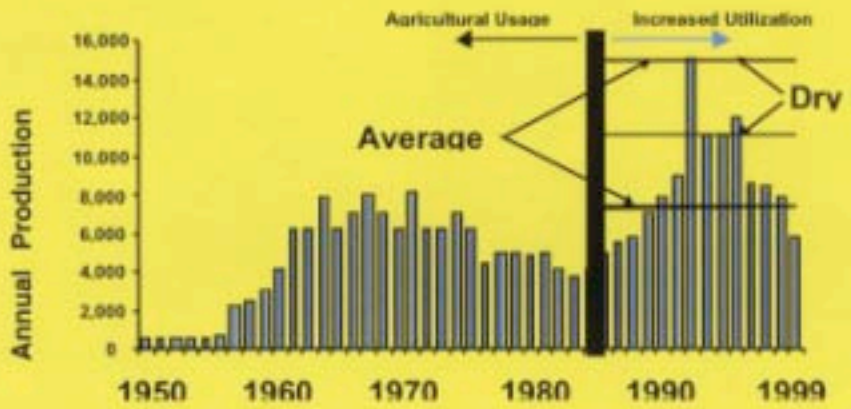
(1) Historical and Current Conditions of the Saugus Aquifer

From 1980 through 1998, total pumpage from the Saugus Formation has ranged from a low of about 3,850 AFY in 1983 to a high of nearly 15,000 AFY in 1991. Average pumpage over that period has been nearly 7,400 AFY (1999 Water Report). Slade has estimated that the historical annual production of this

formation is 7,500 AFY to 15,000 AFY. (Slade 2000.) **Figure 2.5-16** depicts the historical groundwater production from the Saugus Formation from 1950 to 1999.

Wells drilled into the Saugus aquifer south of the San Gabriel fault are anticipated to produce 1,500 to 2,000 gallons per minute, from a depth of 1,500 to 2,500 feet.

Figure 2.5-16
Historic Annual Production - Saugus Formation



(2) Groundwater Levels of the Saugus Aquifer

Although there have been seasonable water level changes, in response to groundwater pumping, the long-term trend in the Saugus aquifer (over the last 35 to 40 years) shows relatively stable groundwater levels (1999 Water Report [Figure II-13]). There is no trend toward a sustained decline in Saugus water levels or storage, which would be indicative of overdraft conditions. On that basis, and with recognition that historical (pre-1980) pumpage was quite small, and that average pumpage over the last two decades has been less than the reported range of potential recharge to the Saugus aquifer, pumpage from the Saugus aquifer has been and continues to result in the long-term stability of water levels and storage capacity.

Scalmanini (2000) has concluded that it is feasible to increase pumping from the Saugus for short-term periods in a ramped manner from 15,000 AFY to 25,000 AFY to 40,000 AFY based on: (a) historical

pumping data; (b) the amount of groundwater in storage (on the order of 1.4 million acre-feet in the depth zone of 500 to 2,500 feet); (c) the areal extent and substantial vertical depth of the Saugus; and (d) typically deep-well completions with sufficient available drawdown in the wells. The increased pumping from the Saugus would occur in dry periods, and the pumping would decline to lower values in wet and normal/average periods, to allow for recharge, such that the long-term stability in groundwater levels and storage would be maintained.

Based on work from Slade (2000) and Scalmanini (2000), the UWMP conservatively estimates that water supplies from the Saugus Formation can be withdrawn up to approximately 21,000 to 35,000 AFY in dry years, without any adverse effects, for short-term periods. The UWMP also indicates that the drilling of additional wells in the Saugus would be required to obtain these production levels for future water supplies (*see*, UWMP 2000, Table 2-4).

(3) Groundwater Flows of the Saugus Aquifer

Groundwater movement in the Saugus aquifer is toward the center of the valley from the highlands and then toward the western end of the Santa Clarita Valley where it discharges naturally into the Alluvial aquifer.

(4) Water Quality Of The Saugus Aquifer (Including Perchlorate)

TDS/Perchlorate. The primary water quality concerns in waters from the Saugus aquifer are TDS and perchlorate detection.

TDS. The total dissolved solids (TDS) concentration of Saugus Formation groundwater typically ranges from 500 to 900 mg/l. The California Secondary Maximum Contaminant Level (SMCL) is expressed as a range with the midpoint or ("upper") level for TDS being 1000 mg/l. No fixed consumer acceptance contaminant level has been established for TDS.

On behalf of Valencia Water Company, Richard C lade & Associates re-examined all available TDS data from Saugus Formation water wells in the Santa Clarita River Valley, as part of a May 2000 presentation to the California Public Utilities Commission (PUC). The original laboratory data were used to recalculate TDS using a more standard, additive method described in a United States Geological Survey report by Hem (1992). These data were then compared to historic pumping and water level records to look for any discernible trends in TDS concentrations over time, and to examine if these trends were related to changes in groundwater production.

The results of that evaluation revealed that although there has been a slight increase in TDS levels in most Saugus Formation wells in the past 40 years, this increase could not be correlated with increased groundwater production. In fact, there is some evidence that TDS concentrations actually dropped during the period of greatest Saugus Formation groundwater production.

Perchlorate. As stated above, perchlorate is used in the manufacture of solid rocket propellants, missiles and fireworks. Sources of drinking water have been contaminated by perchlorate in areas in which such manufacturing has occurred. The primary human health concern related to perchlorate is that it can interfere with the thyroid gland's ability to utilize iodine to produce thyroid hormones, which are required for normal body metabolism, as well as growth and development. Perchlorate in very high doses has been used in medicine in the treatment of Graves' disease, a condition in which excessive amounts of thyroid hormone are produced.

Because perchlorate historically has not been considered a common drinking water contaminant, there are currently no federal or state drinking water standards regulating perchlorate. However, in September 2002, Senate Bill 1822 was passed. The new law requires the State Office of Environmental Health Hazard Assessment to perform a perchlorate risk assessment and adopt a perchlorate public health goal by January 1, 2003. SB 1822 also requires the State Department of Health Services ("DHS") to adopt a primary drinking water standard for perchlorate by January 1, 2004.

DHS previously established an initial provisional "action level" for water utilities in the event that perchlorate is detected in an amount exceeding 18 parts per billion ("ppb") or micrograms per liter ("*ug/l*"). Data from DHS showed that perchlorate concentrations lower than 18 ppb were not considered to pose a health concern for the public. In January 2002, based on draft health risk evaluations released by the U.S Environmental Protection Agency ("EPA"), DHS reduced the perchlorate action level to 4 ppb. In January, 1999, DHS adopted a regulation identifying perchlorate as an unregulated chemical for which monitoring is required.[20]

The alleged source of perchlorate detected in the Saugus aquifer is a facility in the Santa Clarita Valley known as the former Whittaker-Bermite facility.[21] Perchlorate has been detected in four wells in the

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20 "Unregulated" refers to the absence of a drinking water standard, or maximum contaminant level ("MCL"). DHS has advised water utilities about required and recommended actions to be taken if the "action level" is exceeded, including notices to local agencies and water utility customers. For further information regarding DHS action related to perchlorate, please refer to DHS's internet website located at http://www.dhs.cahwnet.gov/, and, specifically, http://www.dhs.cahwnet.gov/ps/ddwem/chemicals/perchl/actionlevel.htm.

21 Please refer to Plate 1 in the report prepared by Richard C. Slade & Associates entitled, *Hydrogeologic Conditions in the Saugus Formation, Santa Clarita Valley, California*, February 2001. The report may be found in **Appendix 2.5 to the Draft Additional Analysis (April 2001).**

eastern part of the Saugus aquifer, near the former Whittaker-Bermite facility. It has been suggested that the detection of perchlorate in the Saugus aquifer dramatically limits its usefulness as a local water supply source and that reports prepared by the water purveyors "overestimate" groundwater supplies by not properly accounting for perchlorate detected in certain wells in the Saugus aquifer. As discussed below, the water purveyors in Santa Clarita Valley have reported the existence of perchlorate in the Saugus aquifer for several years, and, based on the information provided below, the Saugus aquifer remains an important and viable groundwater resource for the Santa Clarita Valley. Due to the high value of this local water resource, the purveyors have placed a high priority on replacing the impacted groundwater extraction capacity by installing wellhead treatment and the construction of new wells.

The CLWA Integrated Water Resources Plan ("IWRP"), dated February 1998, the 1998, 1999, 2000 and 2001 Santa Clarita Valley Water Reports and the UWMP 2000 have disclosed that perchlorate was detected in certain specified wells in the Saugus aquifer. Since 1997, groundwater samples have been collected from at least 12 municipal-supply water wells in the Saugus aquifer for purposes of conducting laboratory testing for perchlorate. Based on laboratory test results, and additional information obtained by the water purveyors, four Saugus Formation municipal-supply wells located near the Whittaker-Bermite facility have been voluntarily placed on inactive status due to perchlorate detection. The eight other Saugus wells in the area are active and available for use.

The testing of the impacted municipal-supply wells has occurred over time. For example, testing of Newhall County Water District ("NCWD") Well No. 11 showed perchlorate concentrations ranging between 9.9 and 23 ppb between May 1997 and October 2000. This well is currently on inactive operational status, and NCWD has voluntarily refrained from using the well since 1998. The testing of Valencia Water Company ("VWC") Well No. 157 between 1997 and 2000 also showed perchlorate concentrations ranging from not-detected to 14 ppb. This well is also currently on inactive operational status, and VWC has voluntarily refrained from using the well since 1997. Finally, the testing of Santa Clarita Water Division of CLWA's ("SCWD") Saugus-1 and Saugus-2 wells in 1997 and 1998 revealed perchlorate concentrations ranging from 16 and 42 ppb in Well 1, and 12 and 45 ppb in Well 2. Neither of these two wells is currently being pumped.

Results of ongoing laboratory testing of all other active Saugus Formation municipal-supply wells have shown non-detect concentrations of perchlorate. VWC Well Nos. 201, 205 and 160 were sampled and analyzed for perchlorate in the third quarter of 2000, with both samples returning not-detected results. NCWD's Saugus Formation water wells were all tested for perchlorate in October 2000, with all samples returning not-detected results. Slade has reported that the Saugus aquifer is and will continue to be a

viable source of water supply for the water purveyors in the Santa Clarita Valley as long as efforts remain in place to treat impacted wells on an interim basis to contain the plume.

As to groundwater production, the recent voluntary closure of four of the 12 Saugus municipal-supply wells is due, in part, to caution related to perchlorate; however, the water purveyors have limited their use of the Saugus aquifer for other significant reasons as well. For example, because the Alluvial aquifer remains essentially full, the water purveyors are pumping water from wells in the shallower Alluvial aquifer because the water is readily available, and because it costs less to pump water from the Alluvial wells when compared to pumping from the deeper Saugus aquifer. In addition, SWP water is now available to all local purveyors, making this imported water supply more readily available than in the past. The local water purveyors also have developed an overall strategy of maintaining the Saugus aquifer as a firming supply for drought years in the event SWP supplies are curtailed.

In addition to the water purveyors' strategy regarding groundwater production from the Saugus aquifer, in November 2000, CLWA, NCWD, SCWD and VWC filed suit against the current and prior owners of the former Whittaker-Bermite facility. The lawsuit requests that the current and prior owners pay all necessary costs of response, removal of the perchlorate contaminant, remediation action costs and other damages associated with the contamination. Under federal and state law, the current and prior owners of that facility have the responsibility for the clean-up activities and costs.

In 2002, CLWA and the U.S Army Corps of Engineers also entered into an agreement to assess groundwater conditions in the Saugus Aquifer within the Eastern Santa Clara Basin. Funded by a $7 million appropriation from the federal Government, $4 million of which has been earmarked for groundwater investigations related to perchlorate contamination in the Santa Clarita Valley, with matching funds from CLWA, the purpose of the study is to sufficiently characterize the condition of the Whittaker-Bermite site and evaluate long-term and interim solutions for clean-up of the contaminated soil and groundwater. The groundwater study will be implemented pursuant to Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and related Federal regulations. [22]

Other studies regarding the nature and extent of the perchlorate in the Alluvial and Saugus aquifers have already commenced n addition, the local water purveyors continue routine sampling of the existing wells. CLWA's board of directors recently approved a project to perform pre-design services for treatment of groundwater to contain the perchlorate plume.

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22 CERCLA is found at Title 42 USC Section 9601 at sec. Related Federal regulations are also found at 40 CFR Part 300.

The current studies are still in their initial stages; however, based on the study results to date, there is no indication that perchlorate has impacted more than the original four Saugus water supply wells. Concentrations of perchlorate have been detected in Alluvial monitoring wells near the Whittaker-Bermite site boundary and in shallow groundwater under the Saugus Metrolink site, but there is no evidence that these impacts have the potential to impact Alluvial and Saugus water supply wells.

In addition, CLWA and the other retail water purveyors in the Santa Clarita Valley plan to pursue clean-up activities at the specified well sites using treatment technologies that have been approved by the Department of Health Services. As discussed below, in the past few years, much progress has been made in developing treatment methods capable of removing perchlorate from groundwater supplies.

Perchlorate Treatment Technology. Effective technologies presently exist to treat perchlorate in water in order to meet drinking water standards. In a publication from the U.S. Environmental Protection Agency ("EPA"), *Region 9 Perchlorate Update*, June 1999,[23] the EPA discussed the current state of perchlorate treatment technology, and the current and planned treatment development efforts being carried out as part of U.S. EPA 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 EPA also summarized two of the technologies that are in use today, which are capable of removing perchlorate from groundwater supplies. Each technology is discussed below, along with a brief summary of the specific application of each method used to remove perchlorate from groundwater supplies in the San Gabriel Valley.

Ion Exchange Method. The first of the two perchlorate-removal technologies receiving the most attention is ion exchange, in which the perchlorate ion is replaced by chloride, a chemically similar but nontoxic ion. Ion exchange processes have been used in homes and businesses for water softening for decades. Bench- and pilot-scale studies have demonstrated that ion exchange systems can reliably reduce perchlorate concentrations in San Gabriel Valley groundwater from approximately 75 ppb to below detectable levels. The studies have also provided valuable information on resin selection and regeneration, brine production, and cost that will guide the design and operation of full-scale systems.

The ion exchange treatment method has been approved by DHS for use in the San Gabriel Basin. In February 2001, DHS approved La Puente Valley County Water District's ("LPVCWD") application to amend its domestic water supply permit. After considering a detailed engineering report, and overseeing

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[23] *See*, EPA Internet website, Perchlorate, and Region 9 Perchlorate Update, found at http://www.epa.gov/ogwdw/ccl/perchlor/perchlo.html.

a pilot program, DHS granted LPVCWD's application to amend its domestic water supply permit, and to operate two existing domestic water supply wells in the San Gabriel Basin for purposes of treating perchlorate-contaminated water from the wells and providing the treated water to its customers for drinking and other domestic uses.[24]

LPVCWD's water treatment facility consists of pumping and treating perchlorate contaminated groundwater from two of its domestic-use wells. An ion separation ("ISEP") unit will be used to remove the perchlorate. The ISEP process involves an ion exchange resin that is used to remove the perchlorate from the groundwater. The resulting perchlorate brine from the District's wellhead will be discharged from an existing line to either a new pipeline or the sanitary sewer system after obtaining appropriate permits from local agencies. The treatment has been demonstrated to produce final treated water to non-detect contaminate levels.

Biological Treatment Methods. To date, considerable effort has been directed at developing biological treatment methods for removing perchlorate from groundwater. In the biological treatment process, microbes destroy perchlorate by converting the perchlorate ion to oxygen and chloride. In most cases, nutrients must be added to sustain the microbes. Microbes have been used for decades in the treatment of drinking water supplies as part of a process known as slow sand filtration.

A six month pilot-scale study of a biological process has been completed for the San Gabriel Basin, demonstrating the reduction of perchlorate from approximately 75 ppb to below detectable levels. The same process is being used in a recently constructed full-scale system at the Aerojet site in Northern California, where perchlorate concentrations exceed 1,000 ppb. A biological process also has been used to treat perchlorate-contaminated wastewaters resulting from the manufacture and maintenance of rocket motors, where perchlorate concentrations may exceed 500,000 ppb.

Biological treatment methods are believed to be capable of producing potable water, but additional testing must be completed to determine whether a biological process can reliably and cost-effectively produce drinking water-quality water. However, the necessary tests are planned for later this year, when a biological treatment system designed to produce potable water for use in the San Gabriel Valley will be in operation.

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24 A copy of LPVCWD's Water Permit Amendment (No. 04-16-01 PA-000), dated February 15, 2001, along with the engineering report and other information are provided in **Appendix 2.5 to the Draft Additional Analysis (April 2001).**

The San Gabriel Valley project involves the installation of not only the ion exchange technology to remove perchlorate, but also a second groundwater treatment system utilizing a biological process to remove perchlorate. The biological treatment train system will be constructed at LPVCWD's well site and will initially be used to demonstrate the ability to biologically reduce perchlorate concentrations using microbes. The biological treatment system will consist of a bioreactor to remove perchlorate, followed by a standard multi-media filter, followed by UV/hydrogen peroxide (oxidation) to lower contaminant concentrations to comply with DHS drinking water standards. The treated water will flow through Granular Activated Carbon ("GAC") pressure vessels to "polish" the treated water to ensure that all contaminants are removed. The fully-treated water will then be disinfected.

During the demonstration, all water treated by the biological treatment system will be discharged in compliance with an NPDES permit, which will be obtained from the Regional Water Quality Control Board. After the demonstration phase, a permit will be requested from DHS to provide the full-treated water to LPVCWD's customers. Following receipt of the DHS permit, the biological treatment train system will continue to operate and provide fully-treated water to LPVCWD customers. As part of the biological treatment system, ethanol will be stored on-site and used to foster microbial growth. A permit will be obtained from the local agency to store the ethanol on-site.

Biological treatment methods are new to many water utilities. However, biologically-active filters have been used in drinking water treatment for decades to help remove particles and biodegradable organic matter. As stated above, the San Gabriel Valley project will rely on biological treatment for primary perchlorate removal, and is expected to include GAC as a backup process capable of limited perchlorate removal.

Other Treatment Methods. Other technologies have also been demonstrated as capable of removing perchlorate, but probably at higher cost. Reverse osmosis and nanofiltration were tested by researchers at the Metropolitan Water District of Southern California and shown to be effective in removing perchlorate, but they are likely to be much more expensive to operate than ion exchange processes. Liquid phase GAC also removes perchlorate, but only for a limited period of time before regeneration or replacement of the carbon is required. Frequent carbon replacement would make relying solely on GAC for perchlorate removal very expensive. Perchlorate cannot be removed from water by conventional filtration, sedimentation or air stripping technologies.

In addition to the proven treatment methods, a U.S. patent was recently granted for a new treatment device that reportedly renders perchlorate harmless. The device is a hollow-fiber membrane biofilm reactor, that, through a natural biochemical process of electron transfer, turns perchlorate into innocuous

chloride. Perchlorate contaminated water is run through the biofilm reactor, which contains a bundle of thousands of hollow fiber membranes into which hydrogen gas is fed. The hydrogen gas diffuses through the membrane walls into the water as it flows past the fibers. Bacteria attach to the surface of the membrane because they gain energy from the process of transferring electrons and act as catalysts for the transfer of electrons from hydrogen gas to the oxidized contaminant, such as perchlorate. The contaminants are reduced to harmless end products while the hydrogen gas is oxidized to water.

The advantage of the biofilm reactor method over existing methods is that it destroys the contaminant without creating brine or other waste products, which must then be disposed of. The creators of the biofilm reactor device have embarked on a pilot study of the treatment method in La Puente, California, treating groundwater that is highly contaminated with perchlorate. Results of the study have shown that the biofilm reactor can effectively treat 0.3 gallons of water per minute. The current research is supported by a grant from the U.S. Environmental Protection Agency and administered by AWWARF.

In the coming year, the results of perchlorate treatment research funded by a $2 million Federal appropriation to the AWWARF will be available. AWWARF is funding studies into biological treatment methods, ion exchange, reverse osmosis, nanofiltration and other processes. The result of the AWWARF research should allow more efficient design and operation of the ion exchange and biological treatment processes, and may identify other technologies capable of cost-effectively removing perchlorate from water.

Summary. Due to the high value of this local water resource, the purveyors have placed a high priority on replacing the impacted groundwater extraction capacity by installing wellhead treatment and the construction of new wells. The "best" technology for removal of perchlorate will probably vary from site to site. At this time, however, ion exchange and biological treatment systems have been approved for construction and operation in the San Gabriel Valley. The San Gabriel Valley project will continue to provide cost and performance data over the years that will be available to other water utilities for other sites. The results from recent and ongoing studies will also be of use to water utilities in need of reliable, easy-to-operate treatment methods that can reduce perchlorate concentrations to low or non-detectable levels.

Other Water Contaminants. Water quality regulations are constantly changing as contaminants that are not typically found in drinking water are being analyzed by DHS and U.S. EPA. In addition, existing water quality standards are becoming more stringent in terms of allowable levels in drinking water.

Hexavalent Chromium. Over the past year, hexavalent chromium (chromium 6) has become an important new water quality concern in southern California. In a letter dated March 27, 2001 DHS asked the California Environmental Protection Agency to establish a specific public health goal (PHG) for chromium 6. The PHG would formally identify a level of chromium 6 in drinking water that does not pose a significant human health risk. DHS has adopted regulations adding chromium 6 to the list of unregulated chemicals requiring monitoring, effective January 3, 2001. The regulations require drinking water systems to monitor for unregulated chemicals for which drinking water standards have not been established. The objective of the regulations is to collect data throughout the state to determine the occurrence of these chemicals to help DHS make regulatory decisions that will adequately protect public health.

DHS currently regulates chromium in drinking water as total chromium. DHS' drinking water standard for total chromium is 50 parts per billion (ppb). Total chromium is comprised of chromium 3 and chromium 6. Both are naturally occurring and are found in groundwater. Chromium 3 is an important dietary supplement necessary for public health. While chromium 6 is a known occupational carcinogen through inhalation, scientists differ over the potential health effects posed when consumed in water. Due to the level of public concern about chromium 6, the DHS regulations were adopted on an emergency basis to expedite monitoring for this chemical. All drinking water systems with sources determined by DHS to be vulnerable to chromium 6 must monitor to enable DHS to determine both its occurrence and the proportion of chromium 6 in the "total chromium" level.

The retail water purveyors in the Santa Clarita Valley have implemented a monitoring schedule in compliance with these regulations. Preliminary scanning samples taken throughout the Santa Clarita Valley have shown trace levels (<1 ppb) of chromium 6. These levels are likely attributed to naturally occurring chromium in the rocks and soil. For further information, please refer to the following DHS website, http://www.dhs.ca.gov/ps/ddwem/chemicals/Chromium6/Cr+6index.htm.

MTBE. Additional water quality regulations have been promulgated and/or revised over the past year. For example, MTBE (methyl-tertiary butyl ether) has been a concern for the past few years, and on May 17, 2000, DHS adopted a primary maximum contaminant level (MCL) for MTBE of 0.013 mg/L. CLWA and the local water purveyors have been testing for MTBE since 1997, and, to date, have not detected it in any of the production wells or in the treated SWP water supplies.

(c) *Summary of Local Groundwater Supplies*

In summary, **Table 2.5-9**, shows the existing and projected groundwater supplies from the Alluvial and Saugus aquifers. The groundwater projections are from the UWMP and the updated analysis by Slade (UWMP 2000, Appendix C).

Table 2.5-9
Existing and Planned Groundwater Supplies[1]
(acre-feet per year)

Source	Average/Normal Year	Dry-Year
Alluvial Basin	30,000 - 40,000	30,000 - 35,000
Saugus Formation	7,500 - 15,000	11,000 - 15,000
Saugus Formation (new wells)*		10,000 - 20,000
Total Supply:	37,500 - 55,000	51,000 - 70,000

Source: UWMP 2000.
[1] Studies by Richard Slade & Associates in October 2000 (UWMP Appendix C).
** Planned program for future implementation pursuant to the UWMP 2000. According to the UWMP 2000, prior to implementing increases in production from groundwater supplies, CLWA will analyze the feasibility, cost and potential water quality and environmental effects of such a program. However, according to the UWMP 2000, preliminary analyses and recent studies have concluded that additional pumping can be carried out.*

2.5.4.3 Reclaimed Water Supplies

Water reclamation (or recycling) is defined as the treatment and disinfection of municipal wastewater to provide a water supply suitable for non-potable reuse (e.g., landscape irrigation). Under specified conditions, the state now requires the use of reclaimed water when available. (*See*, Senate Bill 2095 (Johnston) and Government Code Section 65602 relating to water recycling.) Section 65602 states in part:

"(a) The waters of the state are of limited supply and are subject to ever-increasing demands.

(b) The continuation of California's economic prosperity is dependent on adequate supplies of water being available for future uses.

(c) It is the policy of the state to promote the efficient use of water through the development of water recycling facilities.

(d) Landscape design, installation, and maintenance can and should be water efficient.

(e) The use of potable domestic water for landscaped areas is considered a waste or unreasonable use of water within the meaning of Section 2 of Article X of the California Constitution if recycled water is available that meets conditions described in Section 13550 of the Water Code."

Section 65605(b) also requires that a local agency adopt a recycled (or reclaimed) water ordinance that will:

> "[s]tate that it is the policy of the local agency that recycled water determined to be available pursuant to Section 13550 of the Water Code shall be used for non-potable uses within the designated recycled water use area set forth by the local agency when the local agency determines that there is not an alternative higher or better use for the recycled water, its use is economically justified, and its use is financially and technically feasible for projects under consideration by the local agency."

Reclaimed water is available for use in the Santa Clarita Valley from two existing WRPs operated by the County Sanitation Districts of Los Angeles County, the Saugus WRP, located in District 26 and the Valencia WRP, in District 32.

CLWA is currently in the process of updating its draft *Reclaimed Water System Master Plan* (Master Plan) (Kennedy Jenks Consultants, 1993). The purpose of the Master Plan was to evaluate and plan for the use of reclaimed water as a reliable water source to meet a portion of the non-potable water demand in the Santa Clarita Valley. The Master Plan outlined a multi-phase program to deliver reclaimed water to the valley totaling 10,000 acre-feet. CLWA's reclaimed water supply is projected to be 1,700 acre-feet per year by 2003. Projections in the UWMP show a total reclaimed water supply of 17,000 acre-feet by the year 2020. This amount is in addition to the reclaimed water originating at the Newhall Ranch WRP.[25]

Reclaimed Water Demand. The Master Plan identified potential reclaimed water users with existing and future demands totaling 10,361 acre-feet per year. Of the total demand, 1,215 acre-feet per year of demand is outside the CLWA service area.

Since reclaimed water is used for non-potable purposes such as landscape irrigation, demand for reclaimed water follows a highly seasonal pattern. Reclaimed water demand is generally low during wet winter months and increases dramatically during hot, dry summer months to meet greater irrigation requirements. For the annual demand of 10,361 acre-feet per year identified in the Master Plan, the total peak monthly demand is 1,922 acre-feet and the total peak daily demand is 20.5 mgd.

In addition to the reclaimed water demand identified in the Master Plan, if the proposed Newhall Ranch development is approved, the non-potable water demand in the CLWA service area could increase by 9,035 AFY (Newhall Ranch non-potable demand). The peak monthly non-potable demand for Newhall

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25 *See*, UWMP 2000, page 2-9. *See also*, CLWA's draft *Reclaimed Water System Master Plan* (Kennedy Jenks Consultants, 1993), which is incorporated by reference and available for public review at the County of Los Angeles, Department of Regional Planning, Lee Stark, 320 W. Temple Street, Room 1346, Los Angeles, California 90012 (213) 974-6467.

Ranch has been estimated to be 1,275 acre-feet (approximately 13.8 mgd). Assuming re-approval of the Newhall Ranch Specific Plan, the total non-potable water demand within the CLWA's service area is expected to reach approximately 19,396 acre-feet per year. This demand will be highly seasonal, with peak demands during summer months when the weather is hot and dry and irrigation needs are greatest.

Table 2.5-10, below, summarizes the reclaimed water demands.

Table 2.5-10
Reclaimed Water Demand

Item	Annual Demand (acre-feet per year)	Peak Monthly Demand (acre-feet)	Peak Demand (acre-feet)	Daily mgd
Within CLWA Service Area[a]	9,146	1,690	55.6	18.00
Outside CLWA Service Area[a]	1,215	233	7.5	2.45
Newhall Ranch[b]	9,035	1,275	42.5	13.81
Total	19,396	3,198	105.6	34.26

[a] From *CLWA Reclaimed Water Master Plan*, September 1993
[b] From *CLWA Integrated Water Resources Plan, Water Demand and Supply Evaluation*, February 1998; *Technical Memorandum, Update to: Addendum to Water Resources and Wastewater Management for the Newhall Ranch Project*, January 18, 1999, CH2MHILL.
Source: UWMP 2000.

Reclaimed Water Supplies. The two existing WRPs in the Santa Clarita Valley that can potentially supply reclaimed water to meet the identified non-potable water demands in the CLWA service area are the Valencia WRP and the Saugus WRP. A third plant has been proposed as part of the Newhall Ranch Specific Plan.

Due to site space constraints, the Saugus WRP, completed in 1962, will not be expanded beyond its current permitted capacity of 6.5 mgd. In 1999, the Saugus WRP had an average effluent flow of 5.62 mgd (6,294 AFY), which is approximately 86 percent of its design capacity. Effluent from the Saugus WRP contains about 723 milligrams per liter TDS (total dissolved solids) and is discharged to the Santa Clara River west of Bouquet Canyon Road (UWMP 2000).

The Valencia WRP, completed in 1967, has a current permitted capacity of 13.5 mgd. The ultimate planned capacity for the Valencia WRP is 22 mgd. In 1999, the average effluent flow for the Valencia WRP was 10.44 mgd (11,693 AFY), which is approximately 77 percent of its current design capacity. Effluent from the Valencia WRP contains approximately 753 milligrams per liter TDS (total dissolved solids) and is discharged to the Santa Clara River west of The Old Road (UWMP 2000).

The Newhall Ranch Specific Plan proposes a 6.9 mgd WRP on the Newhall Ranch site to exclusively serve the Specific Plan. The proposed Newhall Ranch WRP would be located near the western edge of the Specific Plan site along the south side of SR-126. Effluent from the proposed Newhall Ranch WRP would be used to partially meet non-potable water demands within the Specific Plan site. According to the Newhall Ranch Final EIR, the proposed WRP is projected to produce on average approximately 5,630 AFY. Of this amount, 5,344 AFY would be used for irrigation, with the remaining 286 AFY discharged to the Santa Clara River during winter months when demands are low. This supply is projected to meet approximately 59 percent of the 9,035 AFY of potential non-potable water demands for the Specific Plan. The remainder of the non-potable demand is expected to be met by reclaimed water from CLWA, consistent with its updated Reclaimed Water System Master Plan.

Table 2.5-11 summarizes CLWA's reclaimed water supplies:

Table 2.5-11
Reclaimed Water Supplies

	Current Capacity (mgd)	Ultimate Capacity (mgd)	Flow (1999)		TDS (mg/l)
			mgd	acre-feet	
Saugus WRP	6.5	6.5	5.62	6,294	723
Valencia WRP	13.5	22	10.44	11,093	753
Total	20	28.5	16.06	17,987	--

Source: UWMP 2000.

2.5.4.4 Imported SWP Water Supplies

(a) SWP Overview

In 1951, the California Legislature authorized construction of a large state water storage and delivery system.[26] Eight years later, in 1959, the Legislature authorized the submission for voter approval of a $1.75 billion general obligation bond issue to build the State Water Project ("SWP") system. The voters approved the measure, which enabled DWR to commence construction of the SWP.[27]

The DWR operates and manages the SWP facilities.[28] The SWP is the largest state-built, multi-purpose water project in the country. The SWP was designed and built to deliver water, control floods, generate power, provide recreational opportunities and enhance fish and wildlife habitats. SWP water supplies

26 *See*, DWR, Bulletin No. 132-95 (Nov. 1996) p. xxiii; DWR Bulletin No. 132-98 (Nov. 1999) p. xxvii-xxxv.

27 *See*, Wat. Code §12930 *et seq.*; DWR, Bulletin No. 132-93 (Sept. 1994) p. 15.

28 *See*, DWR, Bulletin No. 132-93, (Sept. 1994) p. 15.

are used for both urban and agricultural uses throughout California. The SWP facilities consist of a complex system of dams, reservoirs, power plants, pumping plants, canals and aqueducts to deliver water.[29]

At the inception of the SWP, DWR entered into individual water supply contracts with agricultural and urban water suppliers (SWP contractors) throughout California. The contracts were the method used to fund construction and operation of the SWP facilities for the delivery of water to the SWP contractors. Each such contract sets forth a maximum annual entitlement of SWP water, which is stated in Table A to the contract ("Table A entitlement").

There are currently 29 SWP contractors with water supply contracts with DWR. A SWP contractor may annually request that DWR deliver water in the following year in any amount up to the SWP contractor's Table A entitlement. The SWP contracts provide that in a year when DWR is unable to deliver the full amount of contractor requests, deliveries to contractors will be reduced so that total deliveries equal total available supply for that year. Some SWP contractors, including CLWA, historically have never requested delivery of their full annual entitlement because lower growth, other water supplies and water conservation efforts have held their demand below projections. Other SWP contractors historically have ordered their full Table A entitlement nearly every year.

Existing long-term SWP water supply contracts call for the annual delivery of 4,103,651 acre-feet of entitlement water by 1997 through SWP facilities, gradually increasing to a maximum of 4,172,686 acre-feet by 2020. Actual demand, however, has not developed as projected, owing to circumstances, which have changed since the long-term contracts were signed in the 1960s. The changes include slower population growth, changes in local land use, local water conservation programs and conjunctive-use programs. The most SWP entitlement water delivered to date (1999) in any year was about 3.1 million acre-feet in 1989. The demands for SWP water are expected to increase as the population of California continues to increase.[30]

(b) Monterey Agreement

By 1994, disputes arose among the many agricultural and urban SWP contractors and DWR regarding the availability and distribution of water through SWP facilities. To avoid potential litigation, DWR and agricultural and urban SWP contractors met in Monterey, California to attempt to resolve the ongoing disputes. After negotiations, DWR and the agricultural and urban SWP contractors agreed to a statement of principles, which became known as the "Monterey Agreement."

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29 *See*, DWR, Bulletin No. 132-98 (Nov. 1999) p. xxvii

30 *See*, DWR, Bulletin 132-98 (Nov. 1999), p. xxvii.

The Monterey Agreement, signed by DWR and many of the agricultural and urban SWP contractors in 1994, established principles to be incorporated in contract amendments (the Monterrey Amendments) to be offered to the SWP contractors. To date, all but two SWP contractors (Plumas County Flood Control and Water Conservation District and Empire West Side Irrigation District) have accepted the amendments. The amendments have three primary objectives: (i) to increase the reliability of all SWP contractors' water supplies; (ii) to stabilize the rate structure in order to improve the financial viability of the SWP; and (iii) to increase water management flexibility for all SWP contractors.

The Monterey Agreement provided a number of water management tools that have allowed local agencies to maximize their use of available supplies, thus meeting increased demand without construction of new SWP facilities. Most of these tools are environmentally beneficial or neutral. They include:

(a) **Water Transfers.** SWP contractors can transfer unneeded entitlement to other contractors on a permanent basis. This provides financial relief from SWP charges for the seller and additional water supplies for the buyer.

(b) **Turnback Pool.** SWP contractors with unneeded supplies on a short-term basis can turn their water back into a pool for purchase by other contractors.

(c) **Storage Outside Service Area.** SWP contractors are permitted to store water outside their service area (for example, in a groundwater banking project) for later use within their service areas.

(d) **Terminal Reservoirs.** SWP contractors are permitted to utilize flexible storage in Castaic Lake and Lake Perris to enhance their water supply reliability.

(e) **SWP Allocation.** Allocation of available SWP supply is made based on the proportion of each contractors' entitlements, rather than historical use with agricultural SWP contractors being cut first as in the past. This provides additional reliability to agricultural contractors earlier in the year, which improves their planning capability.

(f) **Interruptible Water.** Interruptible water (available surplus water) is distributed on an equal basis among SWP contractors rather than to agricultural SWP contractors first.

(g) **Flexibility.** Additional flexibility is granted to SWP contractors wishing to increase or decrease the entitlement amounts in their contracts.

(h) **Banking.** The Kern Water Bank was transferred to SWP agricultural users for development and use. This transfer has provided agricultural users as well as other local agencies with additional flexibility and water supply reliability.

Non-Project Water. Use of project facilities for conveyance of non-project water is permitted to assist SWP contractors, which are able to locate additional sources of water.

As stated above, the Monterey Agreement has facilitated water transfers among SWP contractors. These water transfer provisions have resulted in 130,000 acre-feet of agricultural SWP contractors' entitlement being available for sale to urban SWP contractors. Agreements already have been executed among contractors to purchase the additional entitlement from the agricultural SWP contractors. Agreements for the additional entitlement of SWP water are effective upon execution (DWR Bulletin No. 132-96, August 1997, Ch. 1, p.5), and, therefore, are considered permanent water reallocations of SWP Table A entitlement. These permanent transfers of SWP entitlement have allowed urban SWP contractors to obtain additional SWP Table A entitlements, thereby increasing their overall deliveries, even in times of drought. The permanent transfers of SWP entitlement have also allowed SWP urban contractors to increase the reliability of their deliveries by having more entitlement available overall.

The DWR now has approximately eight years of experience in implementing the Monterey Agreement and the associated water management tools identified above. The SWP contractors have come to rely on the Monterey Agreement water management tools and other provisions in their planning activities. Some of the results to date include:

(a) Up to 200,000 acre-feet transferred annually in the Turnback pool program;

(b) Nearly 100,000 acre-feet transferred in permanent entitlement transfers;

(c) Nearly 1,000,000 acre-feet stored outside SWP contractors' service areas;

(d) Utilization of terminal reservoirs' flexible storage; and

(e) Delivery of up to 200,000 acre-feet annually in Interruptible water (available surplus water).

(c) Monterey Agreement Environmental Review and Litigation

The Monterey Agreement gave rise to potentially significant environmental effects requiring analysis under the California Environmental Quality Act. Therefore, a Program EIR was prepared to address the potentially significant environmental effects of implementing the Monterey Agreement. The Final Program EIR was certified in October 1995. The adequacy of the Final EIR was challenged in litigation arising under the California Environmental Quality Act. The Sacramento Superior Court upheld the adequacy of the EIR. Before and after the trial court's decision, DWR and the agricultural and urban SWP contractors who had executed the Monterey Agreement began implementing various amendment provisions, including the completion of permanent transfers of Table A entitlement among agricultural and urban SWP contractors. The trial court's decision was subsequently appealed. On appeal, the petitioners sought a writ to prevent further implementation of the Monterey Agreement during the

appeal. However, the appellate court denied the requested writ (DWR Bulletin 132-98, November 1999, Ch. 6, p. 2).

The appellate court reversed the trial court's decision. The appellate court held that the Program EIR for the Monterey Agreement was improperly prepared by the Central Coast Water Agency, as "lead agency" under CEQA, rather than by DWR, which should have been the "lead agency." The appellate court also found that the EIR did not sufficiently discuss implementation of a "no project" alternative. The court then concluded that a new EIR must be prepared and certified. Finally, the court held that the trial court improperly dismissed the plaintiffs' challenge to DWR's transfer of title to the Kern Water Bank from DWR to Kern County Water Agency.

The appellate court then remanded the case to the trial court and directed that the trial court issue a writ of mandate vacating certification of the EIR and retaining jurisdiction until DWR certifies an EIR in accordance with CEQA. The appellate court further directed that the trial court consider whether the Monterey Agreement may continue to be implemented while the new EIR is being prepared. (*See, Planning & Conservation League v. Department of Water Resources* (2000) 83 Cal.App.4th 892.)

The appellate court decision invalidated certification of the EIR, but did not set aside, invalidate or otherwise vacate the Monterey Agreement. In addition, no court orders have been issued to "stay" further implementation of the Monterey Agreement.

In October 2000, DWR filed a petition asking the California Supreme Court to review the appellate court decision. The California Supreme Court denied the petition for review and the matter was remanded to the trial court for further proceedings, consistent with the appellate court's decision. The trial court has not issued a final ruling in the action.

In March 2001, the parties to the Monterey Agreement litigation commenced confidential mediation discussions in San Francisco. In a "Joint Statement on the Monterey Amendments Litigation," dated July 18, 2002, the parties to the litigation stated that they "have reached a joint agreement on the principles for settling the lawsuit[.]" The parties also stated that DWR had commenced preparing a new EIR for the Monterey Agreement. Finally, the parties indicated that the mediation effort would continue for the purpose of converting the settlement principles into a legal agreement, which they intended to file with the Superior Court within 60 to 90 days. The joint statement stated that the details of the settlement would be announced once the settlement agreement is final. A copy of the Joint Statement on the Monterey Amendments Litigation, dated July 18, 2002, is provided in **Appendix 2.5(p)** to this report.

(d) Santa Clarita Valley SWP Supplies

CLWA SWP Table A Entitlement. Imported water from the SWP has been a supplemental source of supply to the Santa Clarita Valley since 1980. The SWP is contracted to deliver 4.2 million acre-feet of water per year to 29 contracting agencies. CLWA is a contracting agency with a current annual SWP entitlement of 95,200 acre-feet per year, or about 2.3 percent of the total.

As discussed in other portions of this Additional Analysis, CLWA acquired the additional SWP Table A entitlement when it purchased 41,000 AFY in 1999 from water agencies in Kern County (Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District ("WRMWSD"). This acquisition increased CLWA's SWP Table A entitlement to its present level of 95,200 AFY. The CLWA/WRMWSD water transfer has been completed, CLWA has paid approximately $47 million for the additional entitlement, the monies have been delivered, the sales price has been financed through CLWA by tax-exempt bonds, and DWR has increased CLWA's SWP Table A entitlement because it was a permanent transfer/reallocation of SWP Table A entitlement between SWP contractors.

Prior to completion of the CLWA/WRMWSD water transfer, the proposed transfer was the subject of environmental review by the water agencies. The agencies selling the 41,000 acre-feet of SWP Table A entitlement to CLWA assessed the environmental consequences of the proposed transfer within their service area in a Final EIR, dated June 1998. This EIR was certified in 1998 and has never been the subject of judicial review. As a result, the EIR is conclusively presumed to be valid (Pub.Res.Code §21167.2).

CLWA also prepared a supplemental Final EIR, which assessed the environmental effects of CLWA's acquisition of the 41,000 acre-feet within its service area. The Board of Directors of CLWA certified the Supplemental Final EIR in March 1999. Thereafter, in April 1999, a lawsuit was brought challenging the adequacy of the EIR under CEQA (*Friends of the Santa Clara River, et al. v. Castaic Lake Water Agency, et al.*, Case No. BS 056954). The trial court ruled in favor of CLWA and upheld the adequacy of the EIR under CEQA.

In October 2000, the plaintiffs filed an appeal. As discussed above, the appellate court reversed the trial court's judgment and ordered CLWA's EIR decertified. However, the appellate court did not order CLWA to void its approval of the water transfer. Instead, the appellate court remanded the matter to the trial court for further proceedings. After a hearing on September 24, 2002, the trial court concluded that CLWA could utilize the 41,000 AFY to which it is entitled. For further discussion of that litigation, please see Section 2.5.3.2(a), above.

Status of CLWA's Acquisition Under the Monterey Agreement. The CLWA/WRMWSD transfer of SWP Table A entitlement was the type of water transfer that fell within the provisions of the Monterey Agreement. As stated above, under the Monterey Agreement, certain SWP agricultural contractors agreed that 130,000 acre-feet of their Table A entitlement could be transferred to urban contractors. The CLWA 41,000 acre-feet acquisition was a part of the 130,000 acre-feet of SWP Table A entitlement, which has been transferred under the Monterey Agreement.

In effect, the Monterey Agreement provided a blanket pre-approval for those transfers by the participating SWP contractors, thus facilitating transfers of Table A entitlement from agricultural to urban SWP contractors. As stated above, the environmental documentation for the Monterey Agreement has been decertified. However, the pending legal proceedings have not invalidated the Monterey Agreement or enjoined either the Monterey Agreement or further implementation of the Monterey Agreement.

Even if the Monterey Agreement was invalidated, however, CLWA's permanent acquisition of an additional 41,000 acre-feet of SWP Table A entitlement could occur under existing SWP water supply contract provisions (without the need for the Monterey Agreement). It should be noted that the Kern County Water Agency has reaffirmed its willingness to allow transfers of up to 130,000 acre-feet of SWP Table A entitlement under pre-Monterey Agreement conditions even if the Monterey Agreement is ultimately invalidated.

In addition, the acquisition could proceed as a water transfer under existing law. *See*, e.g., Water Code §§382, 383 (authority for transferring surplus water) and Water Code §§1745, *et seq.* (authority for transferring non-surplus water). Furthermore, nothing in the existing SWP water supply contracts, or applicable law, prohibit such water transfers with or without the Monterey Agreement. The Monterey Agreement simply provides a specific vehicle for accomplishing transfers of SWP Table A entitlement from agricultural to urban SWP contractors; the amendments under the Monterey Agreement are not the exclusive means by which that entitlement may be transferred. In support of that fact, in 1981 (almost 15 years before the Monterey Agreement), the entire SWP Table A entitlement of the Hacienda Water District was permanently transferred to the Tulare Lake Basin Water Storage District, pursuant to an agreement approved by DWR.

Finally, CLWA is not a party to the pending Monterey Agreement litigation (*Planning Conservation League v. Department of Water Resources* (2000) 83 Cal. App.4th 892)). Although not a party, an adverse final judgment invalidating the Monterey Agreement could affect CLWA's completed acquisition of the 41,000 acre-feet, which could in turn impair CLWA's supply of SWP water through its contracts with DWR and other SWP contractors. However, CLWA believes that an adverse outcome in the Monterey Agreement

litigation is not likely to adversely affect CLWA's water supplies over the long-term because: (a) CLWA believes that such a result is unlikely to "unwind" executed and completed agreements with respect to the permanent transfer of SWP water entitlements; (b) existing SWP water supply contract provisions allow such transfers (without the need for the Monterey Agreement); and (c) existing law enables CLWA to enter into contracts outside the context of the Monterey Agreement.

(e) CLWA SWP Deliveries

It has been suggested that CLWA has not received its requests for the delivery of SWP Table A entitlement from DWR over the years. This is not correct.

With limited exception, as shown below, DWR's allocation to CLWA has been 100 percent of CLWA's actual request for SWP water supplies. Based on annual water supply information provided by DWR, there have been only two years on record since 1980 (1991 and 1992) when DWR's delivery to CLWA was not 100 percent of CLWA's requested need. Despite the reduced DWR allocation in those two years, the amount of SWP water delivered to CLWA was sufficient to meet all local water supply needs in the Santa Clarita Valley. **Table 2.5-12,** below, summarizes the DWR's annual SWP supply to CLWA from 1990 to 2000.

Table 2.5-12 includes several important features regarding CLWA's annual water supply since 1990. The features of this table, are discussed below.

The "Entitlement" column represents CLWA's total annual entitlement to the SWP. From 1990 until 1999, CLWA's full annual SWP entitlement was 54,200 AFY. The full annual SWP entitlement of 95,200 AFY, shown in the "Entitlement" column in the year 2000, reflects the permanent acquisition of an additional 41,000 AFY of SWP entitlement in 1999 from the Kern County Water Agency.

The "DWR Allocation" column represents the amount of the entitlement allocated to CLWA by DWR. Note that its has often been the case (e.g., 1995-2000) that CLWA received from DWR an allotment of entitlement far in excess of its actual need. Consequently, CLWA turned back (returned) significant amounts of water into the turnback pool (see discussions of these programs in **Section 2.5.4.4(i)** below).

Table 2.5-12
Castaic Lake Water Agency
Annual SWP Water Supply Information
from Department of Water Resources

Year	CLWA Entitlement (AF)	DWR Allocation (%)	Entitlement Allocated (AF)	Imported Water Delivered/ Need (AF)	Percent of Entitlements Allocated (%)
1990	54,200	100%	54,200	21,613	40%
1991	54,200	30%	16,260	7,968	49%
1992	54,200	45%	24,390	13,911	57%
1993	54,200	100%	54,200	13,393	25%
1994	54,200	50%	27,100	14,389	53%
1995	54,200	100%	54,200	16,996	31%
1996	54,200	100%	54,200	18,093	33%
1997	54,200	100%	54,200	22,148	41%
1998	54,200	100%	54,200	20,254	37%
1999	54,200	100%	54,200	27,282	50%
2000	95,200	100%	95,200	32,579	34%
2001	95,200	39%	37,128	35,356	95%
2002(est)	95,200	70%	66,640	42,000	63%

Source: Castaic Lake Water Agency, November 2002.

*1) **CLWA Entitlement:** Represents the total quantity of SWP entitlement under contract by CLWA since 1990. There are 29 contracting agencies with a maximum SWP entitlement totaling 4,172,786 acre-feet. In 1992, CLWA acquired the water supply of the Devil's Den Water District (i.e., its 12,700 AFY contract entitlement). By Year 2000, CLWA had acquired 41,000 AFY of contract entitlement from the Kern County Water Agency and the Wheeler Ridge-Maricopa Water Storage District.*
*2) **DWR Allocation:** Represents the amount of the entitlement allocated to CLWA by DWR. Note that its has often been the case (e.g., 1995-2000) that CLWA received from DWR an allotment of entitlement far in excess of its actual need. Consequently, CLWA turned back (returned) significant amounts of water into the turnback pool (see discussions of these programs in **Section 2.5.4.4(i)** below).*
3) Actual imported water delivered by CLWA in 1991 was 3,846 AF and 11,890 AF in 1992. The difference between these deliveries and the Imported Water Delivered/Need column is the amount of groundwater pumped into CLWA's system during 1991 and 1992.
***Other observations:** In 1994, CLWA deliveries were disrupted by the Northridge Earthquake. The Table does not account for Devil's Den deliveries, flexible storage account balance, transfers to Westlands Water, Flood Flow deliveries, groundwater pumped during the 1991 drought into CLWA's system, etc.*

The "Entitlement Allocated" column is the amount of CLWA's entitlement available for delivery to CLWA in a given year by DWR. Many factors can affect the amount of water delivered by DWR, including environment conditions and weather. The " Imported Water Delivered/Need" column is the actual amount of SWP water required by CLWA to meet local water demand. Since 1990, this amount is typically far less than the Entitlement amounts available to CLWA. These deliveries include not only the entitlement water, but also local groundwater, "Carry-Over," "Interruptible" and "Local Flood Flow Water" supplied by DWR over the years. Had CLWA participated in any "Drought Water Bank" programs, DWR deliveries under such programs would have been reflected in this column as well; however, CLWA has not needed to participate in any of the statewide drought programs due to available local supplies and voluntary conservation programs.

DWR's annual Turnback Pool program has been in place since execution of the Monterey Amendments. The program is an internal SWP mechanism that provides for pooling potentially unused SWP supplies early in the year for purchase by other SWP contractors at a set price. The program is intended as an incentive to return unneeded water early in the year for reallocation among SWP contractors on willing-buyer/seller basis. *See, Critical Water Shortage Contingency Plan*, Governor's Advisory Drought Planning Panel, December 29, 2000, p. 3-11.

Through this program, any SWP water that CLWA deems is not needed in a given year is returned to DWR. This unused water is then made available to the SWP and other SWP contractors. CLWA participated as a "seller" in this program from 1996 through 2000, with over 127,000 acre-feet in sales of unused water. Several other SWP contractors have also returned unused SWP water to DWR, with a 5-year total return of over 1 million acre-feet. Under this program, CLWA could participate as a "buyer," rather than a "seller," in the event additional SWP supplies were needed for storage, water banking projects or other conjunctive use programs.

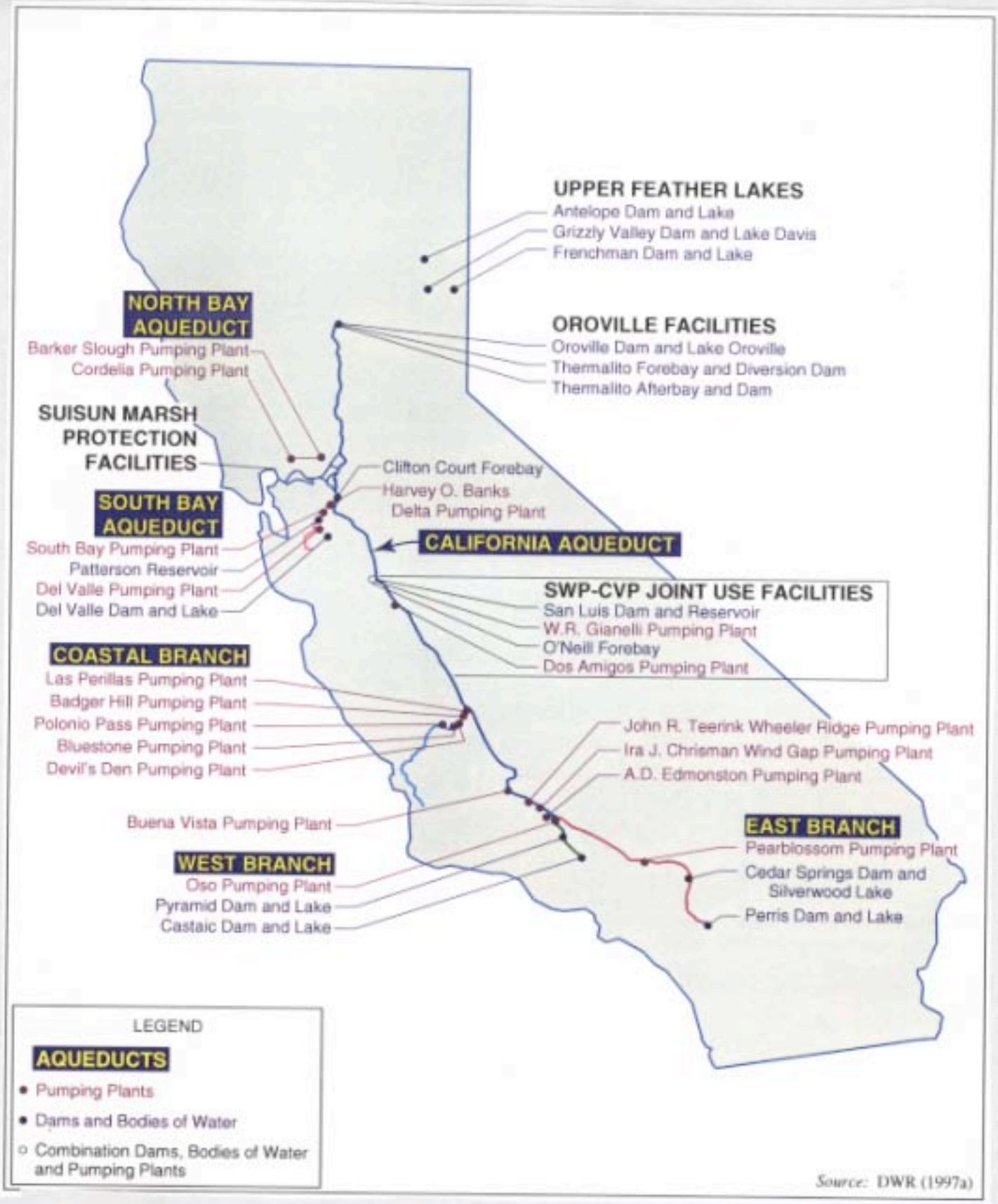
(f) SWP Facilities

As discussed above, the SWP is a large water supply, storage, and distribution system authorized by the California Legislature in 1959. In 1960, California voters approved the $1.75 billion bond issue to begin building SWP facilities. The SWP currently includes 32 storage facilities, reservoirs and lakes, 17 pumping plants, three pumping-generating plants, five hydroelectric power plants, and about 660 miles of aqueducts and pipelines. Principal SWP facilities are shown in **Figure 2.5-17**.

The primary purpose of the SWP is to distribute water to 29 urban and agricultural water contractors in Northern California, the San Francisco Bay Area, the San Joaquin Valley and Southern California. The 29 SWP contractor service areas are shown in **Figure 2.5-18**.

The primary water source for the SWP is within the drainage of the Feather River, a tributary of the Sacramento River. Runoff is stored behind Oroville Dam in Butte County, which is the project's largest storage facility. The water is then released down natural channels to the Sacramento-San Joaquin Delta.

In the southern Delta, water is pumped by the Harvey O. Banks Delta Pumping Plant into the 444 mile-long California Aqueduct. The South Bay Aqueduct, located just south of the Banks Pumping Plant, conveys water to Alameda and Santa Clara counties. Water in the California Aqueduct travels along the west side of the San Joaquin Valley. Some SWP water is stored in the San Luis Reservoir, which is jointly



Source: DWR (1997a)

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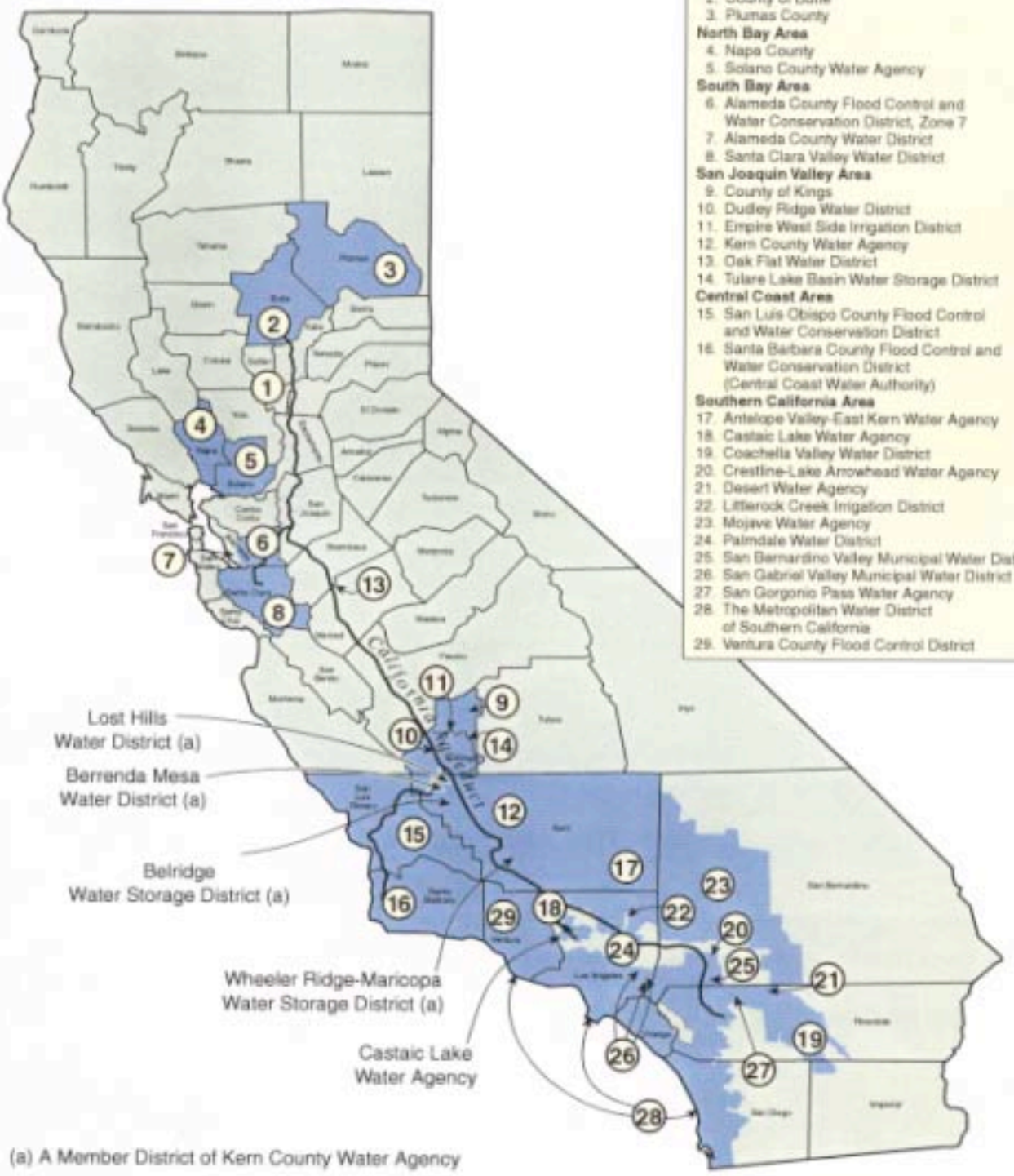
FIGURE 2.5-17
PRINCIPAL STATE WATER PROGRAM FACILITIES



LEGEND

State Water Contractor Service Areas

	Total 1999 Entitlement (AFY)
Upper Feather River Area	
1. City of Yuba City	9,600
2. County of Butte	2,890
3. Plumas County	1,450
North Bay Area	
4. Napa County	15,850
5. Solano County Water Agency	39,170
South Bay Area	
6. Alameda County Flood Control and Water Conservation District, Zone 7	46,000
7. Alameda County Water District	42,000
8. Santa Clara Valley Water District	100,000
San Joaquin Valley Area	
9. County of Kings	4,000
10. Dudley Ridge Water District	53,370
11. Empire West Side Irrigation District	3,000
12. Kern County Water Agency	1,046,730
13. Oak Flat Water District	5,700
14. Tulare Lake Basin Water Storage District	118,500
Central Coast Area	
15. San Luis Obispo County Flood Control and Water Conservation District	25,000
16. Santa Barbara County Flood Control and Water Conservation District (Central Coast Water Authority)	45,486
Southern California Area	
17. Antelope Valley-East Kern Water Agency	138,400
18. Castaic Lake Water Agency	95,200
19. Coachella Valley Water District	23,100
20. Crestline-Lake Arrowhead Water Agency	5,800
21. Desert Water Agency	38,100
22. Littlerock Creek Irrigation District	2,300
23. Mojave Water Agency	75,800
24. Palmdale Water District	17,300
25. San Bernardino Valley Municipal Water District	102,600
26. San Gabriel Valley Municipal Water District	28,800
27. San Gorgonio Pass Water Agency	3,000
28. The Metropolitan Water District of Southern California	2,011,500
29. Ventura County Flood Control District	20,000

(a) A Member District of Kern County Water Agency

Source: DWR 1999a, b

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FIGURE 2.5-18
STATE WATER PROGRAM CONTRACTOR SERVICE AREAS

operated by the DWR and the U.S. Bureau of Reclamation. From the San Luis Reservoir, waters in the SWP continue southward.

SWP water then flows south to the Tehachapi Mountains, where the A.D. Edmonston Pumping Plant lifts the water 1,926 feet to enter 10 miles of tunnels and siphons that traverse the Tehachapi mountains. After crossing the Tehachapis, the aqueduct divides into two branches. The West Branch Aqueduct delivers water to Pyramid and Castaic reservoirs to serve CLWA and other SWP contractors in Southern California. The East Branch Aqueduct flows through the Antelope Valley and delivers water to Silverwood Lake. The water is then transported to San Bernardino and Riverside Counties, and stored in the Lake Perris reservoir.

Many other reservoirs add to the storage capacities of the SWP. **Table 2.5-13**, below, lists the major storage facilities of the SWP and their storage capacity. In addition to the water storage facilities included in the SWP system, additional storage is available within the SWP contractors' service area (e.g., 800,000 acre-feet of storage in the Diamond Valley Reservoir and 300,000 acre-feet in the Los Posas Basin within the service area of the Metropolitan Water District of Southern California).

Table 2.5-13
Major SWP Reservoirs

SWP Division (Location)	Reservoir	Total Storage (AF)
Oroville Field Division		3,762,670
	Frenchman Lake	55,480
	Antelope Lake	22,570
	Davis Lake	64,370
	Oroville Reservoir	3,537,580
	Thermalito Diversion Pool	13,350
	Thermalito Forebay	11,700
	Thermalito Afterbay	57,040
	Small Storage Facilities	580
	Aqueduct Pools	0
Delta Field Division		130,909
	Clifton Court Forebay	31,260
	Bethany Reservoir	5,070
	Lake Del Valle	77,110
	Small Storage Facilities	142
	Aqueduct Pools	17,327
San Luis Field Division (Joint Use)		1,148,967
	O'Neill Forebay (Total Storage = 56,430)	29,500
	San Luis Reservoir (Total Storage = 2,027,840)	1,062,183
	Los Banos Reservoir	34,560
	Little Panoche Reservoir	5,580
	Small Storage Facilities	0
	Aqueduct Pools	17,144
San Joaquin Division		27,541
	Small Storage Facilities	16
	Aqueduct Pools	27,525
Southern Division		979,182
	Silverwood Reservoir	74,970
	Lake Perris	131,450
	Quail Lake	7,580
	Pyramid Reservoir	171,200
	Elderberry Forebay	32,480
	Castaic Lake	323,700
	Castaic Lagoon	5,560
	Small Storage Facilities	1,580
	Aqueduct Pools	230,662
SWP Total		6,049,269
	Reservoirs & Small Storage Facilities	5,756,611
	Aqueduct Pools	292,658

Source: Data Handbook, State Water Project, 1997.

(g) SWP Water Deliveries

SWP Deliveries. In the early 1960s, DWR entered into individual water supply contracts with various agricultural and urban water suppliers or contractors. Each contractor (shown in **Figure 2.5-18**) was provided with entitlement and capacity rights to the SWP aqueduct and storage system in return for payments intended to cover operation and maintenance, bondholder obligations and repayment of moneys loaned from the California Water Fund.

DWR water supply contracts require the SWP to deliver 4.2 million AFY to 29 SWP contractors. Although the SWP is not fully constructed, since the end of the six-year drought in 1992, the SWP has fully met SWP contractors' water needs every year, except the dry year of 1994. Of SWP water deliveries, about 70 percent is delivered to SWP urban contractors and about 30 percent is delivered to SWP agricultural contractors.[31]

From statewide perspective, the maximum capacity of the overall SWP transportation system is generally limited by the capacity of the system pumps. Therefore, the capacity of the California Aqueduct is 10,300 cubic feet per second ("cfs") at its northern end and 4,480 cfs below the Edmonston pumping plant. (1,000 cfs is approximately 82.6 acre-feet per hour, 1,980 acre-feet per day and 725,000 AFY.) If these transportation rates were maintained for a full year, they would result in the transport of approximately 7.2 million acre-feet near the Delta and 3.2 million acre-feet to users in Southern California. Examples of the capacity of the canals and tunnels in the SWP transportation system are shown in **Table 2.5-14**.

Table 2.5-14
Examples of SWP Transportation System Capacity

Location	Facility or Structure	Design Capacity (cfs)
Delta Intake	Clifton Court Forebay Channel	10,300
Near Kings/Kern County Line	SWP Aqueduct Canal	7,300
Grapevine	SWP Aqueduct Canal	4,400
South of the Tehachapis and before the East Branch/West Branch Split	SWP Aqueduct Canal	5,360
West Branch to Castaic Lake	Lower Quail Lake Canal	1,564

Source: Compiled by Impact Sciences, Inc.

SWP Deliveries to CLWA. CLWA is a contracting public agency with a current entitlement of 95,200 AFY. **Table 2.5-12,** above, summarizes the SWP water deliveries to the CLWA service area from 1980 to 2000.

31 *See*, DWR NEWS, State Water Project Plans 100 Percent Deliveries, March 14, 2000, (http://wwwdwr.water.ca.gov/dir-dwr...00R2/Mar.14.00-SWP_Full_Deliv.html).
The DWR annually issues a series of allocation estimates, starting with conservative estimates in early winter months. Estimates are subject to change during the winter and spring months as more rainfall and snowpack data becomes available. DWR conducts five monthly snow surveys each winter and spring to assess snow conditions and make estimates about snowmelt runoff and future water supply. During the last six years, watersheds feeding the SWP have experienced heavy precipitation, which resulted in high volumes of water delivery through the SWP. Deliveries in wet years typically range around 3 million acre-feet. The current delivery projection is much lower than prior years. For example, DWR estimates that the SWP will deliver about 824,000 acre-feet during calendar year 2001. This current delivery projection, although subject to change, is approximately 20 percent of the amount requested by SWP contractors. *See*, DWR NEWS, State Water Project Adjusts Estimates for 2001 Water Deliveries, January 31, 2001, http://www.dwr.water.ca.gov/2001newsreleases/1-31-01.

The local supplies received by CLWA from the SWP are treated, filtered and disinfected at the two existing filtration plants in Santa Clarita Valley. The plants have a current capacity to treat a total of 58 mgd. From the existing plants, the treated water is delivered by gravity throughout the CLWA service area through a distribution network of pipelines and turnouts. One of the existing plants, the Earl Schmidt Filtration Plant, has a current design capacity of 28 mgd. CLWA is currently designing an expansion of the plant's treatment capacity to a total of 50 mgd. In addition, the process performance of the plant is being evaluated and will be improved to assure continuous compliance with state and federal water quality regulations. The expanded plant is scheduled to be on-line by mid-2003. Ultimate plant design planning by CLWA indicates that the combined treatment capacity of the treatment plants would be approximately 180 mgd.

(h) SWP Reliability

The demands of SWP contractors vary from year-to-year depending on many factors, including the amount of winter rains, agricultural markets, the availability (and cost) of other water resources, municipal and industrial demands and environmental requirements associated with the Sacramento-San Joaquin Delta ("Delta"), where the water supplied by the SWP originates. To account for these variable supplies and demands, DWR and the SWP contractors have developed a system that annually allows for the identification of the anticipated demands of each SWP contractor (a request of supply) and the system supplies (a DWR allocation of those supplies). Other water resources (Turnback Pool and Interruptible Water) are available from time-to-time to SWP contractors whose needs are not met by the annual entitlement allocation. The total planned annual delivery capability of the SWP (approximately 4.2 million acre-feet) is distributed by contract among the 29 SWP contractors, based on their respective entitlements. As a result of various factors, the SWP annual deliveries of both entitlement water and non-entitlement water have ranged from approximately 550,000 acre-feet to 2,850,000 acre-feet (DWR 1997b). In 1999, the SWP delivered approximately 3.1 million AFY of both entitlement and non-entitlement water. (UWMP 2000.) The SWP delivered approximately 3.5 million acre-feet of entitlement and non-entitlement water in 2000.[32]

CLWA's current SWP Table A entitlement of 95,200 AFY is affected by a number of factors, including hydrologic conditions, the status of SWP facilities' construction, environmental requirements and evolving policies for the Delta. Because of these factors, SWP supplies are subject to reduction,

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[32] *See*, The State Water Project Delivery Reliability Report, August 2002, Draft, found at http://swpdelivery.water.ca.gov.

particularly during drought periods. The programs listed below have the potential to improve the reliability of SWP water.

Monterey Agreement/Amendments. As discussed above, the Monterey Agreement between DWR and the agricultural and urban contractors provides substantial opportunities for SWP contractors, including CLWA, to increase water management flexibility by providing more tools to maximize the use of existing facilities and, in doing so, increase water supply reliability. The Monterey Agreement changed SWP water allocation rules by specifying that, during drought years, project supplies are to be allocated proportionately based on entitlements. Water is allocated to urban and agricultural purposes on an entitlement proportional basis, deleting a previous initial supply reduction to agricultural contractors. The agreement further defines and permits permanent sales of SWP entitlements and provides for transfer of up to 130,000 acre-feet of annual entitlement from agricultural use to municipal use, of which CLWA has purchased 41,000 acre-feet. The Agreement also allows SWP contractors to store water in another agency's reservoir or groundwater basin, facilitates the implementation of water transfers and provides a mechanism for using SWP facilities to transport non-project water for SWP water contractors. The Agreement provides greater flexibility for SWP contractors to use their share of storage in SWP reservoirs. CLWA currently has access to about 4,700 acre-feet of storage in Castaic Lake.

CALFED Bay Delta Program. The CALFED Bay Delta program is a cooperative State-Federal process with the goal of developing a long-term solution to the many competing water needs of the Sacramento-San Joaquin Bay-Delta. The program is a 30-year, three-phased effort addressing a number of issues including ecosystem quality, water quality, water system reliability and system vulnerability. Implementation of the CALFED improvements over time can significantly improve CLWA's ability to maintain delivery of high quality water and provide needed water supplies during dry years.

Interim Delta Improvements. Potential supply development for the SWP includes interim Delta improvements that involve: (1) south Delta channel enlargements and construction of four barriers to improve south Delta flow circulation; and (2) installation of acoustic fish barriers on the Sacramento River. The interim improvements would enable the use of additional pumps at Banks Pumping Plant when flow conditions are sufficient, and permit the relaxation of certain current operational constraints. It is also anticipated that these improvements would change the Delta fisheries on a positive basis. Therefore, the expected supply yield would improve. Although this solution is considered viable and cost-effective, it does not constitute a permanent solution to the Delta.

Full Delta Fix. As the overall demand for water increases and the need for low-salinity imported water intensifies, a long-term solution to the Delta becomes critical. It is expected that a Delta transfer facility

would provide a long-term solution to Delta problems, increase supply reliability, reduce habitat impacts and improve the water quality of Delta diversions. Goals would be to minimize the effects of the SWP export pumps on Delta fisheries and greatly improve the quality of the exported water.

South of Delta Storage. The potential exists for additional storage south of the Delta. This storage could include both reservoir projects and groundwater banking/conjunctive-use storage. The reliability of the SWP supply would increase significantly, especially during dry years, with the development of south of Delta storage. However, the benefits of the storage would be maximized if a full Delta fix were implemented. As part of the CALFED analysis, approximately 3 million acre-feet of total storage capacity could be implemented south of the Delta.

Figure 2.5-19 and **Table 2.5-15**, below, summarize the variability in SWP supplies available to CLWA by the year 2020 under the following different CALFED improvement scenarios:

(a) **Under Existing Conditions**, based on the DWRSIM model and historical hydrologic conditions, CLWA would receive approximately 37,900 acre-feet about 10 percent of the time (which is considered to be in a dry period) and approximately 56,800 acre-feet about 50 percent of the time (which is considered to be in average/normal rainfall periods).

(b) **Under Interim Delta Improvements**, CLWA would receive approximately 40,200 acre-feet about 10 percent of the time and approximately 73,700 acre-feet about 50 percent of the time.

(c) **Under a Full Delta Fix**, CLWA would receive approximately 63,900 acre-feet about 10 percent of the time and approximately 95,200 acre-feet about 50 percent of the time.

(d) **Under a South of Delta Storage**, CLWA would receive its full entitlement about 50 percent of the time.

Figure 2.5-19
Projected State Water Deliveries
Source: UWMP 2000.

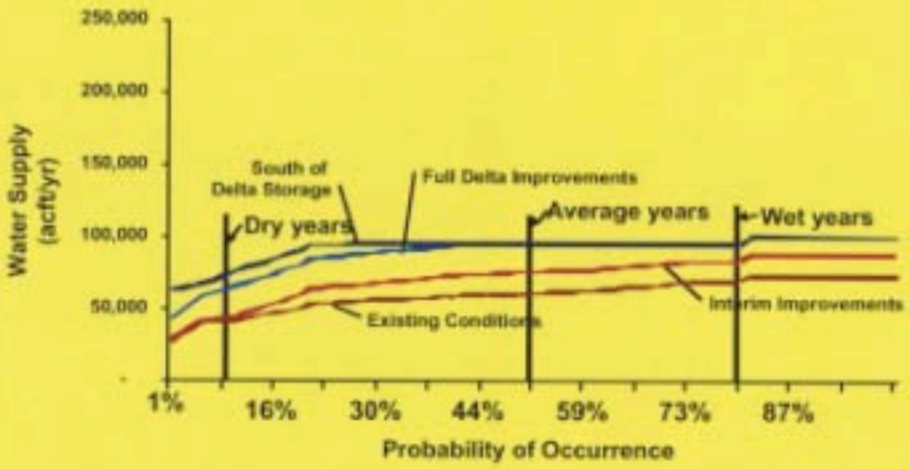


Table 2.5-15
Projected State Water Project Supplies
(acre-feet per year)

	Wet-Year	Average/Normal Year (50% Occurrence)	Dry-Year (10% Occurrence)
Existing Conditions	66,300	56,800	37,900
Interim Delta Fix	82,900	73,700	40,200
Full Delta Fix	95,200	95,200	63,900
South of Delta Storage & Full Delta Fix	95,200	95,200	75,800

Source: Based on DWRSIM modeling (assuming full requests for all contractors).

DWRSIM-Modeling Results. As stated above, the amount of water available to CLWA has been calculated through the use of a computer model, commonly known as the DWRSIM model. This model, developed by DWR, was used to forecast CLWA water supply under various meteorological and land use changes as well as regulatory constraints. The reliability analysis derived from the DWRSIM model generally provides a conservative projection of SWP operations. For example, SWP delivery projections are usually based on *advance* requests reported by SWP contractors. These requests generally overstate the *actual* need for SWP deliveries. Therefore, there is additional SWP water available for actual distribution despite the DWRSIM modeling results shown above. In addition, as a mathematical model, DWRSIM is limited to the amount of water actually requested and does not include water available in excess of requests. Therefore, as noted below, the modeling results should be supplemented with information based on historic availability of additional SWP water supplies. It should be noted that DWR

has prepared a new computer model, known as CALSIM. When compared with DWRSIM, this model generally forecasts that more water will be available in average/normal years and slightly less water will be available in dry years. However, because this new model is presently in draft form only, the analysis presented in this document continues to utilize the DWRSIM model.

Historically, the SWP has delivered water in excess of SWP contractors' requests. From 1962 to 1999, the SWP delivered water in excess of the SWP contractors' requests in all but four years. Based on historical information, it is estimated that there is a 90 percent probability that CLWA would be able to obtain more water than the DWRSIM modeling results suggest -- even without consideration given to the "Delta" improvements called for under the CALFED process (Black & Veatch, February 2001).

Drought Water Bank. Another program with the potential to improve the reliability of SWP water in drought periods is the state's Drought Water Bank. The Drought Water Bank is implemented as needed by an Executive Order by the Governor, or a finding by the DWR's director that water deliveries will be curtailed. The purpose of the Bank is to help California's urban, agricultural and environmental interests meet their water supply needs during dry years. The procedure was used successfully in 1991, 1992 and 1994 when DWR purchased water from willing sellers and sold the water to willing buyers under a set of allocation guidelines. However, in future dry years, the use of the state's Drought Water Bank would have to take into consideration local groundwater management ordinances, which restrict or control groundwater export. The proliferation of these local ordinances makes it less likely that the state's Drought Water Bank would rely on water transfers involving groundwater export in future dry years.

Drought Planning. In addition to the Drought Water Bank, the CALFED Record of Decision (August 28, 2000) called for the Governor to convene a panel, chaired by the DWR director, to develop a contingency plan for reducing the impacts of critical water shortages primarily for agricultural and urban water users. The contingency plan, known as the Governor's Advisory Drought Planning Panel, *Critical Water Shortage Contingency Plan*, December 29, 2000, building upon experience gained from implementing the Drought Water Bank, identifies available water resources (e.g., water transfers, water exchanges, groundwater programs) and funding mechanisms to minimize the impacts created by drought conditions. The plan has been completed, circulated for public comment and finalized.

The contingency plan provides a brief background on California's water supplies and the hydrologic conditions potentially associated with critical water shortages. Chapter 2 describes changed water management conditions since the most recent statewide drought of 1987-1992. Chapter 3 describes the challenges in dealing with critical water shortages given these changed conditions. The challenges include constraints on availability and capacity of conveyance and storage facilities, regulatory

restrictions and uncertainties, competition for limited water supplies among existing water purchasing programs and other identified issues. Chapter 4 presents the panel's recommendations for actions to be undertaken to address critical water shortages.

In the plan, the panel focused on the significant water management changes that have occurred since the statewide drought in 1987-1992. These developments include changes in water demand due to population growth, changes in institutional conditions affecting use of surface water and groundwater, construction of new water supply facilities, legislative changes and pending implementation of CALFED actions.

Since the last statewide drought of 1987-1992, two of the beneficial changes that have occurred in California are the construction of new water supply facilities and an expansion in groundwater recharge/storage capacity. **Table 2.5-16**, below, shows the major water conveyance facilities constructed or under construction since the last statewide drought.

Table 2.5-16
Large-Scale Conveyance Facilities Constructed Since the Last Drought

Facility	Agency	Length (miles)	Maximum Capacity (cfs)
Coastal Branch Aqueduct	Department of Water Resources	100	100
Eastside Reservoir Pipeline	Metropolitan Water District of Southern California	8	1,000
East Branch Enlargement	Department of Water Resources	100	2,100 (this phase increased existing capacity by approximately 750 cfs)
Mojave River Pipeline	Mojave Water Agency	70	94
Old River Pipeline (Los Vaqueros Project)	Contra Costa Water District	20	400
East Branch Extension (under construction)	Department of Water Resources	14	104
Inland Feeder Project (under construction)	Metropolitan Water District of Southern California	44	1,000
Morongo Basin Pipeline	Mojave Water Agency	71	100
New Melones Water Conveyance Project (Farmington Canal)	Stockton East Water District and Central San Joaquin Water Conservation District	21	500

Source: Critical Water Shortage Contingency Plan, *Governor's Advisory Drought Planning Panel, December 29, 2000.*

In addition, there has been an expansion in groundwater recharge/storage capacity since the last statewide drought. **Table 2.5-17**, below, describes some of the larger groundwater recharge/storage projects currently operating in California. The projects that are now operational since the last drought are those operated by the Semitropic Water Storage District, the Arvin-Edison Water Storage District, the Kern Water Bank Authority, the Mojave Water Agency and the Calleguas Municipal Water District. These groundwater recharge/storage projects rely either wholly or in part on recharge supplies from the SWP. Therefore, the project's operations are subject to SWP restrictions in drought periods, as well as the availability of conveyance capacity. If water transfers provide a component of recharge supplies, availability of SWP conveyance capacity becomes a limiting factor (Contingency Plan, November 2000). However, as discussed above, the maximum capacity of SWP storage and conveyance facilities is extensive (4.2 million acre-feet). This capacity also has been enhanced since the statewide drought of 1987-1992.

Table 2.5-17
Examples of Groundwater Storage Projects

Agency and Project Location	Comments
Alameda County Water District Niles Cone, Alameda County	Seawater intrusion management and conjunctive use, District recharges local runoff and imported surface supplies from its SWP 42 taf annual contractual entitlement. Average annual recharge of 25 taf.
Arvin Edison Water Storage District Kern County	A 350 taf banking program is being developed with MWD. Estimated extraction capability is 40 to 75 taf/year.
Calleguas Municipal Water District Las Posas Basin, Ventura County	Uses injection wells to recharge its imported MWD supplies. Maximum storage capacity of 300 taf. At full implementation, maximum annual extraction rate estimated to be 72 taf. Providing local emergency storage is a major project purpose.
City of Bakersfield Kern River Fan Area, Kern County	Initial operation of 2,800-acre recharge facility began in 1978. City has rights to Kern River water, and long-term contracts with three water agencies that store and extract water in coordination with the city.
Coachella Valley Water District Upper Coachella Valley, Whitewater River Channel Area	Recharge from local Whitewater River supplies and from MWD's imported Colorado River Aqueduct water exchanged for SWP contractual entitlements of CVWD and Desert Water Agency.
Kern Water Bank Authority Kern River Fan Area, Kern County	6,800 acres of recharge basins. The Authority is a joint powers agency that operates the project on behalf of local water agencies. Recharge supplies may be local surface water or imported supplies
The County of Los Angeles Department of Public Works, Los Angeles River and San Gabriel River watersheds, Los Angeles County	Extensive recharge facilities employing about 2,400 acres of spreading areas, and injection wells at three seawater intrusion barriers (Alamitos, Dominguez Gap, and West Coast). County operates the river systems for the dual purpose of flood control and groundwater recharge, and also recharges imported and reclaimed water provided by others.
Monterey County Water Resources Agency Salinas River Valley, Monterey County	Releases from MCWRA's Nacimiento and San Antonio Reservoirs are managed to provide recharge for upper valley. MCWRA distributes reclaimed water produced by the Monterrey Regional Water Pollution Control Agency for in-lieu recharge in the lower valley, to help reduce seawater intrusion. MCWRA's 45-mile distribution system can convey 19.5 taf of reclaimed water.
Mojave Water Agency Mojave River Basin, San Bernardino County	Basin has been adjudicated by court. The ephemeral Mojave River is the only local surface supply. To reduce overdraft, MWA's two new 71-mile pipelines import SWP supplies for recharge in spreading areas in the river channel. MWA's initial SWP contractual entitlement of 50.8 taf annually was augmented by the 1997 purchase of an additional 25 taf of annual entitlement.
Pioneer Project, Kern County Water Agency, Kern County	Recharge project with 1,200 acres of ponds capable of recharging 146 taf per year. Annual recovery capacity of 98 taf. Estimated storage of 400 taf. Project began operation in 1995.
Orange County Water District Santa River Watershed, Orange and Riverside Counties	Recharges Santa Ana River water regulated at Prado Dam, also recharges reclaimed water. Operates series of recharge basins along lower river and two seawater intrusion barriers. One barrier is jointly operated with the County of Los Angeles. Typically recharges about 300 taf annually.
Santa Clara Valley Water District Santa Clara County	District formed in 1929 to combat declining groundwater levels and associated land subsidence. Has 20 recharge basins covering about 390 acres, and also recharges in stream channels. District typically recharges over 100 taf annually, with a combination of local and imported supplies. Estimated operational storage is 550 taf.
Semitropic Water Storage District Kern County	Banking (in-lieu recharge) program with one maf storage capacity. Banking partners include MWD (350 taf), Santa Clara Valley WD (350 taf), Alameda County WD (50 taf), Zone 7 Water Agency (65 taf), and Vidler Water Company (185 taf).
United Water Conservation District Santa Clara River Watershed, Ventura County	Operates Lake Piru on Piru Creek and Freeman Diversion Dam on the Santa Clara River in conjunction with spreading areas at Saticoy, El Rio and Piru.
Zone 7 of Alameda County Water Conservation and Flood Control District Alameda County	Recharges imported SWP water (46 taf annual contractual entitlement) in local stream channels.

Source: Critical Water Shortage Contingency Plan, Governor's Advisory Drought Planning Panel, December 29, 2000.

(i) SWP - Other Water Deliveries

In addition to delivering "Table A" entitlement to the SWP contractors, the SWP conveys water to and stores water for contractors and other public agencies through other contracts and programs. (DWR Bulletin 132-98, November 1999, Ch. 9.) These contracts and programs include, for example, the following:

Turnback Water Pool Program. Under Article 56(d) of the Monterey Amendments, the Turnback Water Pool Program was initiated through Notice to the SWP Contractors No. 97-3, dated February 5, 1997 (DWR Bulletin 132-98, November 1999, Ch. 9.) All SWP contractors who signed Monterey Amendments are permitted to participate in the program. The program allows SWP contractors to offer a portion of their approved entitlement for sale in a turnback pool for use outside their service area. Other contractors interested in purchasing this water can then request a portion or all of it. Based on supply and demand, the turnback water is then allocated among the selling and purchasing contractors. CLWA has participated in this program as a selling contractor. This program allows "excess" water to be made available to SWP contractors throughout the state of California.

Interruptible Water Program. The Interruptible Water Program allows an SWP contractor to take delivery of water over the approved and scheduled allocations for the current year. Interruptible water is available for delivery on a short-term basis as determined by the DWR, when scheduled project demands are being delivered and operational requirements for project water deliveries, water quality and other requirements are being met. (DWR Bulletin 132-98, November 1999, Ch. 9.) CLWA is one of the SWP contractors that can participate in this program based upon its proportionate entitlement.

Surplus Water Provisions. Pursuant to the Monterey Amendments, the Surplus Water Provisions allow certain SWP contractors to take delivery of "surplus" water; that is, water in excess of that required to meet all demands for entitlement water. CLWA is one of the SWP contractors that can avail itself of surplus water as needed based upon its proportionate entitlement.

Carryover Water. For several years, DWR has offered SWP contractors the opportunity to carryover a portion of their undelivered entitlement water from one year for delivery during the next year. The carryover program was designed to encourage the most effective and beneficial use of water and to avoid obligating the contractors to use or lose the water by December 31 of each year. The SWP contractors' long-term water supply contracts and amendments state the criteria of carrying over entitlement water from one year to the next. CLWA is one of the SWP contractors that can avail itself of carryover water. In

1997, 263,759 acre-feet of carryover water was approved by DWR for future delivery to SWP contractors. (DWR Bulletin 132-98, November 1999, Ch. 9.)

Both CLWA's SWP Table A water entitlement and SWP water from the foregoing programs are water supply sources that could be used in groundwater banking programs. These water supply sources are available during average/normal years for injection or "banking" in groundwater basins. The stored water can then be pumped when SWP supplies are reduced in dry years. In particular, these water supply sources could be available from CLWA for use in the Saugus Groundwater Banking/ASR program and the Semitropic Groundwater Banking Project, which are discussed in further detail below and in **Section 2.5.5.**

2.5.4.5 Groundwater Banking and Conjunctive-Use Projects

With recent developments in conjunctive-use and groundwater banking programs, the UWMP states that significant opportunities currently exist to improve the reliability of local and imported water supplies in Santa Clarita Valley. The term "conjunctive-use" generally means the coordinated operation of multiple water supplies to achieve improved supply reliability. Most conjunctive-use concepts are based on storing water supplies in times of surplus for use in times of drought. A typical program involves importation of additional surface supplies from the SWP during wet periods, recharging the water in a local groundwater basin and pumping out the stored water from wells when SWP supplies are reduced during a drought.

Groundwater banking programs generally involve storing available SWP supplies during wet years in groundwater basins (e.g., the San Joaquin Valley and the Saugus Formation). The water would be stored either directly by surface spreading or injection/extraction wells, or indirectly by supplying surplus SWP water to farmers in-lieu of groundwater pumping for agricultural uses. During dry periods, the stored water could be pumped out and exported to the Aqueduct, or used by farmers in exchange for their surface water allocations and delivered to CLWA through SWP facilities. Several potential conjunctive use and groundwater banking opportunities are available for use in the Santa Clarita Valley. Upon implementation, such programs can provide the following significant benefits in terms of water management and planning:

(a) A location to store available supplies in wet years, thus maximizing the efficient use of water resources;

(b) A dry-year supply that augments existing supplies reduced by drought or other shortages; and

(c) A storage "reservoir" that can be drawn upon when supplies are insufficient during unforeseen emergencies.

These benefits allow such programs to "firm up" and enhance the reliability of both existing and future water supplies. **Table 2.5-18** below summarizes the projected water supply benefits for each of the identified groundwater banking and conjunctive use projects in the UWMP.

Table 2.5-18
Projected Groundwater Banking and Conjunctive-Use Supplies[1]
(acre-feet per year)

Source	Dry Year
Kern Water Bank	25,000
Semitropic Water Bank	30,000
Kern Delta Water Bank	40,000
North Los Posas Water Bank	10,000
Saugus (ASR)[2]	-
Total	105,000

[1] *Assumes Groundwater Banking Programs would only be called on in dry-years. All groundwater banking programs are available in wet and average/normal years.*
[2] *The UWMP did not rely on a Saugus Aquifer Storage and Recovery ("ASR") program because the current feasibility analysis for such a program was still underway at the time the UWMP was completed in December 2000.*

Source: UWMP 2000

On-going groundwater banking programs include the Kern Water Bank, the Semitropic Water Storage District, the Kern Delta Water District and the North Los Posas Water Bank. Each program is discussed in further detail below.

Kern Water Bank. The Kern Water Bank was established by DWR in 1988 as a statewide conjunctive-use program to increase the yield and enhance the reliability of the SWP. Eight elements were identified, seven sponsored by local agencies with the eighth being DWR's Kern Fan Element. The Kern Fan Element (later transferred to Kern Water Bank Authority) included the purchase of 19,900 acres of land and construction of recharge basins, extraction wells and related facilities. The original plan was to store SWP water underground in years of abundant supply and extract the banked water in dry years for use by SWP contractors. This original plan was divided into elements, such as Kern Fan, Semitropic and Cawelo. Initial studies indicated that the Kern Fan Element could store as much as 1,000,000 acre-feet of water and provide up to 140,000 acre-feet of water to the SWP in dry years. The other seven elements vary significantly in size. The Semitropic Local Element is the largest of these with more than 1,000,000 acre-feet of storage, while Cawelo Water District is the smallest with a storage capacity of about 110,000 acre-feet. The Semitropic element is discussed further below.

In 1994, the Kern Water Bank Authority (KWBA) was established to develop and operate the Kern Water Bank. The KWBA is a joint powers authority consisting of six water agencies. The KWBA constructed recharge basins and began recharging water in 1995. KWBA is now constructing additional basins, extraction wells and water conveyance facilities.

In October 1997, the KWBA, in conjunction with state and federal fish and wildlife agencies, established a Habitat Conservation Plan and Natural Community Conservation Plan that is preserving wildlife in the area while ensuring an adequate water supply for the future. When the KWBA's new water recharge facilities are completed, they will provide Kern County farming interests with the capability of storing more than 1,000,000 acre-feet of water on a permanent basis. Currently, more than 760,000 acre-feet is in storage.

Semitropic Water Storage District. The Semitropic Water Storage District (also referred to as "Semitropic" or "District") provides SWP for irrigation. The District is located in the San Joaquin Valley in the northerly part of Kern County immediately east of the California Aqueduct. Using the immense groundwater storage capacity available to Semitropic (one million acre-feet), the District has developed a groundwater-banking program. The District operates the program by taking additional SWP supplies in wet years and returning the water in dry years. As part of this dry-year return, Semitropic can leave its entitlement in the Aqueduct and increase its groundwater production. Semitropic has also constructed facilities so that groundwater can be pumped into their canal and, through reverse pumping plants, actually delivered to the California Aqueduct. Semitropic currently has five banking partners: the Metropolitan Water District, Santa Clara Valley Water District, Alameda County Water District, Alameda County Zone 7 and Vidler Water Company. The total amount of storage under contract is approximately 1,000,000 acre-feet. The stored water may be extracted in annual amounts of up to 90,000 acre-feet for all banking partners.

In addition, Semitropic has recently completed environmental documentation to construct new storage and return facilities. These new facilities will provide Semitropic with the additional capability to extract and pump-back to the California Aqueduct approximately 200,000 acre-feet annually. The total return capability of Semitropic in dry years is expected to be approximately 290,000 acre-feet.

Kern Delta Water District. Kern Delta Water District is in the process of developing a banking agreement with the Metropolitan Water District. Kern Delta is in the San Joaquin Valley southwest of Bakersfield and obtains imported supplies from the Kern River, 180,000 acre-feet of pre-1914 rights, and the SWP under contract through Kern County Water Agency for a maximum annual entitlement of 25,000 acre-feet. Under the proposed Kern Delta banking program, in wet years, additional water would be

supplied to Kern Delta where it would augment groundwater supplies through either direct groundwater recharge by spreading or by in-lieu replenishment. In dry years, previously stored supplies would be returned to the Metropolitan Water District, either by direct groundwater pumpback or through exchange of other supplies available to Kern Delta. Total return capability in dry years would be 40,000 acre-feet, with a total storage capacity of 200,000 to 240,000 acre-feet.

North Los Posas Water Bank. The North Las Posas Groundwater Basin is about 18 miles long and 4.5 miles wide, and is located in Southern California near Los Angeles. Water to this area is supplied by the Calleguas Municipal Water District, which imports all of its water from the Metropolitan Water District.

Investigations have shown that the North Las Posas Groundwater Basin has available storage capacity of about 300,000 acre-feet, primarily as a result of historic groundwater production. It is projected that the North Los Posas Water Bank could be used to return up to 10,000 acre-feet of previously stored water when needed.

2.5.4.6 Water Transfers

Another opportunity available to CLWA for increasing water supplies and enhancing reliability is to participate in voluntary water transfer programs (UWMP, Ch. 2.0). Since the statewide drought of 1987-1992, water transfers have developed into a viable supplemental source to improve supply reliability. The initial concept for water transfers was codified into law in 1986 when the California Legislature adopted the "Katz" Law (California Water Code Sections 1810-1814) and the Costa-Isenberg Water Transfer Law of 1986 (California Water Code Sections 470, 475, 480-483). These laws help to define the parameters for water transfers and establish a variety of approaches through which water or water rights can be transferred among individuals or agencies.

A water transfer can involve water sales, water ranching/farming and water sharing, and usually occurs as a form of spot, option and core transfers agreements. The cost of water transfer varies depending on the type, term and location of the transfer. Up to 27 million acre-feet of water are delivered for agricultural use every year. Over half of this water is in the Central Valley, and much of it is delivered by, or adjacent to, SWP and Central Valley Project conveyance facilities. This allows for the voluntary transfer of water to many urban areas through SWP facilities, including the CLWA service area.

One of the most important aspects of any resource planning process is flexibility. A flexible strategy minimizes unnecessary or redundant investments (or stranded costs). The voluntary purchase of water between willing sellers and buyers can be an effective means of achieving flexibility. However, not all

water transfers have the same effectiveness for ensuring flexibility. Within the resource planning process and through ultimate implementation, several different types of water transfers have been undertaken:

Core Transfers. Agreements to purchase a defined quantity of water every year, whether needed or not. These transfers have the benefit of more certainty in costs and supply, but tend to offset surplus imported water (available in most years) that is already paid for.

Spot Market Transfers. Water that is purchased only during the time of need (usually a drought). Payment for these transfers occurs only when water is needed, but there is usually greater uncertainty in terms of costs and availability of supply. An example of such a transfer was the state's Drought Water Bank. An additional risk of spot market transfers is that the purchase may be subject to institutional limits or restricted access (e.g., requiring the purchasing agency to institute rationing before it is eligible to participate in the program).

Option Contracts. Agreements that specify the amount of water needed and the frequency or probability that the supply will be called upon (an option). These transfers have the best characteristics of both core and spot transfers. With option contracts, the potential for redundant capacity is minimized, as are the risks associated with cost and supply availability.

The most viable types of water transfers are core and option transfers and, as such, represent the CLWA's long-term strategy (UWMP, Ch. 2.0). The costs for these types of transfers have been estimated to be about $60 to $160 per acre-foot for core transfers (compared to the initial cost of $1,100 to $2,000 per acre-foot for SWP entitlement), and $250 per acre-foot for option transfers. Although the option transfer costs might seem high, the equivalent average annual cost is much less, about $65 to $112 per acre-foot. The reason the average annual option transfer costs are much lower is due to the variable likelihood that the transfers will be needed.

2.5.4.7 Water Exchanges: Brackish and Seawater Desalting

Water exchanges represent the use of water that belongs to another entity either by trading water for water or by paying the cost of the water development and transmission. One opportunity for future exchange is through brackish and seawater desalting (UWMP, Ch. 2.0).

Large scale seawater desalination processes usually occur by one of two means: membrane processes and thermal processes. Membrane processes such as reverse osmosis (RO) use pressure to push seawater through semi-permeable membranes. The membrane acts as a filter allowing water to pass but not dissolved solids and impurities. Thermal processes utilize heat to separate the water from the salt and other impurities in the seawater. Thermal facilities tend to be more common but are often located in areas where fuel is inexpensive. Therefore, as membrane technology closes the cost gap, RO will become a less costly and more energy efficient desalination technology.

Desalination of seawater is technically feasible, but has historically been an expensive procedure. However, recent seawater desalination projects seem to indicate that the cost of seawater desalination, in some site-specific situations, has decreased in recent years. The competitive proposal process for the design, construction, and operation of the 25 mgd Tampa, Florida, seawater desalination plant gained worldwide attention. The best and final offer had a first year water cost of $560/acre-feet and a 30-year nominal cost of water of $680/acre-feet. This compares favorably to past desalination costs reported to be in the range of $1,300 to over $2,000 per acre-feet. The Tampa project includes a number of favorable factors that contribute to the low water price.

In Trinidad, a 23-year contract was awarded to build, own, and operate a 28.8 mgd seawater desalination facility. The plant will supply water at a first-year price of $865/acre-feet (1999$).

A third example is the Long Beach Desalination Project, currently in the planning stages. Poseidon Resources, the Long Beach Water Department and Southern California Edison are key participants in this project. The project includes a 20-40 mgd desalination plant and appurtenant facilities. The $90 to $180 million private investment will present no financial risk to the public partners, while at the same time providing substantial water supplies.

Current projects would seem to indicate that the cost of seawater desalting is at a point where it could become a viable resource option. As discussed above, 20,000 to 40,000 acre-feet per year will be available as part of the proposed Long Beach project. CLWA has assumed that between 2,000 and 5,000 acre-feet per year of desalted water could be purchased for use in the CLWA service area.

2.5.4.8 Water Conservation and Water Supply Planning

In recent years, water conservation has become an increasingly important factor in water supply planning (UWMP, Ch. 5.0, 7.0). Although not considered a "supply" source, water conservation measures have the same effect by reducing overall water demand, making more water available for use at the local and state

level. In the Santa Clarita Valley, CLWA and the four retail water purveyors have actively implemented water conservation programs for many years, and additional programs are planned for the future (UWMP, Ch. 5). CLWA is now a signatory to the Urban Water Conservation Council Memorandum of Understanding regarding the use of best management practices.

In summary, CLWA and the purveyors have developed extensive water conservation efforts, and the CLWA service area has achieved significant reductions in actual water usage through these programs. During the early 1990s (hot/dry period), the overall water requirements, due to the effects of weather, were projected to increase by approximately 10 percent. As a result of the conservation efforts, the overall water requirement actually decreased by 20 percent.

CLWA has adopted the water conservation goal of an overall 10 percent reduction in normal demand. Residential and commercial water usage can be expected to decrease through the implementation of existing and future programs. CLWA and the purveyors assume that water conservation can decrease water usage in normal years by approximately 10 percent (which is considered a conservative estimate).

Water Demand Measures and Best Management Practices. The Urban Water Management Act lists 14 Demand Management Measures that correspond to the 14 urban Best Management Practices ("BMPs"), or water use efficiency measures, promulgated by the California Urban Water Conservation Council. Adoption of the BMPs is presently voluntary; about 250 water agencies throughout the State have committed to implement them.

The recent CALFED Bay-Delta Program requires mandatory adoption of the BMPs by December 2002. Consistent with the UWMP, the water agencies of the Santa Clarita Valley have committed to implement the BMPs.

Implementation of Best Management Practices. The Demand Management Measures/Best Management Practices that are currently being implemented by the Santa Clarita Valley water agencies, or planned for implementation, are listed below.

1. **Water Survey Programs for Single and Multi-Family Residential Customers.** The programs target and market the identified residential customers. The water agencies in Santa Clarita Valley will continue to implement these surveys and later implement the BMP.
2. **Residential Plumbing Retrofit.** The program identifies residences constructed since 1992 and develops distribution strategy for water saving devices. The water agencies in Santa Clarita Valley will continue to implement this program and later implement the BMP.

3. **System Water Audits, Leak Detection and Repair.** This programs involves leak detection and repair. The water agencies in Santa Clarita Valley will continue to implement this activity.

4. **Metering with Commodity Rates for New Connections and Retrofit of Existing Connections.** The metering of all new connections and retrofitting is already done by agencies in Santa Clarita Valley.

5. **Large Landscape Conservation Programs and Incentives.** These programs offer water use surveys to non-residential customers with large landscape areas. The water agencies in Santa Clarita Valley are partially complying with this activity, and will later implement the BMP.

6. **High Efficiency Washing Machine Rebate Program.** This program offers rebates for purchase of horizontal-axis washing machines. The water agencies in Santa Clarita Valley do not offer rebates (nor do local energy providers or wastewater agencies). Local agencies are exempt from implementation.

7. **Public Information Program.** This program implements an appropriate public information program on water efficiency. The water agencies in Santa Clarita Valley offer a very extensive and effective, award-winning program.

8. **School Education.** This program provides water efficiency classes and information to schools. The water agencies in Santa Clarita Valley offer an extensive and effective award-winning program.

9. **Conservation Programs for Commercial, Industrial, and Institutional (CII) Customers.** These programs identify such accounts, rank them according to water use and offer water use surveys and incentives. The water agencies in the Santa Clarita Valley not yet implementing the programs will implement the BMP at a later date.

10. **Wholesale Agency Programs.** CLWA provides financial incentives or equivalent to retailers, along with technical support and information. Local water agencies will continue to implement this activity.

11. **Conservation Pricing.** The water agencies in the Santa Clarita Valley institute conservation pricing. Local agencies will continue to implement a variety of pricing structures that meet the terms of this requirement.

12. **Water Conservation Coordinator.** The water agencies in the Santa Clarita Valley designate staff to oversee water conservation program implementation. Local agencies will continue to implement.

13. **Water Waste Prohibition.** CLWA enforces measures prohibiting water waste; however, CLWA does not possess police powers.

14. **Residential Ultra-Low-Flow Toilet (ULFT) Replacement Program.** The programs determine number of service connections constructed before 1992 and offer toilet replacements. Local agencies will implement this BMP at a later date.

2.5.4.9 Local Water Contingency Planning

In addition to the conservation programs, during the 1991 drought year, the local water agencies in the Santa Clarita Valley prepared and implemented a Water Shortage Contingency Plan. It was again implemented in 1994 due to the Northridge earthquake. In both instances, the contingency plan worked

effectively. The summary provided below describes various aspects of the updated water shortage contingency plan for the Santa Clarita Valley (UWMP, Ch. 6.0).

Drought Committees. In past droughts, two committees were formed to address drought conditions: the Upper Santa Clara Valley Water Committee, consisting of the local water agencies in the Santa Clarita Valley, and the City of Santa Clarita Drought Committee. Each reviewed information on water production and demand. The Water Committee agreed to cooperate in sharing water resources regardless of contractual or water rights during the emergency. The City committee made recommendations to the City Council and the water purveyors.

Drought Conditions. In the event of a continued drought, it is assumed that the SWP Table A deliveries to CLWA would be curtailed, and that a state Drought Water Bank would be formed. In addition, a combination of supplies would be available such as short-term water exchanges, participation in DWR's dry-year water program, deliveries from CLWA's flexible water account in Castaic Lake Reservoir, and local groundwater pumping in accordance with the UWMP. Reclaimed water availability is also assumed to be available.

Earthquake or Other Natural Catastrophes. If a major earthquake were to occur, or if other catastrophic natural events were to occur elsewhere in the State, it could affect the Santa Clarita Valley. Local storage in reservoirs, combined with requests to the public to reduce consumption, would provide an adequate supply for about seven days. Experts agree that at least 72 hours may elapse before outside help is received; during this period and beyond, the pumping capacity of the retail agencies should provide sufficient water.

Contamination. No extended problems with water contamination are anticipated, since the quality of local supplies is good, and steps can be readily taken to isolate a contamination problem. As discussed above, the presence of perchlorate found in one area of the Saugus Formation is currently being addressed through the development of a cleanup plan for this aquifer.

Stages of Action. The agencies have agreed on a four-stage rationing plan, when needed. The trigger points for these stages have been established, priorities set and consumption limits established. A public hearing must be called to implement the rationing plan, and various monitoring procedures have been adopted.

Taken together, an updated water shortage contingency plan for the Santa Clarita Valley is in place, and has been successfully implemented in the past (UWMP, Ch. 6.0).

2.5.4.10 Summary Of Water Supplies For Santa Clarita Valley

As discussed above, this discussion of water supplies and demand in the Santa Clarita Valley provides cumulative water demand data for informational purposes only. Because the applicant is either securing or creating all of the water supplies necessary to serve the Specific Plan's potable and non-potable water needs, the Specific Plan will not contribute to a decline in regional water supplies. Consequently, this discussion of regional water supplies and demand is not required for CEQA compliance.

The reliability of water supplies available to the CLWA service area does not depend on the "Full Delta Fix" and other water supply improvements recommended by the CALFED Program. CLWA and the retail water purveyors in the Santa Clarita Valley continue to pursue and fund their own local water supply programs. Recently, local water reliability enhancement programs have been undertaken to ensure that the water needs of the service area can be met into the future. As part of this endeavor, numerous programs are being undertaken simultaneously to safeguard against the onset of the next dry-year.

As an example, CLWA's long-term Capital Improvement Plan ("CIP") is currently funding the purchase of additional SWP supplies, groundwater storage programs both inside and outside CLWA's service area, surface water storage programs, water conservation and recycling programs, short-term pumping from the Saugus Formation and short-term exchanges from other agencies on an as-needed basis. In 2001, CLWA took several specific actions to enhance, preserve and strengthen the quality and reliability of existing and future water supplies in the Santa Clarita Valley. Those actions included, among others, completing the preliminary design for expansion of the Earl Schmidt Filtration Plant from 25 mgd to 55 mgd; obtaining permission from DHS to increase filter flow at the Filtration Plant; negotiating a transfer of 8,786 AFY of 2001 Castaic Creek Flood Flows to CLWA for treatment and use; negotiating with DWR an extended carry-over program for 2001 SWP allocations; signing the Memorandum of Understanding Regarding Urban Water Conservation in California; and working to complete acquisition of an additional 16,000 AFY of SWP entitlement, following appropriate environmental review, which is underway. These measures implemented over time provide the assurance that alternative supplies will be available in the CLWA service area to meet local water demands well into the future. For long-term planning purposes, water supplies and facilities are added on an incremental basis and in advance of need.

At the same time, however, CLWA, the four local retail water purveyors and other purveyors in the state readily acknowledge that it would be economically imprudent now, or in the short-term, to acquire all of the water supplies and facilities needed for the next twenty-five to thirty years. This type of an approach would represent an unfair shift of costs from future customers in new developments to existing

customers in existing developments. In fact, water agencies in California are generally prohibited by law from imposing fees and charges for water supplies and facilities unless those fees and charges are reasonably related to actual services provided.

(a) Availability of Local Supplies

As shown in **Table 2.5-19**, projected total future supplies from local groundwater and reclaimed water sources range from 52,700 to 87,000 AFY in a dry year, and in an average/normal year range from 39,200 to 72,000 AFY.

Table 2.5-19
Planned Local Supplies
(acre-feet per year)

Source	Average/Normal Year	Dry Year
Groundwater		
Alluvial aquifer	30,000-40,000	30,000-35,000
Saugus Formation	7,500-15,000	11,000-15,000
Saugus Formation (new wells)*	--	10,000-20,000
Reclaimed Water	1,700-17,000	1,700-17,000
Total Local Supplies	39,200-72,000	52,700-87,000

**Planned program for future implementation pursuant to the UWMP 2000. According to the UWMP 2000, prior to implementing increases in production from groundwater supplies, CLWA will analyze the feasibility, cost and potential water quality and environmental effects of such a program. However, according to the UWMP 2000, preliminary analyses and recent studies have concluded that additional pumping can be carried out.*

Source: UWMP 2000, Table 2-4.

(b) Availability of Imported Supplies

As shown in **Table 2.5-20**, projected supplies from the SWP, water banking/conjunctive-use projects, water transfers and desalination range from 74,400 to 108,900 AFY in wet years up to 148,400 to 192,700 AFY in dry years. The estimated range for an average/normal year is 67,000 to 108,900 AFY.

Table 2.5-20
Planned Imported Supplies
(acre-feet per year)

Source	Wet Year	Average/Normal Year	Dry Year
SWP Supplies	66,300 - 95,200	56,800 - 95,000	37,900 - 75,800
Banking/Conjunctive Use*	--	--	105,000
Water Transfers*	6,100 - 8,700	5,200 - 8,700	3,500 - 6,900
Desalination*	2,000 - 5,000	2,000 - 5,000	2,000 - 5,000
Total Imported Supplies	74,400 - 108,900	67,000 - 108,900	148,400 - 192,700

Source: UWMP 2000
** Planned programs for future implementation pursuant to UWMP 2000, Table 2-5.*

(c) Total Water Supply Availability

As shown in **Table 2.5-21**, for long-term planning purposes, total water supplies available to the CLWA service area range from 201,100 to 279,700 AFY in dry years, and from 103,200 to 180,900 AFY in average/normal years. For critical dry years, when the reliability of the SWP can be reduced to below 39.8 of SWP entitlement, CLWA would utilize dry year supplies available from the Saugus Aquifer, and water banking and conjunctive use projects as indicated in **Table 2.5-21**.

Table 2.5-21
Total Supplies
(acre-feet per year)

Source	Average/Normal Year	Dry Year
Local Supplies		
Groundwater		
Alluvial Aquifer	30,000 - 40,000	30,000 - 35,000
Saugus Formation	7,500 - 15,000	11,000 - 15,000
Saugus Formation (new wells)*	--	10,000 - 20,000
Reclaimed Water*	1,700 - 17,000	1,700 - 17,000
Imported Supplies		
SWP Supplies	56,800 - 95,200	37,900 - 75,800
Water Banking/Conjunctive Use*	--	105,000
Water Transfers*	5,200 - 8,700	3,500 - 6,900
Desalination*	2,000 - 5,000	2,000 - 5,000
Total Supplies	103,200 - 180,900	201,100 - 279,700

Source: UWMP 2000.
**Planned programs for future implementation pursuant to the UWMP 2000, Table 2-6.*

The remaining portion of this section summarizes "water demand" in the Santa Clarita Valley.

2.5.4.11 Water Demand In The Santa Clarita Valley

This section describes the historic, existing and projected water use (demand) within the CLWA service area. The information in this section is based on the UWMP.

The UWMP described historic and existing water usage in the Santa Clarita Valley and the methodology used to forecast future water demand for the valley. Water usage consists of residential, commercial, industrial, recreational, agriculture and other uses. Existing land-use data, new housing construction information and population data were also compiled for the Santa Clarita Valley. The information was then compared to historic trends in water service connections and customer water usage to determine the reasonableness of the projected information. In addition, the UWMP considered the effects of weather and conservation on historic water usage.

Based on the information provided in the UWMP, this section summarizes the historical and existing water demand in the Santa Clarita Valley and forecasts the water demand in the Valley through 2020.

(a) Historical And Existing Water Demand In Santa Clarita Valley

Based on the UWMP, the historical and existing water usage was based upon service connections from the four retail water purveyors in the CLWA service area. As shown in **Table 2.5-22**, the total number of new service connections has increased from 39,299 in 1990 to 49,550 in 1999. This increase in the number of service connections represents slightly more than 500 per year in 1991, to a maximum of 2,028 in 1999, representing an average annual increase of 1,139 new service connections per year.

Table 2.5-22
Historical Number of Service Connections

Service Connections	1990	1992	1994	1996	1998	1999
Valencia	14,272	14,854	15,703	17,420	19,863	20,865
Newhall	5,854	6,144	6,294	6,477	6,585	6,758
Santa Clarita	18,550	19,000	19,400	19,650	20,300	21,100
LA County #36	623	736	752	768	774	827
Total	39,299	40,734	42,149	44,315	47,522	49,550

Source: UWMP 2000

(b) Projected Water Demand In Santa Clarita Valley By 2020

In order to forecast future water demand through 2020, the UWMP basically utilized both the extrapolation method (based on service connections) and the econometric method (based on land-use analysis) as the most accurate means of forecasting water demand through 2020. This combined forecast took the projected growth in new service connections, accounted for the effects of housing trends, land-use changes, development trends, weather and conservation effects to create an estimated increase in water demand through 2020.

Table 2.5-23 depicts the projected average/normal year water demand for the Santa Clarita Valley through 2020.

Table 2.5-23
Projected Normal/Average Year Water Demand
(acre-feet per year)

	2005	2010	2015	2020
Urban Uses	66,600	77,700	90,900	106,000
Agricultural Uses[1]	15,100	12,400	9,800	7,100
Conservation Savings[2]	(6,600)	(7,700)	(9,100)	(10,600)
Total Projected Demand	75,100	82,400	91,600	102,500

1 *Agricultural water usage is expected to decrease from 17,800 AFY in 1999 to about 7,100 AFY by 2020 due to increased development in the Santa Clarita Valley. This decrease in agricultural demand includes the approximately 7,038 AFY of Newhall Land and Farming Company agricultural water that would be used to partially meet the potable water demands of the Newhall Ranch Specific Plan as Newhall Land and Farming Company's agricultural lands in Los Angeles County are converted to urban uses.*

2 *Conservation savings refers to the effects of conservation on water usage. According to the UWMP, urban water usage can be expected to decrease through implementation of water conservation practices in the CLWA service area. Based on existing programs, the UWMP projects that water conservation will decrease water usage by at least 10 percent.*

Source: UWMP 2000, Table 3-5

To determine the projected water demand in dry years, the UWMP relied on studies showing that hot-dry weather may generate a 10 percent increase in both urban and agricultural water usage above and beyond the average/normal year water demand. Therefore, this percentage was used to generate the dry-year demands shown in **Table 2.5-24**. No conservation savings are reflected in the water demand projections shown in **Table 2.5-24**. **Table 2.5-24** also provides the overall projected water demand for the Santa Clarita Valley through 2020 in average/normal years and dry years.

Table 2.5-24
Projected Dry-Year Water Demand
(acre-feet per year)

	2005	2010	2015	2020
Total Projected Normal/Average Year Demand	75,100	82,400	91,600	102,500
Plus 10% Increase in Usage in Dry-Years	7,510	8,240	9,160	10,250
Total Projected Dry-Year Demand	82,610	90,640	100,760	112,750

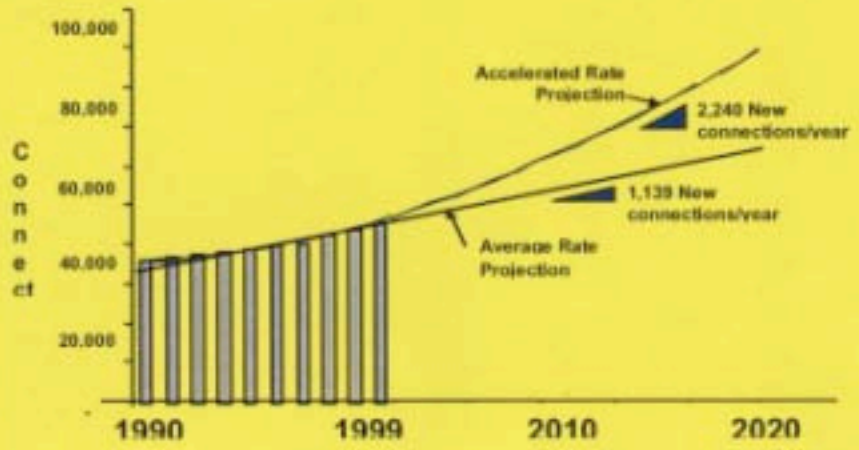
Source: UWMP 2000, Table 3-5 and Table 4-2

In considering the future number of service connections needed within the CLWA service area, the UWMP utilized two different methodologies. The first methodology, referred to as the extrapolation method, evaluates projected water usage based on the extrapolation of service connections throughout the CLWA service area. Using this method, service connections are exponentially projected for the CLWA service area through 2020. Under this method (exponential projection), the number of new service connections is projected to increase from 49,550 in 1999 to about 96,000 in 2020, representing an annual average increase of about 2,240 new connections per year.

The second methodology evaluates projected water usage based on projected land-use and demographic trends within the CLWA service area. Using this method, service connections are forecasted by using a simplified (average rate) regression for the CLWA service area through 2020. Under this method, the number of new service connections is projected to increase from 49,550 in 1999 to about 70,000 in 2020, representing an average annual increase of 1,139 new service connections per year.

Figure 2.5-20, below, depicts the historical and projected number of service connections in the CLWA service area by the year 2020. The figure shows about 96,000 new connections in 2020, with an average annual increase of 2,240 connections per year from 2000 to 2020, using the accelerated rate projection); and it shows about 70,000 new connections in 2020, with an average annual increase of 1,139 connections per year from 2000 to 2020, using the average rate projection).

Figure 2.5-20
Historical and Projected Number of Service Connections



2.5.5 NEWHALL RANCH WATER DEMAND AND SUPPLIES

An adequate supply of water is available to meet the demands of the Newhall Ranch Specific Plan without creating significant environmental impacts.

2.5.5.1 Preface

This section is the "heart" of the Water Resources section. This section specifically responds to the trial court's inquiries and directions with respect to available water sources for build-out of the Specific Plan. This section demonstrates that adequate water sources will be available for build-out of the Specific Plan by showing that the project applicant has secured other water sources and developed the factual basis for feasibly utilizing the Saugus Groundwater Banking/ASR program.

2.5.5.2 Newhall Ranch Demand

This section presents the water demand for the Newhall Ranch Specific Plan. In this discussion, the Specific Plan's water demand is assessed in conjunction with the existing water demand in the Santa Clarita Valley, as well as the future cumulative water demand in the Santa Clarita Valley under near-term and long-term conditions.

(a) Specific Plan Water Demand

Water demand projections serve as the basis for all water planning of a community. Accurate projections of water demands are required to provide a strong foundation for both reliable water supply planning and water system facility planning, layout and sizing.

(1) Methodology

The Newhall Ranch Specific Plan proposes a dual water system. One system would provide potable water for indoor and outdoor uses and the other parallel system would provide reclaimed water for outdoor (irrigation) uses. To plan a dual water distribution system for potable and non-potable water, water demands must be "disaggregated," which means that the water demands must be differentiated into indoor (potable) demands, outdoor potable demands and outdoor demands that can be met with non-potable water. The availability of reclaimed water to meet portions of the non-potable outdoor demand is based on the amount of water that can be reclaimed at a WRP. The amount of reclaimed water, in turn, is based on the amount of water used for indoor purposes, which is then sent to the WRP to be treated and disinfected to provide a water supply suitable for non-potable uses.

In this case, the applicant intends to use reclaimed water from the Newhall Ranch WRP, and reclaimed water from upstream WRPs as it becomes available through CLWA's Reclaimed Water System Master Plan.[33]

Since reclaimed water is not used in the Santa Clarita Valley as of the time of this writing, neither the CLWA nor the local water retail purveyors have developed potable and non-potable water demand factors. Therefore, CH_2MHILL reviewed the Irvine Ranch Water District (IRWD) in Orange County, a long-term leader in water reclamation, for a potable/non-potable methodology for estimating disaggregated water demands.

The IRWD created 19 land use categories for which water use factors were determined, and from which water demands could be projected. Water use factors disaggregate demands into residential, nonresidential and irrigation water demand. Residential water demands are further subdivided into interior and local exterior demands,[34] the bulk of which must meet potable water standards. Water demands for common area irrigation within residential neighborhoods are calculated as "irrigation" demands, which may be met with non-potable water. Non-residential potable demands are also divided into interior and exterior water demands for businesses, institutions, schools and parks. Under the IRWD method, irrigation demands include all landscape irrigation demands that can be met with non-potable water, such as for greenbelts, parkways, golf courses, school yards, common areas and parks. IRWD further derived population projections from land use factors by applying average occupancy estimates of 2.0 to 3.5 persons per dwelling unit, depending on the land use (*see* Newhall Ranch Final EIR Appendix 4.11 for a more detailed discussion of IRWD methodology).

The water use factors used in the IRWD approach have been compared for consistency with the factors used by CLWA and Valencia Water Company. Generally, the approaches provide similar estimates of total water demands; however, the IRWD approach provides a more refined breakdown of demands and wastewater generation to allow water balance estimates. Consequently, the IRWD approach was applied to the Newhall Ranch Specific Plan.[35]

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33 As part of an updated Reclaimed Water System Master Plan, CLWA expects to provide up to 17,000 acre-feet of reclaimed water for use in the Santa Clarita Valley (UWMP, Chapter 7.0).

34 Interior water demands include drinking, bathing, laundry, sanitation, etc., and are generally considered synonymous with water that enters the wastewater collection and treatment system. Local exterior water is used for landscape irrigation near the home, washing cars, filling swimming pools, etc.

35 For comparison purposes, water demand factors used by VWC in planning its service area were applied to the land use categories in the Specific Plan. VWC factors yield an estimated annual demand of about 17,566 acre-feet per year compared to the 17,680 acre-feet of demand created by the proposed Specific Plan. The IRWD approach provided a slightly more conservative (about 0.6 percent higher) estimate and allowed for a more detailed breakdown of water demand by type.

(2) Water Demands

Annual Demands. Applying the IRWD water demand estimating approach to land use projections for the Specific Plan yields an estimated total annual demand of 17,680 acre-feet per year. Of this total, 8,645 acre-feet per year must be met with potable supplies and 9,035 acre-feet per year could be met from potable or non-potable supplies. **Table 2.5-25**, below, summarizes water demands by type and use. Based on this table, residential demands are 9,801 acre-feet per year, total nonresidential demands are 1,231 acre-feet per year and open area and parks demands are 6,648 acre-feet per year. The Specific Plan is expected to build out over approximately a 25-year period, beginning in 2005. The projected Specific Plan water demand in five-year increments through the year 2030 is presented in **Table 2.5-26**.

A portion of the Specific Plan's water demand would be met with non-potable supplies from the Newhall Ranch WRP. It is estimated that approximately 5,630 to 7,763 AFY of non-potable supply (treated discharges from the WRP) would be available to meet a portion of the Specific Plan's demand of 17,680 AFY. The balance of the total non-potable demand would be met by using CLWA reclaimed water from upstream WRPs. By using these sources of supplies, the potable water demand for the Specific Plan would be approximately 8,645 AFY. It should be noted that annual demand is expected to increase by approximately 10 percent during a dry year due to a reduction in local rainfall. This would result in a dry-year water demand of approximately 19,449 AFY. In an average or above average rainfall year, the Specific Plan also requires an additional 4,500 acre-feet to inject into the Saugus Groundwater Banking/ASR Program (described below).

Seasonal Demands. Seasonal demands are important in analyzing whether all of the reclaimed water generated at the Newhall Ranch WRP could be used for irrigation as it is generated, or whether some amounts would need to be released into the Santa Clara River. Knowledge of seasonal water demands is also important in balancing water supplies and demands, and in identifying potential impacts on the potential retail water purveyor (Valencia Water Company) and water wholesale agency (CLWA).

Indoor water demands are relatively constant throughout the year, while exterior demands vary annually and throughout the year mainly due to fluctuations in evapotranspiration, which affects the demand for irrigation water (see, **Figure 2.5-21**, Monthly Irrigation Demands). Although total Specific Plan potable demands would vary monthly, they would not exhibit as much variation as irrigation demands due to the dampening effect of the more constant indoor use. As shown in **Figure 2.5-22**, at build-out, maximum-monthly potable demands would be 904 acre-feet, while maximum-monthly non-potable demands would be 1,275 acre-feet. As shown in **Figure 2.5-23**, at build-out, total monthly demands would range from a low of 932 acre-feet per month in January and December to a maximum of 2,179 acre-feet in July.

Table 2.5-25
Summary of Newhall Ranch Water Demands (acre-feet)

Land Use Type	Water Demand (acre-feet/year) Potable	Non-potable	Total
Residential Development			
Estate	417	250	
Low	342	204	
Low-Medium	2,823	675	
Medium	2,571	495	
High	585	70	
Mixed-Use	1,184	185	
Subtotals	**7,922**	**1,879**	**9,801**
Nonresidential Development			
Mixed-Use Commercial			
Retail	11	76	
Office	139	76	
Commercial	115	33	
Business Park	374	82	
Visitor-Serving	2	57	
Water Reclamation Plant	13	12	
Fire Stations	9	2	
Schools	29	201	
Subtotals	**692**	**539**	**1,231**
Open Areas and Parks			
Recreation			
Community Parks	6	212	
Neighborhood Parks	6	231	
Lake – Water	0	57	
Lake - Park Area	0	36	
Golf Course	19	932	
Arterial Highways			
Landscape Area	0	306	
Major Open Areas			
Community Slopes	0	4,843	
Subtotals	**31**	**6,617**	**6,648**
Totals	**8,645**	**9,035**	**17,680**

Source: CH$_2$MHILL, *Water Resources and Wastewater Management for the Newhall Ranch Project,* (Thousand Oaks, California: Revised June 1996), p. 2-5.
Note: Annual demand is expected to increase by approximately 10 percent during a dry year due to a reduction in local rainfall.

Table 2.5-26
Specific Plan Water Demand In Five-Year Increments[a] (acre-feet per year)

Five Year Increment	Demand	
	Potable	Non-Potable
2006-2010	1,729	1,807
2011-2015	3,458	3,614
2016-2020	5,187	5,421
2021-2025	6,916	7,228
2026-2030	8,645	9,035

a *Specific Plan build-out is projected to occur by 2030. The first units are assumed to be occupied by the end of 2005.*

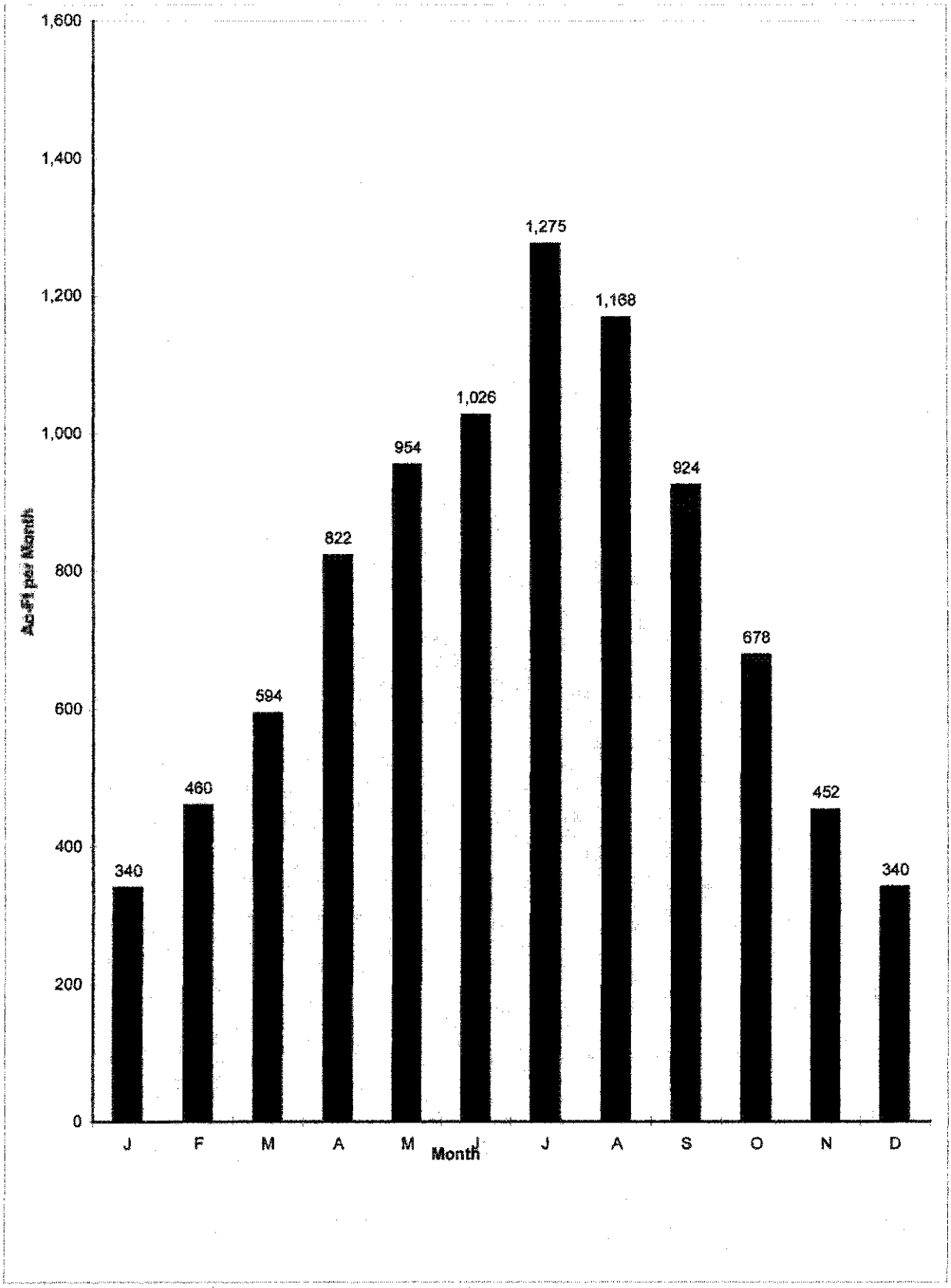

Figure 2.5-21 - Monthly Irrigation Water Demands

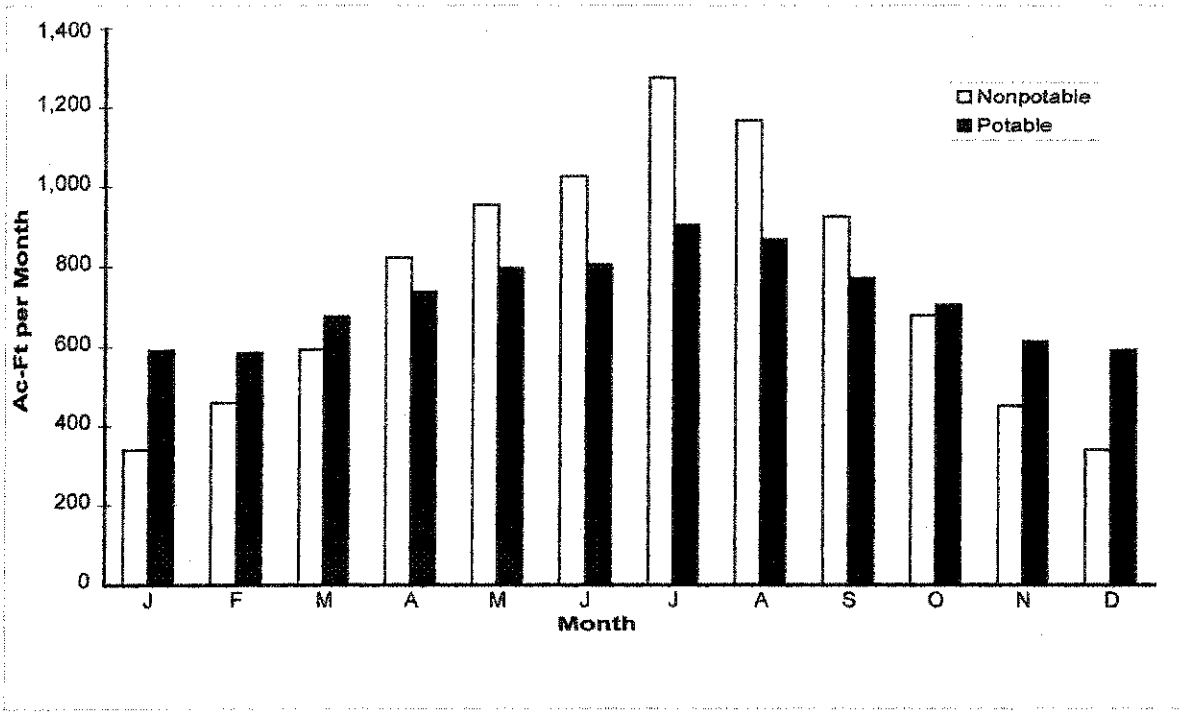

Figure 2.5-22 - Monthly Water Demands

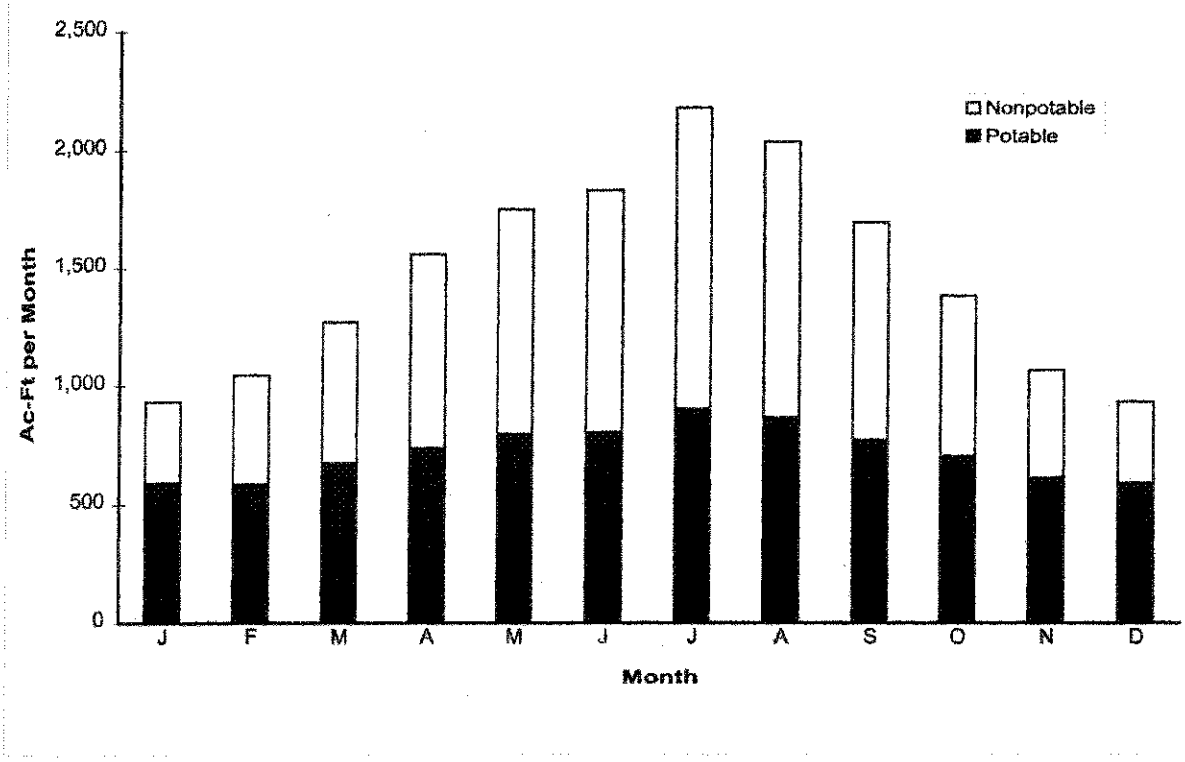

Figure 2.5-23 - Total Monthly Water Demands

(b) Existing Conditions Plus Specific Plan Water Demand

This section describes the existing development in the Santa Clarita Valley, as well as the Specific Plan water demand. **Table 2.5-27**, Existing Plus Specific Plan Demand for the Santa Clarita Valley, illustrates the Specific Plan demand, in conjunction with existing demand in the Santa Clarita Valley.

Table 2.5-27
Existing plus Specific Plan Demand for the Santa Clarita Valley
(acre-feet per year)

	Average Years		Dry Years	
Existing Demand [a]	76,769		84,446	
Urban Demand		60,678		60,678
Other Demand (including (agricultural)		16,091		16,091
Dry Year 10% Increase in Demand		0		7,677
Specific Plan Demand [b]	17,680		19,449	
Potable Demand		8,645		8,645
Non-Potable Demand		9,035		9,035
Dry Year 10% Increase in Demand		0		1,768
Additional Groundwater Banking Programs	4,500		0	
Total	**98,949**		**103,895** [c]	

a *Source: The County of Los Angeles Department of Regional Planning, Inventory Information for Water Service, July, 2002, and the 2001 Santa Clarita Valley Water Report, April 2002.*

b *This demand would occur starting with the Specific Plan's buildout year of approximately 2030. Newhall Ranch buildout is assumed to occur from 2005 to 2030 at a rate of 864 dwelling units per year, with water demands of 707 AFY average.*

c *Consistent with the UWMP, December 2000, demand is increased by approximately 10 percent in dry years.*

As shown, existing water demand in the Santa Clarita Valley is approximately 76,769 AFY in average years. Of this demand, approximately 60,678 acre-feet is related to urban or developed areas and approximately 16,091 acre-feet is related to other uses in the Valley, including agricultural uses. When combined with the Specific Plan land use water demand of 17,680 AFY and the 4,500 AFY demand for the Saugus Groundwater Banking/ASR program injection, the total water demand in the Valley would be approximately 98,949 acre-feet if Newhall Ranch were completely built out today and the Saugus Groundwater Bank/ASR Program were fully in place. The land use-related water demand would increase by approximately 10 percent in dry years, resulting in a water demand of approximately 103,895 AFY. (Note that in a dry year water is not injected into the Saugus aquifer as part of the Saugus Groundwater Banking/ASR Program.)

(c) Cumulative Water Demand

In order to analyze the cumulative water impacts of the Newhall Ranch Specific Plan in combination with other expected future growth, the amount and location of growth expected to occur in addition to that of the Specific Plan must be predicted. Section 15130(b) of the CEQA Guidelines allows two methods of prediction. The two methods are described as follows: "(a) a list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those projects outside the control of the agency; or (b) a summary of projections contained in an adopted general plan or related planning document which is designed to evaluate regional or areawide conditions." In response to the CEQA requirements, two separate cumulative development scenarios are analyzed for this water analysis in order to not only meet CEQA requirements, but to also meet the County of Los Angeles requirement that the project under review be assessed under the County's Development Monitoring System (DMS), which is a required component of the County of Los Angeles General Plan. The two cumulative scenarios analyzed are referred to below as the "DMS Build-out Scenario" and the "Santa Clarita Valley Cumulative Build-out Scenario."

The list of cumulative projects used in this water analysis to assess cumulative impacts is not static. From time to time, the list of cumulative projects is increased or decreased as specific development proposals are applied for, withdrawn, approved or denied by lead agencies. As part of this analysis, an attempt has been made to be as current as possible; however, it is possible that the list of projects maintained by the County of Los Angeles or other surrounding jurisdictions will change while this analysis is a subject of public review.

As discussed above, this section provides cumulative water demand data for informational purposes only; it is not required by CEQA because the applicant has secured sufficient water sources (Newhall Agricultural Water, Nickel Water, etc.) to serve the Specific Plan through build-out. These water sources, which are independent of the water sources provided by CLWA (i.e., regional/cumulative CLWA/SWP supplies), include either: (a) water already being used by the applicant on an annual basis (i.e., agricultural groundwater); or (b) "new" water purchased by the applicant for the purpose of serving the water needs of the Specific Plan (i.e., Nickel Water, Newhall/SWP Water, etc.). Therefore, the use of these available water supplies cannot be said to contribute to a decline in regional water supplies. With regard to the former, the supplies are already in use on an annual basis, resulting in no change in regional supplies. As to the "new" supplies, they would not even exist but for implementation of the Specific Plan.

(1) DMS Build-Out Scenario

The DMS is an important regulatory component of the County's General Plan. The DMS acts as an early warning system to County decision-makers by providing information about the existing capacity of certain infrastructure, facilities and public services at the time a new development is considered in the four major "urban expansion areas" of the County's General Plan, including the Santa Clarita Valley. The goal of DMS is to identify the new infrastructure, facilities and public services that will be required for new development, and to ensure that the appropriate costs of expanding such infrastructure, facilities and services will be paid for by new development and not assumed by taxpayers in existing developments.

In accomplishing the goals stated above, the DMS determines the availability of certain infrastructure, facilities and services, including water services, on an individual and cumulative basis. The DMS utilizes a computer database that incorporates information supplied by service providers and determines capital facility capacity and demand placed on the system by existing, pending, approved and recorded projects for which land divisions have been filed within the four major "urban expansion areas" of the County's General Plan, including Santa Clarita Valley. The DMS is used to quantitatively determine project and cumulative impacts on certain essential infrastructure, facilities and services, including water service. In EIRs prepared for the County, whenever a proposed project would result in an exceedence of applicable infrastructure, facilities or services, a significant impact is identified and recommended mitigation measures are provided.

The "DMS Build-out Scenario" entails build-out of subdivision projects listed in the County's Development Monitoring System (DMS), plus the Newhall Ranch Specific Plan. A DMS analysis is required by the County's General Plan for the cumulative analysis of certain utilities and services, including water service.

The County's DMS database includes all pending, recorded and approved projects for which land divisions have been filed within County unincorporated lands and within the City of Santa Clarita. The City plus County unincorporated area together constitute the County's Santa Clarita Valley Planning Area. A list of the future DMS development activity in the Santa Clarita Valley Planning Area is presented below in **Table 2.5-28**. The listing presented in **Table 2.5-28** does not include General Plan Amendment requests. (General Plan Amendment requests are considered in the Santa Clarita Valley Cumulative Build-out Scenario, which is considered more comprehensive than the DMS Build-out Scenario. The Santa Clarita Valley Cumulative Build-out Scenario is discussed in the section below).

Table 2.5-28
Cumulative Development Activity - DMS Buildout Scenario - Santa Clarita Valley Planning Area

Land Use Types	Pending Projects[a]	Approved Projects[b]	Recorded Projects[c]	Total
Single Family Units (detached)	7,356 du[d]	8,364 du	7,623 du	23,343 du
Multi-family Units	2,045 du	7,162 du	2,716 du	11,923 du
Mobile Homes	273 du			273 du
Commercial	305 ac[e]	102 ac	60 ac	467 ac
Industrial	195 ac	188 ac	200 ac	583 ac

Source: The County of Los Angeles Service Provider Report, Santa Clarita Valley Water Service Purveyors, October 16, 2002.

a Pending Projects: The County of Los Angeles and City of Santa Clarita subdivisions filed with the County of Los Angeles Department of Regional Planning, which are not yet recorded or expired.

b Approved: subdivisions approved by the County, which are not yet recorded or expired.

c Recorded: subdivisions recorded, but not yet built.

d du = dwelling units.

e ac = acres.

Table 2.5-29 illustrates cumulative water demand for the Santa Clarita Valley service area under the DMS Build-out Scenario.

Table 2.5-29
Scenario 1: DMS Buildout Scenario Demand for the Santa Clarita Valley (acre-feet per year)

	Average Years		Dry Years	
Santa Clarita Valley DMS Demand				
- Existing Plus DMS Demand	87,674		98,444	
Existing Demand		60,678		60,678
Pending Demand		6,861		6,861
Approved Demand		7,753		7,753
Recorded Demand		5,282		5,282
Other Demand (including Agriculture)[b]		7,100		7,100
Dry Year 10% Increase in Demand		0		8,767
- Specific Plan Demand	17,680		19,449	
Potable Demand		8645		8,645
Non-Potable Demand		9035		9,035
Dry Year 10% Increase in Demand		0		1,768
Additional Groundwater Banking Demand	4,500		0	
- Less Conservation	(9,825)		(10,808)	
Total [a]	**100,028**		**105,082**	

a Consistent with the UWMP, December 2000, demand is increased by approximately 10 percent in dry years.

b This demand figure reflects a reduction in agricultural demand that would occur as the projects shown in the County's DMS are built. By comparison, the "Other Demand" figure in Table 2.5-27 (15,320) would reduce to 7,100 AFY at DMS build-out. The UWMP, December 2000, pages 3-8 and 3-9 indicates that water demand in multi-dry years can be expected to decrease by approximately 20 percent through implementation of future water conservation practices in the CLWA service area.

Without the Newhall Ranch Specific Plan, future DMS water demand plus existing urban and other demand (including reduced agricultural demand) would be in the total amount of approximately 87,674 AFY. With the water demand of the Newhall Ranch Specific Plan added (17,680 AFY in an average year and 19,449 AFY in a dry year) and taking into consideration expected water conservation (9,825 AFY in an average year and 10,808 AFY in a dry year), total cumulative demand under the DMS Build-out Scenario would be approximately 100,028 to 105,082 acre-feet of water per year in an average and dry year, respectively. While no one can precisely predict the year build-out of all projects listed in the DMS would occur, this analysis estimates that DMS build-out would likely occur over the next 10 to 12 years.

(2) Santa Clarita Valley Cumulative Build-Out Scenario

CLWA and the other retail water purveyors in the Santa Clarita Valley have recently completed the UWMP, December 2000. The UWMP includes estimates of future water demand for the CLWA service area to the year 2020. The CLWA service area includes the Santa Clarita Valley and a portion of Ventura County. In all, the service area is approximately 192 square miles in size. The UWMP represents a comprehensive effort by CLWA and the local retail water purveyors to project future water demands and supplies. The UWMP presents several methods used to predict future water demand for the CLWA service area, including the per capita water-use analysis method, the extrapolation – service connection analysis method, and the econometric – land use analysis method. Each method is described in detail in Chapter 3 of the UWMP.

The UWMP indicates that the extrapolation service connection analysis method produces the most accurate predictions of near-term demand (i.e., 10 to 20 years), but does not account well for economic changes over the long-term (i.e., 50 years). However, the Santa Clarita Valley is not expected to reach build-out by the year 2020. Therefore, another method is needed to estimate the water demand for the Santa Clarita Valley at build-out. While no one can precisely predict when build-out of all developable land in Santa Clarita Valley will occur, Valley build-out is estimated to occur in approximately the year 2045. For purposes of this analysis, this timeframe will be used to predict water demand at build-out of the Valley.

In order to obtain the most accurate forecast of long-term water demand, the UWMP *combined* the extrapolation/service connection analysis with the econometric/land-use analysis to project the estimated increase in water demand through 2020. **Table 2.5-30**, below, presents the predicted water demand of the Santa Clarita Valley, including Newhall Ranch, in the year 2020.

As shown in **Table 2.5-30,** partial build-out of the Valley by the year 2020 would create an average year water demand of approximately 105,200 AFY. This water demand figure includes the water demand generated by the portion of the Specific Plan that would be expected to build out by that time (i.e., a land use water demand of approximately 10,608 AFY plus 2,700 AFY required for Saugus ASR injection in an average year). It also includes the water demand of additional urban development that would occur after the build-out of all projects listed in the County's DMS (i.e., approximately 14,818 AFY). In dry years, total demand would increase to approximately 112,750 AFY.

As shown in **Table 2.5-30,** again using this combined projection method, the total water demand in the Santa Clarita Valley by the year 2045, including the Specific Plan and other development over and above DMS, would be approximately 153,500 AFY in average years and approximately 163,900 AFY in dry years.

Table 2.5-30
Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Demand
(acre-feet per year) (Same as Table 2.5-4)

	Partial Buildout (year 2020)		Full Buildout (year 2045)	
	Average	**Dry**	**Average**	**Dry**
Buildout Demand				
- DMS Demand	87,674	87,674	87,674	87,674
Dry Year 10% Increase in Demand	0	8,767	0	8,767
- Newhall Ranch Specific Plan [a]	10,608	11,669	17,680	19,449
Potable Demand	5,187	5,187	8,645	8,645
Non-Potable Demand	5,421	5,421	9,035	9,035
Dry Year 10% Increase in Demand	0	1,061	0	1,768
- Additional Urban Demand	14,818	14,818	58,126	58,126
Dry Year 10% Increase in Demand	0	1,482	0	5,812
- Additional Groundwater Banking Programs	2,700	0	4,500	0
- Less Conservation	(10,600)	(11,660)	(14,480)	(15,928)
Total	105,200 [c]	112,750 [b]	153,500 [d]	163,900 [b]

a *Newhall Ranch buildout is assumed to occur from 2005 to 2030 at a rate of 864 dwelling units per year, with average water demands of 707 AFY.*

b *Consistent with the UWMP, December 2000, demand is increased by approximately 10 percent in dry years (102,500 x 1.10 = 112,750 and 149,000 x 1.10 = 163,900). The UWMP, December 2000, pages 3-8 and 3-9 indicates that water demand in multi-dry years can be expected to decrease by approximately 20 percent through implementation of water conservation practices in the CLWA service area.*

c *Source: UWMP, December 2000, Table 3-5, plus Saugus Groundwater Banking/ASR Program injection demand of 2,700 AFY in 2020 and 4,500 AFY in 2045.*

d *Source: UWMP, December 2000, Table 3-5, using a straight-line projection from 2020 to 2045, plus Saugus Groundwater Banking/ASR Program injection demand.*
Note: It is expected that the existing plus DMS demand would reach its peak in approximately 2012. The Newhall Ranch Specific Plan demand would begin in approximately 2005 and would reach its peak in approximately 2030. The additional urban demand would begin in approximately 2013, after DMS demand peaks, and would reach its peak in approximately 2045.

2.5.5.3 Newhall Ranch Water Supplies

(a) Specific Plan Water Supply Sources

In response to the trial court's decision and writ, this section identifies the water sources that will be available to meet the water demand generated by build-out of the Specific Plan. This section also discusses Newhall Ranch water supplies in conjunction with existing near-term development and future cumulative long-term development in the Santa Clarita Valley.

As discussed in **Section 2.5.5.2** above, the projected total water demand for the Newhall Ranch Specific Plan is 17,680 AFY in years with average rainfall (an "average year"). Of this total, 8,645 acre-feet per year must be met with potable supplies and 9,035 acre-feet per year could be met from non-potable supplies. Specific Plan land use demand increases by approximately 10 percent in years with lower than average rainfall (a "dry year") to a total of 19,449 acre-feet per year. In an average year, the Specific Plan also requires an additional 4,500 acre-feet per year to inject into the Saugus Groundwater Banking/ASR program. To meet demand, the Newhall Ranch water supply sources are as follows:

(1) Newhall Ranch Water Supplies

The following summary identifies the Newhall Ranch non-potable and potable water supplies needed to serve the Specific Plan site:

Non-Potable Supplies

Newhall Ranch Reclaimed Water. Reclaimed water (also referred to as "recycled water") from the Water Reclamation Plant ("WRP") proposed as part of the Newhall Ranch Specific Plan would be used to partially meet the non-potable water demands (e.g., irrigation) of the Specific Plan. The availability of this source would occur in stages, mirroring the staged construction of the WRP on the Specific Plan site.

CLWA Reclaimed Water. CLWA would serve the Specific Plan site with reclaimed water from existing upstream WRPs, consistent with CLWA's "Reclaimed Water System Master Plan," which is being implemented in stages. This reclaimed water supply would meet the remaining non-potable water demand of the Specific Plan.

Potable Supplies

Newhall Agricultural Water. The project applicant would meet potable water demands of the Specific Plan by using Newhall's historical alluvial groundwater produced in Los Angeles County which is presently committed to agriculture. No additional groundwater would be pumped over historical and present amounts; instead, the water presently used to irrigate crops would be treated and then used to partially meet the potable water needs of the Specific Plan.

Nickel Water. The applicant has secured water under contract with Nickel Family LLC in Kern County. 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 water would be delivered through the Kern County Water Agency and the SWP system. 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 20th 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.

Semitropic Groundwater Banking Project. The project applicant has entered into an agreement to reserve and purchase water storage capacity of up to 55,000 acre-feet in the Semitropic Water Storage District Groundwater Banking Project. Sources of water that can be stored in this banking project include, but are not limited to, Nickel Water, Newhall/SWP supplies, Castaic Creek Flood Flows, when available, CLWA SWP entitlement and other CLWA water supplies. The stored water could be extracted in dry years in amounts of up to 4,950 AFY from the project. This supply will be used as a water source for the Specific Plan in dry years only.

(2) Supplemental Water Supplies

As summarized above, there are sufficient water supplies to meet the Newhall Ranch Specific Plan demand. However, it remains important for the Santa Clarita Valley to hedge against potential regulatory and operational risks that may adversely affect the reliability of water supplies over the years. Although the region has planned and developed water supplies to maintain reliability even with a repeat of the recent statewide droughts, the Santa Clarita Valley water agencies are faced with impacts due to the potential future promulgation of increasingly stringent water quality standards, litigation over water supplies and allocations, environmental constraints and changes in SWP operational criteria. These regulatory and operational uncertainties are many times unanticipated developments and not easily quantifiable. However, these types of uncertainties have occurred throughout the history of California's development of water resources. It is expected that they will continue in the future. A major challenge in water planning is to determine the appropriate measures of insurance to safeguard against these uncertainties to enhance supply reliability. One way of providing supply insurance against such risks is to secure additional or supplemental water supplies. The summary provided below identifies some of the important supplemental water supplies that could be available to serve the Newhall Ranch Specific Plan:

CLWA SWP and Other Supplies. A relatively small portion of CLWA's existing SWP Table A water entitlement could be used, if needed, to supplement a portion of the Specific Plan's potable water need. As a SWP contractor, CLWA may also obtain additional SWP supplies from or through DWR in connection with other programs. The other SWP supplies include the Turnback Water Pool program, the Interruptible water program, Surplus water provisions and Carryover water. These SWP supplies are available in average/normal years as water supply sources for the Saugus Groundwater Banking/ASR program and the Semitropic Groundwater Banking project. However, the CLWA supplies are only considered a supplemental source for Newhall Ranch because the applicant has taken steps to secure its own primary potable water supplies.

Newhall/SWP Water. The project applicant has entered into an agreement to reserve and ultimately purchase 7,648 AFY of additional SWP water entitlement, which would be delivered through SWP facilities to CLWA and be available to serve the Specific Plan. The same SWP reliability parameters discussed above for CLWA SWP water would apply to this source of water.

Castaic Creek Flood Flows. Subject to approval by DWR, Castaic Creek flood flows could be used as a variable supply source in normal/average years, when available, for the Semitropic Groundwater Banking Project (through a water transfer), or for the Saugus Groundwater Banking/ASR program (from CLWA).

Semitropic Groundwater Banking Project. The project applicant has entered into an agreement to reserve and purchase water storage capacity of up to 55,000 acre-feet in the Semitropic Water Storage District Groundwater Banking Project. Sources of water that can be stored in this banking project include, but are not limited to, Nickel Water, Newhall/SWP supplies, and Other CLWA Supplies. The stored water would be extracted in dry years in amounts of up to 4,950 AFY from the project. Up to 865 AFY of this amount would be used as a primary water source during dry years. The remainder (4,085 AFY) would be available as a supplemental source.

Saugus Groundwater Banking/ASR Program. The Groundwater Banking/Aquifer Storage and Recovery (ASR) program, which involves installation of six wells in the Saugus aquifer, would be used to inject or "bank" 4,500 AFY of treated SWP water or other available water when those sources are readily available in normal/average years. During drought periods, when SWP water supplies or other available sources are curtailed, the ASR wells would then be used to recover up to 4,100 AFY to partially meet Specific Plan water demand. In lay terms, the program would operate much like a local bank. Water would be deposited (injected) into the groundwater basin and later withdrawn (recovered), when needed, in dry years.

These water supply sources are compared against the Specific Plan water demand in **Table 2.5-31,** Specific Plan Demand and Supply Comparison, and discussed in further detail below.

Table 2.5-31
Specific Plan Demand and Supply Comparison
(acre-feet per year) (Same as Table 2.5-1)

		Average	Dry
Newhall Ranch Water Demand			
- Potable Demand		8,645	8,645
- Non-Potable Demand		9,035	9,035
	Subtotal	17,680	17,680
- Dry Year 10% Increase in Demand [f]		0	1,768
	Total	**17,680**	**19,449** [f]
Additional Groundwater Bank Programs			
- Saugus Groundwater Banking/ASR Program		**4,500**	**0**
Newhall Ranch Water Supply			
- Non-Potable Supplies			
- Newhall Ranch Reclaimed Water		5,344	5,344
- CLWA Reclaimed Water		3,691	4,595
	Subtotal	9,035	9,939
- Potable Supplies			
- Newhall Ranch Agricultural Water		7,038	7,038
- Nickel Water [a]		1,607	1,607
- Semitropic Groundwater Banking Project		0	865
	Subtotal	8,645	9,510
	Total	**17,680**	**19,449**
Additional Groundwater Programs/Supplemental Supplies			
- CLWA SWP and Other Supplies [b]		4,500	0
- Newhall/SWP Water [b]		4,566	3,044
- Castaic Creek Flood Flows [e]		7,043	0
- Semitropic Groundwater Banking Project		0	4,085 [c]
- Saugus Groundwater Banking/ASR Program		0	4,100[c]
	Total	**16,109**	**11,229**
	Total Supplies	**33,789**	**30,678**
	Total Surplus [d]	**11,609**	**11,229**

a The applicant has secured water under contract with Nickel Family LLC in Kern County. 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 water would be delivered through the Kern County Water Agency and the SWP system.

b Consistent with the DWRSIM model, the figures show SWP entitlement (including the Newhall/SWP water entitlement of 7,648 AF per year) reduced in average years to approximately 59.7 percent of entitlement and in dry years to approximately 39.8 percent of entitlement. In any given year, the actual amount of SWP water deliveries could be above or below these model projections.

c As these programs are needed in dry years, they could be used up to the amounts indicated (as needed).

d The surplus shown above is the net water available for injection into banking programs (e.g., Semitropic Groundwater Banking Project, other groundwater banking projects, etc.).

*e See discussion in **Section 2.5.5.** Castaic Creek flood flows are a variable source of water that could be used, when available, in wet and average years, for the Semitropic Groundwater Banking Project (through water transfers) or the Saugus Groundwater Banking/ASR Program (from CLWA through Valencia Water Company).*

f In single dry years, demand could increase by 10 percent. In multi-dry years, actual demand is expected to decrease by approximately 20 percent as it did in 1991 due to implementation of voluntary conservation measures.

(b) *Newhall Ranch Non-Potable Supplies*

(1) Reclaimed Water Supplies

Newhall Ranch WRP. Water reclamation is defined as the treatment and disinfection of municipal wastewater to provide a water supply suitable for non-potable reuse (e.g., landscape irrigation). As described in the Newhall Ranch Final EIR, Section 5.0, the project applicant proposes to construct the Newhall Ranch WRP as a design component of the Specific Plan.

Based on the IRWD approach to calculating Specific Plan water demand, interior water demand estimates for the Specific Plan would be 5,630 AFY. The proposed Newhall Ranch WRP, however, was not sized based on the total Specific Plan interior water demand. Rather, the WRP was sized by using CSDLAC wastewater generation factors, resulting in a proposed treatment plant capacity of 6.9 mgd, which is equivalent to approximately 7,763 AFY (*see* Final EIR, Section 4.12, Wastewater Disposal for further discussion). If operated at full capacity, therefore, the proposed 6.9 mgd plant would generate 7,763 AFY of reclaimed water. Therefore, for purposes of this analysis and to acknowledge the differences between interior water demand calculations and wastewater generation calculations for the Specific Plan, the Final EIR estimated that the Specific Plan would generate between 5,630 and 7,763 acre-feet of reclaimed water per year. The variance or range in the amount of reclaimed water is the result of differing estimates of the internal/external distribution of household and business water uses.

The Specific Plan's goal is to facilitate construction of the Newhall Ranch WRP as a near zero-discharge facility. The WRP would be designed to treat approximately 5,630 to 7,763 AFY of tertiary-treated wastewater, which could be reclaimed to help meet the total non-potable water demand of 9,035 AFY for the Specific Plan (see Additional Analysis Section 3.3.2, Overview of Water Reclamation Plant, for a more detailed discussion). In an average rainfall year, all tertiary-treated wastewater from the Newhall Ranch WRP would be reclaimed for irrigation, except in the months of October through March. For these winter months, collectively, about 286 to 1,025 acre-feet of the treated wastewater would not be needed to meet non-potable demand. The reclaimed water exceeding the Specific Plan's non-potable demand would be discharged to the Santa Clara River.

The WRP's reclaimed water supply of 5,630 to 7,763 AFY, however, would not be sufficient to meet all of the Specific Plan's non-potable demand. As a result, the reclaimed water would need to be supplemented with 2,297 to 3,691 AFY (9,035 - 5,630 + 286 = 3,691; 9,035 - 7,763 + 1,025 = 2,297; assumes 286 to 1,025 AFY would be discharged) from other supply sources. Therefore, this analysis relies upon the lower reclaimed water range and projects that 5,344 AFY (5,630 - 286 = 5,344) of reclaimed water would be available from

the WRP, resulting in the need for an additional 3,691 AFY of non-potable water to meet the Specific Plan's non-potable demand of 9,035 AFY.

CLWA Reclaimed Water. As indicated above, the Specific Plan's remaining demand for non-potable water (3,691 AFY) would be met through CLWA by reclaimed water from existing upstream WRPs (i.e., Saugus WRP, located in District 26 and Valencia WRP, in District 32), consistent with CLWA's updated "Reclaimed Water System Master Plan." This additional reclaimed water supply would meet the remaining non-potable demand of the Specific Plan in an average year. In a dry year, the remaining non-potable demand of the Specific Plan would be 4,595 AFY, which would be met by CLWA reclaimed water.

In September 1993, CLWA completed a draft "Reclaimed Water System Master Plan" (Kennedy Jenks Consultants, 1993). The purpose of the plan was to evaluate and plan for the use of reclaimed water as a reliable source to meet a portion of the non-potable water demand in the Santa Clarita Valley. The plan outlined a multi-phase program to deliver a total of 10,000 acre-feet of reclaimed water to the Valley. CLWA's reclaimed water supply is projected to be 1,700 AFY by 2003. This amount is in addition to the reclaimed water originating at the Newhall Ranch WRP.[36] CLWA is currently preparing an updated Master Plan, which projects a total reclaimed water supply of 17,000 acre-feet. CLWA's reclaimed water supplies would be used to meet the Specific Plan's remaining projected non-potable demand of 3,691 AFY in an average year, and 4,595 AFY in a dry year.

(c) Newhall Ranch Potable Supplies

(1) Newhall Agricultural Water

The project applicant would meet the potable water demands of the Specific Plan by using the agricultural water that occurs in the Alluvial aquifer, and historically and presently used by the applicant for agricultural irrigation purposes on its land in Los Angeles County. No additional agricultural water would be pumped under this condition; instead, the water presently used to irrigate crops would be treated as required to meet Title 22 drinking water standards as set by the State Department of Health Services and then used to meet potable demand, as the agricultural areas are taken out of production. The water from this source would be used to partially meet the potable demand of the Specific Plan. The amount of available water is approximately 7,038 AFY in both average and dry years.

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36 UWMP, December 2000, CLWA, page 2-9.

The Newhall Land and Farming Company (Newhall) has been farming the land that includes portions of the Specific Plan area, and has drilled wells on its property and used the water from these wells to conduct its agricultural operations for many decades. Newhall owns and operates 26 wells to supply their agricultural water (see **Figure 2.5-24, Newhall Land and Farming Company Well Locations).** The total production of these wells are annually reported to the State Water Resources Control Board. Furthermore, the total amount of the agricultural water production by Newhall is reported in the annual Water Reports (see 1998, 1999 and 2000 Santa Clarita Valley Water Reports) which address the years 1980 through 2000. The average annual amount of water that has been pumped and used for agricultural operations in Los Angeles County from 1996 to 2000 is approximately 7,038 AFY as shown in **Table 2.5-32, Newhall Land and Farming Company Los Angeles County Agricultural Water Use.**

As discussed below, water use on Newhall's agricultural lands is calculated utilizing Southern California Edison (SCE) pump tests to calculate total acre-feet of pumpage. Total acre-feet of pumpage is then allocated to each crop based on crop type and historical use. Budgets are prepared each year for each crop and reconciled at the end of the year based on the actual acre-feet pumped. It is important to understand that there can be significant variations in actual water use each year primarily due to the actual number of acres farmed, the type of crops, the amount and distribution of rainfall, and temperatures. CIMIS (California Irrigation Management Information System) data, which is provided by University of California, is a tool that can be used to compare each crop's demand for water with the estimated water allocation to each crop.

Generally, water use for each crop tends to be significantly higher on Newhall's land in Los Angeles County than on land in Ventura County. The basic reason is that the water demand for crops tends to decline dramatically in cooler coastal areas, and Newhall's operations are the farthest inland in Ventura County and continue into Los Angeles County. In addition to a much warmer climate, Newhall's land in Los Angeles County receive less rainfall than other parts of the County, its soils are sandier and extremely sandy in some cases, and most of its irrigation systems are older and less efficient. In addition, Newhall often uses some water in Los Angeles County on dryland acreage for crop emergence, which increases overall water use, and is reflected in regular irrigated crops and is not shown separately. In addition, vegetables, other row crops, alfalfa and sudan pasture are grown on the Newhall Ranch in Los Angeles County year round with several growing cycles on vegetable acreage, which requires irrigation throughout the entire year.

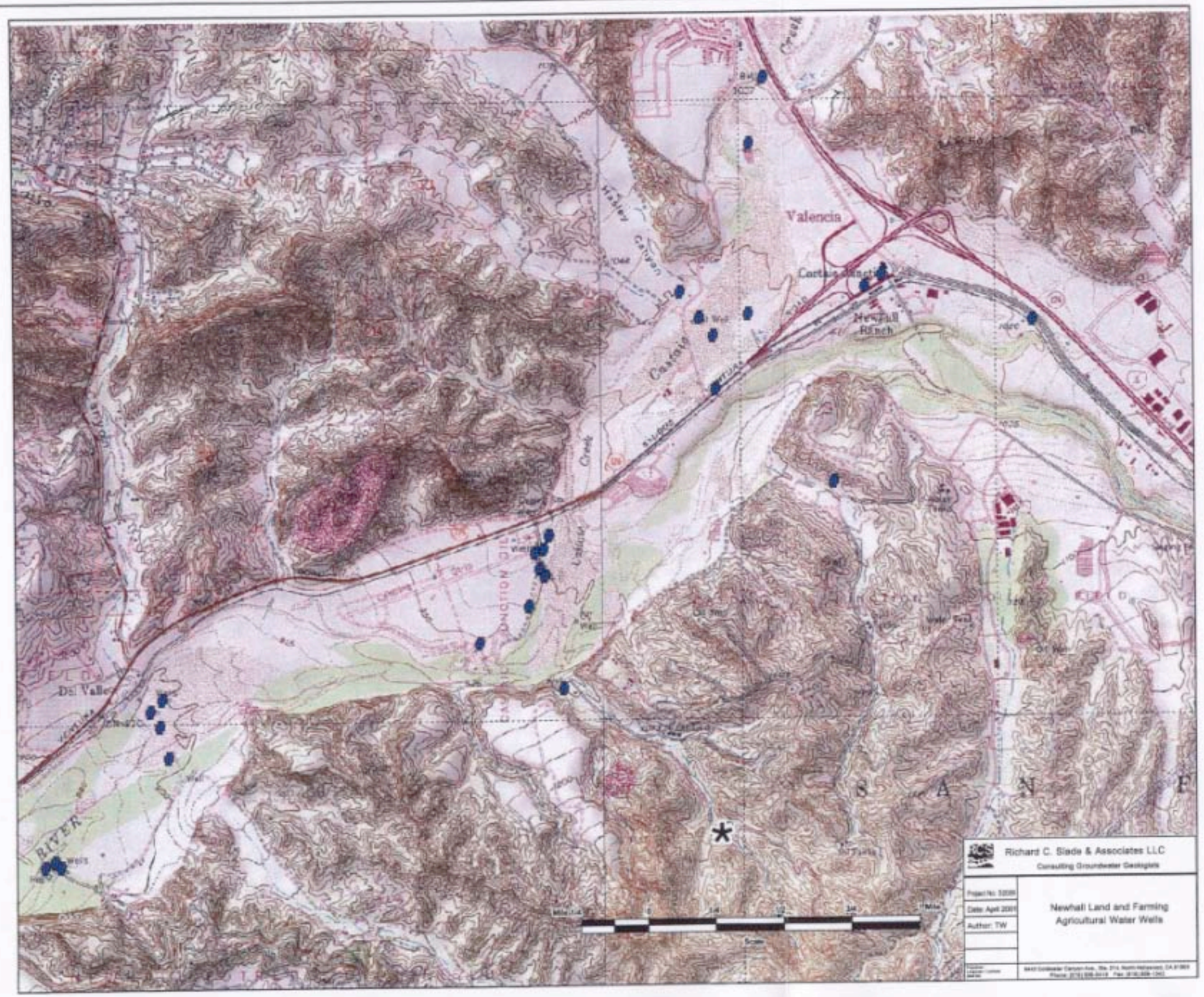
Using CIMIS, Newhall has calculated a comparison to its estimated water use by crop in Los Angeles County for the past five years (1996 to 2000) by relying on data from the CIMIS station in Piru (Ventura County) and weather data collected to determine the evapotranspiration (ET) of a base crop, which is

usually grass with full ground cover, and is used as the basis to calculate the actual water needs of other crops. The CIMIS program takes into consideration all weather factors, which determine a plant's water demand. The base ET for Piru for the most recent 12 months (prior to February, 2001) is 62.75 inches of water per year, which is the actual consumption of the base crop (see Exhibit 1 in *The Newhall Land and Farming Company's Agricultural Water Use Los Angeles County, California 1996 to 2000*, presented in **Appendix 2.5**). Annual evapotranspiration has varied from 56.39 inches to 63.08 inches over the past five calendar years. To convert that to the various crops in the area, crop coefficients are applied (again see Exhibit 1 in **Appendix 2.5**), which are established by the University of California to determine the ET of the specific crop for any given year. The application efficiency of the irrigation system in then considered to determine the acre-feet (or inches) of water required to meet the crop's needs. The application of efficiency is primarily a function of irrigation methods and soil types, which can vary greatly and can have a very large input on the amount of water, which must be pumped in order to deliver and make available to a plant the water it actually needs. Crop coefficients in Newhall's area for citrus are 0.7. Crop coefficients for most vegetables, alfalfa and sudan/pasture are 1.0. Newhall estimates its application efficiencies to be 70 percent for vegetables due primarily to the use of more efficient sprinkler application of water, 60 percent for citrus due to the use of contour furrow irrigation, and 50 percent for alfalfa and sudan/pasture due to strip check surface irrigation and very sandy soils. Given those assumptions, the water demands for Newhall's crops, based on the most recent 12 months of CIMIS data (year 2000), would be 7.41 acre-feet (AF)/acre for vegetables, 6.05 AF/acre for citrus, and 10.37 AF/acre for alfalfa and sudan/pasture.

To compare actual estimated water usage in Los Angeles County by crop, actual crop acres planted each year can be multiplied by the crop demand based on the CIMIS calculation. As shown below in **Table 2.5-32**, water demand in Los Angeles County based on the CIMIS calculation would have averaged 7,038 AF over the past five years.

See **Appendix 2.5** for specific information regarding Newhall's past and present use of agricultural water on its land in Los Angeles County.

The agricultural land would ultimately be taken out of farming production as it is converted to non-agricultural Specific Plan land uses. Since the water is already used to support Newhall's agricultural uses, there are not expected to be any significant adverse effects resulting from the water being used to partially meet the potable demands of the Specific Plan. The amount of well water that will be used to serve the potable demands of the Specific Plan would not exceed the amount of water historically used for the agricultural uses that are taken out of production. The agricultural water would be used to meet potable water demand of the Specific Plan, in combination with CLWA SWP water supplies.



NEWHALL RANCH™
Newhall Ranch Company

L E G E N D

WELL LOCATION

IMPACT SCIENCES INC

NORTH

FIGURE 2.5-24
NEWHALL LAND AND FARMING
AGRICULTURAL WATER WELLS

Table 2.5-32
Newhall Land and Farming Company
Los Angeles County Agricultural Water Use

Based on CIMIS (a)				
Year	Acres	Crop Type	Water Demand (AF)/acre	Water Use (AF)
2000	55	Alfalfa	10.37	570
	150	Sudan/pasture	10.37	1,556
	722	lsd.vegetables	7.41	5,350
		Subtotal		7,476
1999	55	Alfalfa	10.51	578
	150	Sudan/pasture	10.51	1,577
	709	lsd.vegetables	7.51	5,325
		Subtotal		7,479
1998	115	Alfalfa	9.4	1,081
	100	Sudan/pasture	9.4	940
	590	lsd.vegetables	6.71	3,959
		Subtotal		5,980
1997	160	Alfalfa	10.22	1,635
	103	Sudan/pasture	10.22	1,053
	663	lsd.vegetables	7.3	4,840
		Subtotal		7,528
1996	105	Alfalfa	10.21	1,072
	170	Sudan/pasture	10.21	1,736
	537	lsd.vegetables	7.3	3,920
		Subtotal		6,728
Average for Period				**7,038**

a *CIMIS = California Irrigation Management Information System. Does not include dryland farming or Christmas tree use.*
b *AF = acre-feet*

(2) Nickel Water

The applicant has secured water under contract with Nickel Family LLC in Kern County. 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 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. See **Appendix 2.5** for copies of the applicable agreements and attachments to the agreements. Because it is not subject to reductions in dry years, the Nickel water is an extremely reliable water supply source for the Specific Plan. The water would be delivered through the Kern County Water Agency and the SWP system.[37] A point of delivery

[37] California State Water Code §1810 requires that any available capacity in any water conveyance facility be made available if needed. Specifically, the Code section states "...neither the state, nor any regional or local public agency may deny a bona fide transferor of water the use of a water conveyance facility which has unused capacity, for the period of time for which that capacity is available, if fair compensation is paid for that use..."

agreement between the CLWA and DWR would be required to transmit the water between the KCWA and CLWA service areas.

As shown in **Table 2.5-33**, 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 20th 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.

Table 2.5-33
Nickel Water Use and Storage

Construction Year	Specific Plan Potable Water Demand (AFY)	Newhall Agricultural 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	346	6,692	"	1,607
2	692	6,346	"	3,214
3	1,037	6,001	"	4,821
4	1,383	5,655	"	6,428
5	1,729	5,309	"	8,035
6	2,075	4,963	"	9,642
7	2,421	4,617	"	11,249
8	2,766	4,272	"	12,856
9	3,112	3,926	"	12,856
10	3,458	3,580	"	16,070
11	3,804	3,234	"	17,677
12	4,150	2,888	"	19,284
13	4,495	2,543	"	20,891
14	4,841	2,197	"	22,498
15	5,187	1,851	"	24,105
16	5,533	1,505	"	25,712
17	5,879	1,159	"	27,319
18	6,224	814	"	27,319
19	6,570	468	"	30,533
20	6,916	122	"	32,140
21 [a]	7,262	(224)	Nickel Water	33,523
22	7,608	(570)	"	34,561
23	7,953	(915)	"	35,252
24 [b]	8,299	(1,261)	"	35,598
25	8,645	(1,607)	"	35,598

a *Starting in Year 21, 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. By year 25, both the Newhall Agricultural Water and the Nickel Water would be fully committed to the Specific Plan.*

b *By year 24, up to 35,598 AF of Nickel Water would be in storage.*

As indicated above, the Newhall Agricultural Water to be used as a potable water source for the Specific Plan (i.e., 7,038 AFY) would be completely committed to the Specific Plan by the 21st buildout year. At that time, approximately 224 of the 1,607 acre-feet per year of Nickel Water purchased by the applicant would be needed to meet the Specific Plan's potable water demand. By the 25th buildout year, both the Agricultural Water and the Nickel Water would be fully committed to the Specific Plan. When not needed to meet the potable water demand of the Specific Plan (in buildout years 1 through 20), the 1,607 AFY of Nickel Water would be available for storage in groundwater banking programs like the Semitropic Groundwater Bank, in which the applicant has purchased 55,000 AF of storage capacity. At an annual storage rate of 1,607 AF, a total of 35,598 AF of Nickel Water could be stored in groundwater banking facilities by buildout year 24. 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 buildout of the Specific Plan, it is expected that approximately 865 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 35,598 AF of Nickel Water in storage would be available to meet this need for over 160 years.

Kern River Restoration Program. Nickel acquired the Nickel water as a result of KCWA's Kern River Restoration and Water Supply Program ("the Restoration Program"). KCWA proposed the Restoration Program for the overall purpose of generating a broad local water supply, environmental and community benefits and drinking water benefits within the metropolitan Bakersfield area. The program included four primary components: (i) acquisition of the high flow Kern River Lower Water Right, including associated storage at Lake Isabella; (ii) construction of enough urban area water wells to achieve a target flow capacity in the Kern River; (iii) construction of water quality exchange facilities; and (iv) construction and acquisition of local facilities to enhance groundwater recharge and recovery opportunities. In short, the Restoration Program would allow KCWA to acquire the rights to certain Kern River high flow flood waters and create the physical and regulatory infrastructure necessary to capture and store those flood waters during wet years to provide a reliable water source for urban, agricultural, environmental and recreational uses during dry years. KCWA approved the Restoration Program in September 2000. A copy of the Initial Study and Proposed Negative Declaration for the Restoration Program is incorporated by reference and provided in **Appendix 2.5**.

The key component of the Restoration Program was the acquisition of the high flow Kern River Lower Water Right, also known as the La Hacienda and Garces pre-1914 water right to the Kern River ("the Water Right"). The Water Right water is estimated to be available when the Kern River is at or above 120 percent of normal runoff, or in about one out of every five years. While the Water Right delivery amounts are highly variable, the long-term average annual yield is estimated at 40,000 AFY. See **Appendix 2.5** for a copy of the Lower Kern River Water Rights agreement.

When the Restoration Program was proposed, three different entities held an interest in the Water Right: (i) Garces Water Company ("Garces"); (ii) Olcese; and (iii) Nickel.[38] Garces owned an undivided interest in the Water Right. Olcese owned the remaining interest; however, pursuant to a 1981 agreement between Olcese and Nickel's predecessors in interest, Olcese's interest in the Water Right was subject to Nickel's right to use any portion of Olcese's water that was excess to Olcese's needs. Consequently, KCWA's proposal to acquire the Water Right as part of the Restoration Program amounted to a proposal to acquire it from Garces, Olcese and Nickel. Upon approval of the Restoration Program, KCWA acquired all three parties' interests in the Water Right, acquiring Garces' interest first and then Olcese's and Nickel's.

KCWA acquired both Olcese's and Nickel's respective interests in the Water Right pursuant to the "Contract to Transfer the Kern River Lower River Water Rights," made as of January 23, 2001 ("the Water Right Contract"). In return for transferring its interest in the Water Right to KCWA, Nickel received a substantial cash payment as well as certain non-cash consideration, including the 10,000 AFY of KCWA water, which Nickel was then free to sell to third parties. The provisions of the Water Right Contract are discussed in greater detail below.[39]

Water Right Contract. Pursuant to the Water Right Contract, Nickel and Olcese agreed to transfer to KCWA all of their right, title and interest in the Water Right, as more completely described in Exhibit A-1 of the Water Right Contract (see **Appendix 2.5**). In return, Nickel and Olcese received cash payments and other consideration. See Water Right Contract, Sections 4.2, 4.3 and 4.4. As discussed above, Nickel's non-cash consideration for the transfer included 10,000 AFY of KCWA water at the Tupman turnout of the California Aqueduct (Reach 13B as illustrated on **Figure 2.5-25, State Water Project Reaches**). The Water Right Contract identifies that water as the "Agency Transfer Water," and defines it as: "10,000 acre-feet of water annually, to be provided by the Agency to Nickel for delivery and sale to third parties from the California Aqueduct." *Id.* at Sections 1.10 and 4.4. Section 2.1 of the Water Right Contract states that Nickel intends to sell the Agency Transfer Water "both within and outside of Kern County."

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38 Garces, Olcese and Nickel were the latest in a long line of legal owners of the Water Right, the original ownership being established in the Miller-Haggin Agreement of July 28, 1888. For a complete discussion of the contractual and ownership history of the Water Right, please see the letter from Kronick, Moskovitz, Tiedemann & Girard to Thomas N. Clark, dated February 22, 2001, provided in **Appendix 2.6** to this report.

39 KCWA's funding for the Restoration Program was made available by the California "Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Act." The Governor's Budget Act for 2000, Chapter 52, Statutes of 2000, appropriated to the Department of Water Resources local assistance grant funds in the amount of $161,544,000.00, payable from the interim Reliable Water Supply and Water Quality Infrastructure and Management Subaccount. The Restoration Program was selected to receive $23,000,000.00 from the subaccount, and a significant portion of that money went to acquire the Water Right from Garces, Olcese and Nickel.

Pursuant to the terms of the contract, the 10,000 AFY delivered to Nickel must be high quality water, acceptable for delivery into the California aqueduct. *Id.* at Section 4.6. In addition, delivery of the entire 10,000 AFY to Nickel is mandatory, unaffected by annual hydrologic conditions. *Id.* at Section 4.4. Consequently, the 10,000 AFY entitlement is not subject to unpredictable reductions in quality or quantity typical of other water sources. These characteristics make the Nickel water a dependable water supply source.

As shown by the definition of "Agency Transfer Water," the parties to the Water Right Contract understood that Nickel would sell the 10,000 AFY to third parties. Other provisions of the contract indicate that Nickel's right to do so is unconditional. For example, Section 4.9 states: "Any sale of the Agency Transfer Water shall be at the sole discretion and direction of Nickel." The contract also confirms that KCWA had a legal right to the Agency Transfer Water and the legal right to exchange the water as provided in the Water Right Contract. *Id.* at Section 7.2(i). In addition, Section 4.9 of the Water Right Contract, "Agency Transfer Water Sales," states that KCWA may assist Nickel in marketing the Agency Transfer Water and that such assistance may include "entering into contracts for the sale of the Agency Transfer Water and efforts to obtain the approval, cooperation and assistance of DWR and the State Water Contractors in obtaining any necessary approvals from regulatory agencies to effect such sales or transfers."

Other provisions of the Water Right Contract further increase the availability and reliability of the Nickel water as a Specific Plan water supply source. Section 4.4 of the contract states that, in delivering the water for Nickel's use, KCWA "shall use its best efforts to obtain and maintain approvals from the DWR for delivery of any Agency Transfer Water into the California Aqueduct, and if such approvals are not obtained after reasonable efforts the parties shall, in good faith, negotiate alternative mechanisms for delivery of Agency Transfer Water." Section 4.7 states: "The ten thousand (10,000) acre-feet of Agency Transfer Water provided to Nickel shall be transported within the California Aqueduct to the full extent of the Agency's right to use [the] Aqueduct." And, pursuant to Section 4.8, KCWA agreed to "schedule all Agency Transfer Water deliveries with the DWR at the same time and in the same manner as the Agency schedules deliveries of SWP Entitlement Water to the Agency's Member Units[.]"[40]

Newhall/Nickel Water Purchase Agreement: The applicant obtained an interest in the Nickel Water pursuant to the "Option and Water Purchase Agreement," executed between the applicant and Nickel in October 2002. A copy of the Water Purchase Agreement is provided in **Appendix 2.5** to this report.

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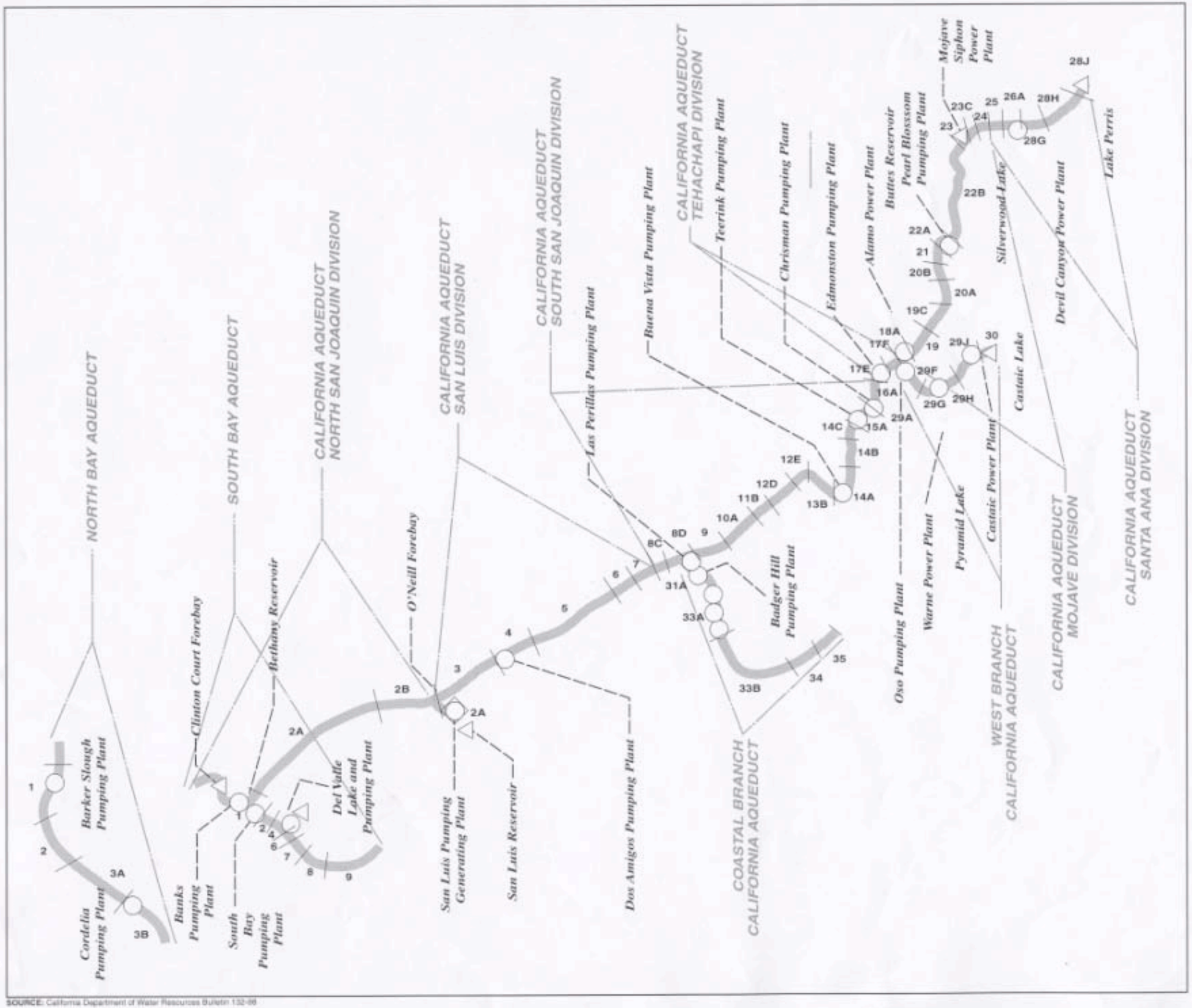
40 Copies of all agreements relating to the Nickel Water are incorporated by reference and provided in **Appendix 2.5** to this report.

Under the terms of the Water Purchase Agreement, the applicant acquired an option to purchase the use of 1,607 AFY of the 10,000 AFY of water that Nickel obtained from KCWA. The applicant has exclusive use of the 1,607 AFY of water on an annual basis for an initial term of 35 years. After the first 35-year term expires, the applicant may extend the term of the Water Purchase Agreement for another 35 years, provided that certain conditions are met. The applicant is obligated to purchase, and Nickel is obligated to sell, the 1,607 AFY of water each year for a purchase price of $763,245 for the first annual delivery of the Nickel water, with purchase price increases each subsequent year by a set multiplier based on the price in effect the previous year.

The terms of the Water Purchase Agreement also require that Nickel will make the Nickel water available to the applicant at the Tupman turnout, as defined in the KCWA Agreement. Nickel and the applicant have also agreed to jointly request that KCWA and CLWA enter into a "point of delivery" agreement with DWR approving delivery of a portion of KCWA's SWP Table A water entitlement, used as SWP exchange water, to CLWA so that the Nickel water can be delivered to CLWA for the entire 35-year term. In addition, Nickel has agreed to cooperate with the applicant in obtaining any other necessary approvals for the transfer of the Nickel water for use by the applicant. Nickel has further acknowledged that the applicant intends to use the Nickel water on the applicant's property within the CLWA and/or Valencia Water Company service areas.

(3) Semitropic Groundwater Banking Project

Semitropic Water Storage District (the "District") provides SWP supplies for agricultural irrigation on land located in Kern County immediately east of the California Aqueduct. Using groundwater storage capacity of one million acre-feet, the District has developed a groundwater banking program. The District operates the program by taking additional SWP supplies in wet years and returning the water in dry years. As part of this dry-year return, the District can leave its entitlement in the Aqueduct for use by its banking partners. The District has also constructed facilities so that groundwater can be pumped into the District's canal and, through reverse pumping plants, actually delivered to the California Aqueduct. The District currently has five banking partners. The total amount of storage under contract is approximately one million acre-feet. The stored water may be extracted in annual amounts of up to 90,000 acre-feet for all banking partners.



SOURCE: California Department of Water Resources Bulletin 132-98

NEWHALL RANCH™
Newhall Ranch Company

L E G E N D

NORTH BAY AQUEDUCT

1 Barker Slough through Fairfield/Vacaville Turnout
2 Fairfield/Vacaville Turnout to Cordelia Forebay
3A Cordelia Forebay through Benicia and Vallejo Turnouts
3B Cordelia Forebay through Napa Turnout Reservoir

SOUTH BAY AQUEDUCT

1 Bethany Reservoir through Altamont Turnout
2 Altamont Turnout through Patterson Reservoir
4 Patterson Reservoir to Del Valle Junction
5 Del Valle Junction through Lake Del Valle
6 Del Valle Junction through South Livermore Turnout
7 South Livermore Turnout through Vallecitos Turnout
8 Vallecitos Turnout through Alameda-Bayside Turnout
9 Alameda-Bayside Turnout through Santa Clara Terminal Facilities

CALIFORNIA AQUEDUCT

North San Joaquin Division

1 Delta through Bethany Reservoir
2A Bethany Reservoir to Orestimba Creek
2B Orestimba Creek to O'Neill Forebay

San Luis Division

3A San Luis Dam, Reservoir and Pumping-Generating Plant
3 O'Neill Forebay to Dos Amigos Pumping Plant
4 Dos Amigos Pumping Plant to Panoche Creek
5 Panoche Creek to Five Points
6 Five Points to Arroyo Pasajero
7 Arroyo Pasajero to Kettleman City

South San Joaquin Division

8C Kettleman City through Milham Avenue
8D Milham Avenue through Avenal Gap
9 Avenal Gap through Twisselman Road
10A Twisselman Road through Lost Hills
11B Lost Hills to 7th Standard Road
12D 7th Standard Road through Elk Hills Road
12E Elk Hills Road through Tupman Road
13B Tupman Road to Buena Vista Pumping Plant
14A Buena Vista Pumping Plant through Santiago Creek
14B Santiago Creek through Old River Road
14C Old River Road to Teerink Pumping Plant
15A Teerink Pumping Plant to Chrisman Pumping Plant
16A Chrisman Pumping Plant to Edmonston Pumping Plant

CALIFORNIA AQUEDUCT (continued)

Tehachapi Division

17E Edmonston Pumping Plant to Porter Tunnel
17F Porter Tunnel to Junction, West Branch, California Aqueduct

Mojave Division

18A Junction, West Branch, California Aqueduct through Alamo Power Plant
19 Alamo Power Plant to Fairmont
19C Buttes Junction through Buttes Reservoir
20A Fairmont through 70th Street West
20B 70th Street West to Palmdale
21 Palmdale to Littlerock Creek
22A Littlerock Creek to Pearblossom Pumping Plant
22B Pearblossom Pumping Plant to West Fork Mojave River
23 West Fork Mojave River to Silverwood Lake
23C Mojave Siphon Power Plant
24 Cedar Springs Dam and Silverwood Lake

Santa Ana Division

25 Silverwood Lake to South Portal, San Bernardino Tunnel
26A South Portal, San Bernardino Tunnel through Devil Canyon Power Plant
28G Devil Canyon Power Plant to Barton Road
28H Barton Road to, Lake Perris
28J Perris Dam and Lake Perris

West Branch, California Aqueduct

29A Junction, West Branch, California Aqueduct through Oso Pumping Plant
29F Oso Pumping Plant through Quail Embankment
29G Quail Embankment through Warne Power Plant
29H Pyramid Dam and Lake
29J Pyramid Lake through Castaic Power Plant
30 Castaic Dam and Lake

Coastal Branch, California Aqueduct

31A Avenal Gap to Devil's Den Pumping Plant
33A Devil's Den Pumping Plant through Tank 1
33B Tank 1 through Cholero Valley Turnout
34 Cholero Valley Turnout through Lopez Turnout
35 Lopez Turnout through Guadalupe Turnout

NOT TO SCALE

IMPACT SCIENCES INC

FIGURE 2.5-25
STATE WATER PROJECT REACHES

The District has recently completed environmental documentation to construct new storage and return facilities. These new facilities will provide the District with the additional capability to extract and pump-back to the California Aqueduct approximately 200,000 acre-feet annually. The total return capability of the District in dry years is expected to be approximately 290,000 acre-feet.

The project applicant has entered into an agreement to reserve and purchase water storage capacity of up to 55,000 acre-feet in the Semitropic Water Storage District Groundwater Banking Project (see **Appendix 2.5** for a copy of the agreement). Sources of water that can be stored in this banking project include, but are not limited to, Nickel Water, Newhall/SWP supplies, Castaic Creek flood flows, when available, CLWA SWP entitlement and other CLWA supplies. The stored water could be extracted in dry years in amounts of up to 4,950 AFY from the project. This supply will be used as a water source for the Specific Plan in dry years only.

(d) Supplemental Water Supplies

As summarized above, there are sufficient water supplies to meet the Newhall Ranch Specific Plan demand. However, it remains important for the Santa Clarita Valley to hedge against potential regulatory and operational risks that may adversely affect the reliability of water supplies over the years. Although the region has planned and developed water supplies to maintain reliability even with a repeat of the recent statewide droughts, the Santa Clarita Valley water agencies are faced with impacts due to the potential future promulgation of increasingly stringent water quality standards, litigation over water supplies and allocations, environmental constraints and changes in SWP operational criteria. These regulatory and operational uncertainties are many times unanticipated developments and not easily quantifiable. However, these types of uncertainties have occurred throughout the history of California's development of water resources. It is expected that they will continue in the future. A major challenge in water planning is to determine the appropriate measures of insurance to safeguard against these uncertainties to enhance supply reliability. One way of providing supply insurance against such risks is to secure additional or supplemental water supplies. The following sections identify some of the important supplemental water supplies that could be available to serve the Newhall Ranch Specific Plan.

(1) CLWA SWP and Other Supplies

CLWA is the water wholesaler that provides imported water to the Santa Clarita Valley through the SWP. CLWA currently holds SWP entitlement to 95,200 AFY. The reliability of SWP water is based on the parameters presented in the State Department of Water Resources (DWR) "DWRSIM" model. The model is used by DWR to predict reliability of the SWP. The DWRSIM model indicates that in an average year

approximately 59.7 percent of the entitlement to SWP water would be available. In a dry year, the model indicates that approximately 39.8 percent of the SWP entitlement would be available. In any given year, the actual amount of SWP water deliveries could be above or below these model projections. For further information regarding the SWP, CLWA SWP supplies, and SWP deliveries and reliability, please refer to **Subsection 2.5.4.4** of this report.

The Valencia Water Company is one of four retail water purveyors in the Santa Clarita Valley. The Specific Plan site is located within CLWA's service area (see, **Figure 2.5-1**, previous), and partially within the current service area of the Valencia Water Company (see, **Figure 2.5-3**,previous). Valencia Water Company is an investor-owned water utility regulated by the California Public Utilities Commission ("CPUC").

CLWA's service area includes Newhall Ranch. The Valencia Water Company has stated that it will serve the Specific Plan site, that it is the most logical water retailer to provide water service to the Specific Plan site, and that it would take the steps necessary to add the entire Specific Plan site to its service area in accordance with applicable PUC rules and regulations. Given the combined resources of these two water agencies, one of the supplemental water sources for the Specific Plan could be water delivered by CLWA through its SWP facilities. The amount of SWP water to be used for the Specific Plan as a supplemental source, if any, would vary annually, depending upon available supplies and need.

As a SWP contractor, CLWA may also obtain additional SWP supplies from or through DWR in connection with other programs. The other SWP supplies include the Turnback Water Pool program, the Interruptible water program, Surplus water provisions and Carryover water. These SWP supplies are available in average/normal years as water supply sources for the Saugus Groundwater Banking/ASR program and the Semitropic Groundwater Banking project. However, the CLWA supplies are only considered a supplemental source for Newhall Ranch, because the applicant has taken steps to secure its own primary potable water supplies. For further information regarding CLWA SWP entitlement and other SWP supplies, please refer to **Section 2.5.4** of this report.

(3) Newhall/SWP Water Supplies

The Newhall Land and Farming Company has entered into two agreements for the Reservation of Water ("Agreement or Agreements") effective March 2001, with two owners of land located within the boundaries of the Berrenda Mesa Water District in Kern County. As landowners within the Berrenda Mesa Water District, the two owners hold rights to water supply from the District that are derived from

the SWP through DWR and the Kern County Water Agency ("KCWA"). Copies of the two Agreements are provided in **Appendix 2.5** to this report.

The two owners have determined that 7,648 acre-feet of SWP entitlement available to them from the District is surplus to their permanent needs (i.e., "surplus SWP water"). The owners wish to market the surplus SWP water through the District for use by Newhall pursuant to the terms of the Agreements. Under the terms of the Agreements, the parties acknowledge that the Berrenda Mesa Water District will be the party to execute the definitive agreements for the sale of the surplus SWP water from the District to the appropriate SWP contractor for the benefit of Newhall, and that, at such time as the Agreements are consummated, Berrenda Mesa Water District is required to follow its rules, regulations and procedures with respect to the sale of the surplus SWP water.

For purposes of the Agreements, the surplus SWP water includes all rights and costs associated with the surplus SWP water, including without limitation, the associated storage rights in SWP reservoirs and all rights and capacity in the California Aqueduct necessary to convey the surplus SWP water to the District's historic point(s) of diversion on the California Aqueduct.

Pursuant to the terms of the Agreements, Newhall has made arrangements to: (a) reserve the surplus SWP water; (b) compensate the two landowners for reserving the surplus SWP water and for refraining from selling or offering it; and (c) ultimately to purchase the surplus SWP water through an SWP contractor for the benefit of the Newhall Ranch Specific Plan. Newhall's acquisition of the surplus SWP water is intended to be one component in securing water supplies for its property and, in doing so, increasing the availability and reliability of water in the CLWA water service area where the Specific Plan site is located.

As part of the Agreements, the parties further acknowledge that, in order to finalize the intended sale of the surplus SWP water from the Berrenda Mesa Water District to an SWP contractor for the benefit of Newhall, several actions must be taken, including: (a) the execution of an amendment to the existing Agreement between the District and the Kern County Water Agency; (b) the execution of an amendment to the existing water supply agreement between the Kern County Water Agency and DWR; (c) the execution of a purchase and sale agreement for the surplus SWP water between the District and the SWP contractor designated by Newhall; and (d) DWR's approval of the water transfer to the designated SWP contractor. However, the parties further agree to cooperate with each other to accomplish the above-actions, including the sellers' agreement to use their diligent good-faith reasonable efforts to cooperate with and reasonably assist Newhall in consummating the ultimate purchase of the surplus SWP water.

For purposes of this analysis, Newhall's purchase of rights to the 7,648 AFY of surplus SWP water entitlement would be reduced in average/normal years to approximately 59.7 percent of entitlement (or 4,566 AFY) and in dry years to approximately 39.8 percent of entitlement (or 3,044 AFY). This analysis is consistent with DWR's modeling projections using the DWRSIM model. In any given year, the actual amount of SWP water deliveries could be above or below these model projections.

(4) Castaic Creek Flood Flows (Stormwater)

Introduction. This section summarizes the current proposal made by United Water Conservation District, The Newhall Land and Farming Company, the County of Los Angeles and Newhall County Water District (collectively known as the "Downstream Water Users") to DWR for the beneficial use of local flood flows originating from Castaic Creek. This section also provides important background information regarding the conservation, storage and release of the Castaic Creek flood flows for the beneficial use of that water by the Downstream Water Users. The Newhall Land and Farming Company ("Newhall"), one of the named Downstream Water Users, intends to use its contractual rights to a percentage share of the Castaic Creek flood flows in connection with the Newhall Ranch Specific Plan. Consistent with the trial court's decision and writ, this section includes information showing how Newhall's contractual rights to the flood flows could be used as a supplemental water supply source for groundwater banking programs.

As mentioned above, subject to approval by DWR, Castaic Creek flood flows could be used in normal/average years, when available, as a water source for the Semitropic Groundwater Banking project (through a water transfer), or for the Saugus Groundwater Banking/ASR program from CLWA through Valencia Water Company. This supply is variable; in some years, the flood flows are not available.

Proposal. The Downstream Water Users have submitted a written proposal to DWR involving the conservation of the Castaic Creek flood flows for use in the Santa Clara River watershed that would otherwise waste to the ocean. As discussed in detail below, the proposal involves an addendum to the existing 1978 Agreement between DWR and the Downstream Water Users. Under the existing 1978 Agreement, the flood flows are stored in Castaic Dam and are capable of being released from the Outlet Works of Castaic Dam into Castaic Creek to flow into the Santa Clara River. The addendum would add two additional locations where stored Castaic Creek flood flows could be delivered. Under the proposed addendum, delivery of the Castaic Creek flood flows would be provided at not only the Castaic Dam Outlet Works, but also at the SWP turnout facilities in Castaic Lake and the Pyramid Dam Outlet Works.

The Downstream Water Users have submitted a written proposal, along with the following addendum language, to DWR:

> *Delivery of flood flows, as defined in Section B.5.b. [1978 Agreement], shall be provided at the following locations pursuant to the instruction and operating procedure described in this Agreement: Castaic Dam Outlet Works, State Water Project turnout facilities in Castaic Lake and Pyramid Dam Outlet Works.*

Based on historical records, stored Castaic Creek flood flows have not been released in most years to Castaic Creek and the Santa Clara River and, therefore, the proposal would not have any significant impact on existing conditions in Castaic Creek or the Santa Clara River. In addition, the proposal would not require modification or construction of any new facilities. The proposal simply acknowledges that the existing 1978 Agreement, which currently requires that the stored flood flows be released into Castaic Creek, should be changed to add two additional points of diversion of the water so that the Downstream Water Users are able to more beneficially use the stored flood flows.

In addition to the proposed addendum, the Downstream Water Users have submitted a letter to the director of DWR (Thomas M. Hannigan) indicating their mutual support for the proposed addendum. The Downstream Water Users' written proposal to DWR, including exhibits, is included in its entirety in **Appendix 2.5** to this Additional Analysis.

Background. The Downstream Water Users are parties to the 1978 Agreement with DWR to store natural inflow from storms captured and stored by Castaic Dam. Castaic Dam is a state-owned facility operated by DWR as part of the West Branch of the SWP facilities. In addition to serving as the terminal reservoir for the West Branch, construction of the dam was recognized as impeding the natural flows generated by Castaic Creek from annual storm events occurring in the watershed above Castaic Dam. In the early stages of the SWP, it was apparent that planners of the SWP did not propose to store these flows as part of the SWP. Over the years, discussions were held between DWR and the impacted Downstream Water Users, which culminated in the 1978 Agreement.

The 1978 Agreement provides for the storage, conservation and release of all natural inflow originating in the watershed above Castaic Dam. The 1978 Agreement defines two types of natural inflow: local percolated water ("local water") and local flood flows ("flood flows"). Local water is defined as those flows originating in the watershed above Castaic Dam occurring at a rate below 100 cubic feet per second ("cfs"). Flood flows are defined as those flows occurring at a rate above 100 cfs and are the subject of the proposed addendum with DWR.

1966 Agreement/1967 Agreement. Prior to construction of the Castaic Dam, it was recognized that construction of the dam would capture the natural flow and underflow of Castaic Creek and interfere with the historic use of these waters by Newhall and other Downstream Water Users. Therefore, in 1966, DWR and Newhall entered into an agreement relating to the natural flow of Castaic Creek. The purpose of the 1966 Agreement was to preserve to Newhall and other downstream users the reasonable and beneficial flows of Castaic Creek to the extent their uses existed before construction of the Castaic Dam. The 1966 Agreement sets forth the requirements for the release of natural flow that would preserve and satisfy the alluvial capacity of Castaic Creek. In addition, the United Water Conservation District, one of the Downstream Water Users, entered into an agreement with DWR in 1967. Like the 1966 Agreement, United's agreement with DWR was entered into to allay United's concerns that construction of the SWP facilities may interfere with United's historic use of these waters.

Both of these agreements (1966/1967 agreements) are part of the Downstream Water Users' proposal to DWR (Exhibits 1 and 2) and are included in **Appendix 2.5** to this Additional Analysis.

1978 Agreement. In 1978, DWR entered into the agreement with the Downstream Water Users regarding the conservation of flood flows originating in the watershed above Castaic Dam that, without the dam, would have wasted to the ocean without being beneficially used ("the 1978 Agreement"). The purpose of the 1978 Agreement is to ensure that locally generated waters would be conserved for beneficial use within the Santa Clara River watershed.

The 1978 Agreement contains provisions relating to the release of local waters and flood flows, as defined, from October 1 through October 30 of each year. Local water is released in an amount that approximately equals the amount of water entering Castaic Lake when inflow is less than 100 cfs. However, when the local water entering the reservoir exceeds 100 cfs and sufficient storage capacity exists in Castaic Dam, releases to Castaic Creek are discontinued and all inflow is stored in the reservoir. The 1978 Agreement assumes that 25 percent of the total inflow in excess of 100 cfs would have historically percolated into the groundwater basin and that 75 percent of the total would have wasted to the ocean. This water is defined as flood flows because it is produced during storm events that generate runoff in excess of the ability of that water to percolate into of the groundwater basin and, if not captured, would waste to the ocean.

Local water and flood flows entering Castaic Dam from May 1 through September 30 are also stored, subject to the terms of the 1978 Agreement. Fees and charges are specified in the 1978 Agreement. Any stored natural inflow remaining in Castaic Dam after May 1 of each year becomes the property of DWR.

The 1978 Agreement is part of the Downstream Water Users' proposal to DWR (Exhibit 3) and is included in **Appendix 2.5** to this Additional Analysis.

October 1978 Agreement. The specific percentage allocation of stored flood flows among the Downstream Water Users is set forth in a separate agreement entered into by the Downstream Water Users, dated October 24, 1978. The allocation is set forth in **Table 2.5-34.**

Table 2.5-34
Castaic Creek Allocation (by percentage)

Downstream Water Use	Allocation (%)
United Water Conservation District	48.000%
The Newhall Land and Farming Company	44.867%
the County of Los Angeles	4.471%
Newhall County Water District	2.662%

*Source: October 24, 1978 Agreement among Downstream Water Users (see **Appendix 2.5** [Exhibit 4]).*

Under this agreement, if one of the Downstream Water Users elects not to receive its share of the stored water, the others may receive the water on a pro-rata basis. The basic intention of this agreement, again, is to minimize the loss of flood flows to the ocean and to ensure, to the extent possible, the beneficial use of the water within the Santa Clara River watershed.

The State Water Resources Control Board ("SWRCB") has long recognized the rights of the Downstream Water Users as set forth in the October 1978 Agreement and also the rights of the parties to amend the agreement.

Operational Procedures For Implementing Proposal. The Downstream Water Users maintain existing records necessary to carry out the operational requirements of this proposal. When storage capacity exists in Castaic Dam and flood flows are generated, the Downstream Water Users would promptly notify DWR and designate the location for delivery of the stored flood flows. Three of the four Downstream Water Users (the County of Los Angeles, Newhall County Water District and The Newhall Land and Farming Company) desire to have their pro-rata share of the flood flows delivered at SWP turnouts located in Castaic Dam. DWR would account for and credit the delivery of flood flows. The United Water Conservation District, one of the Downstream Water Users, has proposed a method of operation for delivery of their share of the flood flows to the Pyramid Lake Reservoir.

Table 2.5-35, provides information regarding the occurrence of flood flows from 1977 through 2000. For the most part, delivery of flood flows would occur during wet and average year weather cycles when surplus SWP water is expected to be available from the SWP. As a result, the Downstream Water Users' proposal would not adversely impact DWR or increase costs for other SWP contractors, because SWP water supplies would not be limited in wet years when flood flows are generated. As shown on **Table 2.5-35**, Newhall's allocated share of the Castaic Creek flood flows varies from a low of "0" in some years to a high of "30,257" AFY in 1978. **Table 2.5-35** also shows that Newhall's average share of the Castaic Creek flood flows is 7,043 acre-feet in wet years.

Benefits of the Flood Flows. The opportunity for using the Castaic Creek flood flows is consistent with water planning objectives of increased reliability, improved water quality, conjunctive use and voluntary water transfers. In addition, by adding delivery of flood flows at two additional locations, the use of the flood flows will, among other things: (a) conserve flood flows that occur during high run-off periods for use within the Santa Clara River watershed, which prevents the water from being wasted to the ocean; (b) provide opportunities for the Downstream Water Users to implement conjunctive use programs that would store flood flows during wet years in a groundwater basin for later use during dry years; (c) direct delivery of flood flows during wet and average years when a significant quantity of water is present in the Santa Clara River, and when the Downstream Water Users are experiencing surplus water supplies with respect to SWP contractor requests for SWP supplies; (d) not result in any physical change to Castaic Creek, the Santa Clara River or the environment primarily because flood flows historically have not been released to the Santa Clara River under existing conditions; (e) not increase the costs to other SWP contractors; and (f) resolve long-standing discussions between DWR and the Downstream Water Users over the use of local flood flows. The use of the flood flows, as proposed, is supported by all of the Downstream Water Users, including United Water Conservation District (see **Appendix 2.5**).

The potential of utilizing Castaic Creek flood flows, when available, was recently demonstrated in March 2001. At or about that time, CLWA and the United Water Conservation District (United) agreed, subject to approval by DWR, that United's share of this year's flood flows could be credited to CLWA, in return for CLWA providing replacement water to United in some future year. (The amount of the flood flows in 2001 was a total of approximately 10,000 acre-feet.) For further information regarding the proposed water transfer involving Castaic Creek flood flows, please refer to **Appendix 2.5** of this report.

Table 2.5-35
Historical Assessment of Conserved Castaic Creek Flood Flows

						Flood Flow Allocations				
Water Year[1]	Natural Inflows [acre-feet]	Flood Flows [acre-feet]	Late[2] Flood Flows [acre-feet]	Total Flood Flows [acre-feet]	Net[3] Flood Flows [acre-feet]	UWCD 48% [acre-feet]	NLF 44.86% [acre-feet]	LA County 4.471% [acre-feet]	NCWD 2.662% [acre-feet]	Total NLF/LA County/ NCWD Flood Flows [acre-feet]
1977	752	0	0	0	0	0	0	0	0	0
1978	92,780	89,592	325	89,917	67,438	32,370	30,257	3,015	1,795	35,068
1979	31,440	19,641	0	19,641	14,731	7,071	6,609	659	392	7,660
1980	54,158	47,625	101	47,726	35,794	17,181	16,060	1,600	953	18,613
1981	6,186	628	0	628	471	226	211	21	13	245
1982	8,930	3,544	0	3,544	2,658	1,276	1,193	119	71	1,382
1983	78,010	74,287	3,020	77,307	57,981	27,831	26,014	2,592	1,543	30,150
1984	10,582	2,106	0	2,106	1,580	758	709	71	42	822
1985	3,361	0	0	0	0	0	0	0	0	0
1986	20,005	13,867	0	13,867	10,400	4,992	4,666	465	277	5,408
1987	1,212	0	0	0	0	0	0	0	0	0
1988	4,401	807	0	807	605	290	272	27	16	315
1989	919	0	0	0	0	0	0	0	0	0
1990	540	0	0	0	0	0	0	0	0	0
1991	6,719	4,375	0	4,375	3,281	1,575	1,472	147	87	1,706
1992	29,409	22,631	0	22,631	16,973	8,147	7,615	759	452	8,826
1993	81,264	77,722	0	77,722	58,291	27,980	26,154	2,606	1,552	30,312
1994	6,424	502	0	502	377	181	169	17	10	196
1995	57,914	53,363	0	53,363	40,022	19,211	17,957	1,789	1,065	20,812
1996	7,105	1,654	0	1,654	1,241	596	557	55	33	645
1997	9,028	3,918	0	3,918	2,938	1,410	1,318	131	78	1,528
1998	68,846	66,597	11,639	78,236	58,677	28,165	26,327	2,623	1,562	30,512
1999	7,793	238	0	238	179	86	80	8	5	93
2000	7,212	4,118	0	4,118	3,088	1,482	1,386	138	82	1,606
Totals	**594,990**	**487,215**	**15,085**	**502,300**	**376,725**	**180,828**	**169,025**	**16,843**	**10,028**	**195,897**
Averages	**24,791**	**20,301**	**629**	**20,929**	**15,697**	**7,535**	**7,043**	**702**	**418**	**8,162**

(1) Water year is from October 1 to April 30.
(2) Late flood flows are from May 1 through September 30.
(3) Net flood flows are 75% of Total Flood Flows.

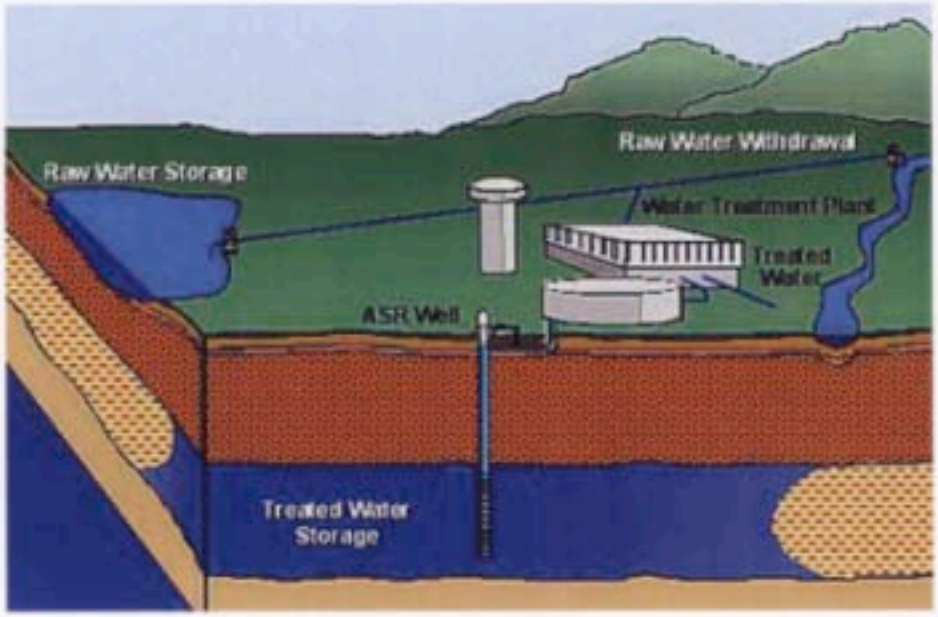
(5) Saugus Groundwater Banking/ASR Program

As discussed above, in ruling that the Newhall Ranch Final EIR did not demonstrate that sufficient water will be available for build-out of the Specific Plan, the trial court found a lack of substantial evidence showing that storage of Newhall Ranch's share of the Castaic Creek flood flows was achievable. The trial court also found a lack of substantial evidence to support a finding that a given volume of water could be stored in the Saugus aquifer pursuant to the proposed Saugus Groundwater Banking/ASR program. This section will generally describe groundwater banking/ASR programs, and show that the use of the Saugus aquifer for a groundwater bank is a feasible and reliable means of ensuring adequate water supplies for build-out of the Specific Plan. The information presented in this section is based on the *Newhall Ranch ASR Impact Evaluation*, dated February 2001, prepared by CH_2MHill, and the *Assessment of the Hydrogeologic Feasibility of Injection and Recovery of Water in the Saugus Formation, Santa Clarita Valley, California*, dated February 2001, prepared by Slade, including the Technical Appendix by Slade entitled, *Hydrogeologic Conditions in the Saugus Formation, Santa Clarita Valley, California*, February 2001.

Groundwater Banking/Aquifer Storage And Recovery Programs. An ASR program (also termed a "groundwater bank") involves the seasonal storage of high-quality treated drinking water injected into a suitable aquifer when supplies are plentiful, and then recovering the water for later use during dry seasons or periods of drought. With ASR, the treated water is stored underground via wells during periods of low demand or excess supply. Water is then pumped (i.e., "recovered") from the same well or wells to meet annual peak season demands, or "banked" for later withdrawal, which defers costly supply or treatment system expansions constructed solely to meet peak demands. Groundwater Banking/ASR also provides the ability for treatment plants to supply additional water over extended peak-demand periods. **Figure 2.5-26,** below, illustrates the water storage and treatment system for a Groundwater Banking/ASR program.

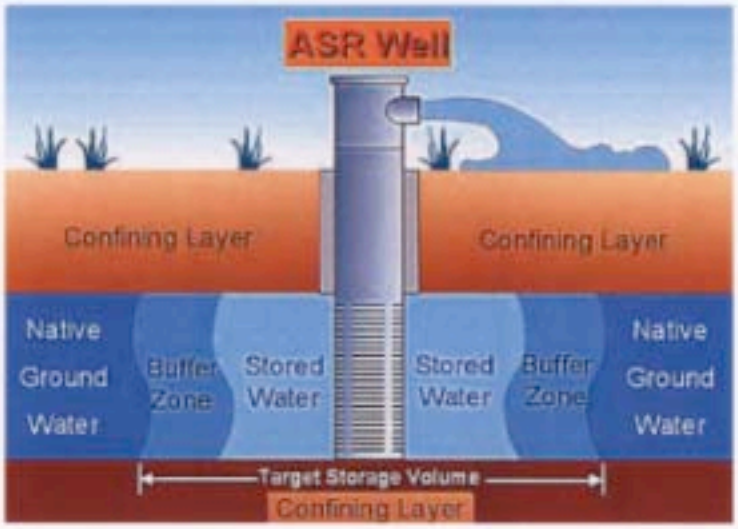
Figure 2.5-26

ASR Water Storage and Treatment System



A Groundwater Banking/ASR program offers significant benefits over traditional methods of water storage, such as surface reservoirs. With Groundwater Banking/ASR, there are no evaporation losses and substantial volumes of water can be stored without the potential environmental impacts often associated with above-ground reservoirs. In addition, the injection of high quality treated water may improve the quality of water extracted by the well because the injected treated water displaces the native groundwater away from the well (CH2M Hill, 2001). The injection water must meet the water quality requirements of the State Regional Water Quality Control Board, Los Angeles Region. Over time, a water storage zone is developed around the well, which consists of the injected treated water. The injected water stays relatively close to the well because the water moves very slowly underground. **Figure 2.5-27**, below, illustrates the storage zone of the treated water.

Figure 2.5-27
Storage Zone Of Treated Water



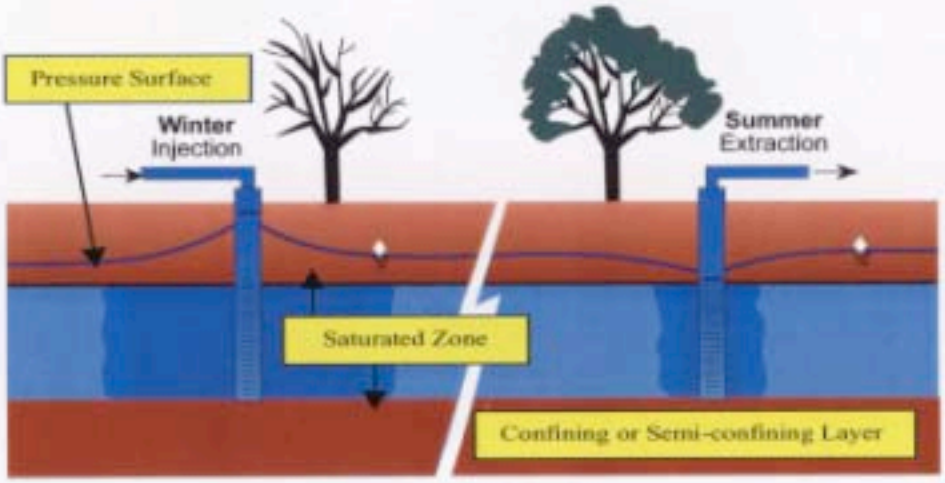
As water is injected into a well, the injected water displaces native groundwater and creates a mound or zone of increased water level around the well. Storage occurs as a result of filling previously unsaturated pore spaces in an unconfined aquifer or as a result of increasing the pressure within a confined aquifer. Most Groundwater Banking/ASR systems around the country are in aquifers that are confined or semi-confined. A confined aquifer is bounded above and below by low permeability layers that limit water movement in the up or down direction. Confined aquifers are by definition under pressure whereby the water level is above the base of the confining unit and the permeable aquifer is always fully saturated (i.e., full of water). Consequently, a well pumping from a confined aquifer produces water by reducing the pressure within the aquifer. **Figure 2.5-28**, below, illustrates that injection into a confined or semi-confined aquifer increases the pressure within the aquifer and causes aquifer expansion.

Injection of water into a confined or semi-confined aquifer will increase the pressure within the aquifer. The pressure is highest at the injection well and gradually decreases away from the well. The water level (pressure) change caused by pumping or injection in such an aquifer typically extends over a relatively large area (greater than 1 mile). It is possible to inject water into a confined or semi-confined aquifer such that the pressure builds up to a level above ground surface (CH2M Hill, 2001). As long as nearby wells penetrating this aquifer are sealed and capped, no injected water will reach ground surface or a surface stream.

In reality, most confined aquifers are actually semi-confined because low permeability layers are rarely continuous and they are often interfingered with permeable layers or fractures throughout the aquifer.

(This is the case in the Saugus Formation.) Consequently, injection causes an increase in pressure within portions of the aquifer, which promotes some movement of stored water across low permeability layers into higher permeability layers. In some cases, pore spaces in the upper portion of the aquifer that were previously unsaturated begin to fill as the water level rises during injection. The degree to which this will occur is a function of the vertical permeability of the aquifer. This movement of water has not posed a problem for other ASR projects because this water is available for recovery during the pumping phase of the project.

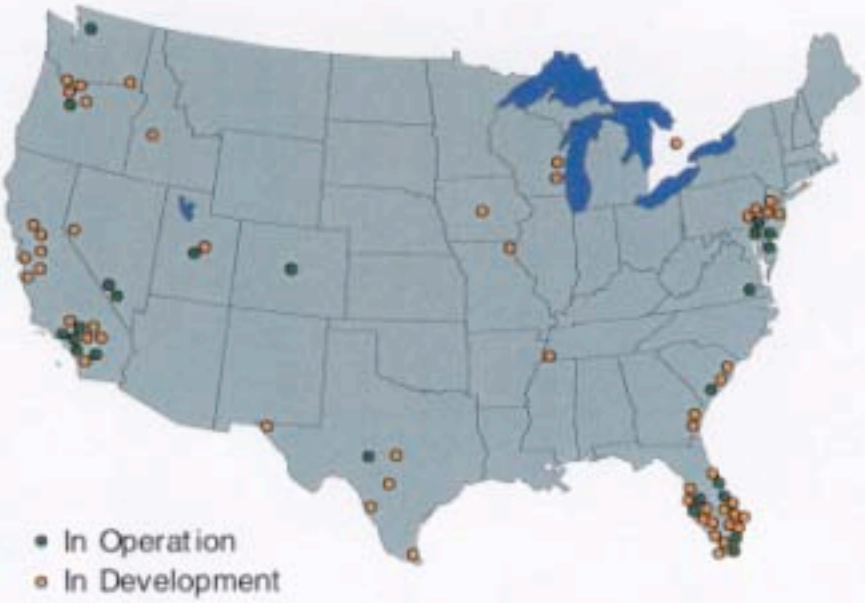
Figure 2.5-28
Pressure in a Confined/Semi-Confined Aquifer



Groundwater banking/ASR programs are not experimental and are well established. Groundwater banking/ASR programs are currently being operated in the United States, United Kingdom, Canada, Australia and Israel. Such programs are currently underway in several other countries, including the Netherlands, New Zealand, Thailand, Taiwan and Kuwait. In the United States, the U.S. Geological Survey conducted small tests of well recharge systems as early as the 1940s; however, none of those test sites were ultimately placed into operation. The first fully functional ASR well began operations in Wildwood, New Jersey in 1969, and this system is still in operation, having been expanded to four wells. Most subsequent ASR wells have been constructed since 1983, when the Manatee County, Florida, ASR system commenced operations.

Currently, in the United States, there are approximately 75 Groundwater Banking/ASR projects under development and about 35 Groundwater Banking/ASR sites in operation, ranging from a single well to 30 wells, with recovery capacities ranging from 0.5 mgd from single wells to 100 mgd from wellfields (see, **Figure 2.5-29**).

Figure 2.5-29
Groundwater Banking/ASR In The United States



A very large Groundwater Banking/ASR program is in the planning stages for south Florida to restore the Everglades. Upon completion, that program is expected to consist of more than 300 ASR wells storing and recovering water at combined rates of up to 2 billion gallons per day.

The Calleguas Municipal Water District ("Calleguas") Groundwater Banking/ASR site is located within 25 miles of the Newhall Ranch Specific Plan site. Calleguas serves water to 22 purveyors in Ventura County, California, over an area of approximately 300 square miles with a population of about 500,000.

Calleguas' entire water supply is provided by the SWP through a single system connection (pipeline) with the Metropolitan Water District of Southern California ("Metropolitan"). Reliance on a single connection renders the entire Calleguas water supply subject to interruption from a host of external forces, including seismic disruption of pipeline deliveries, drought, water rights determinations, regulatory changes and unforeseen events. As a result, Calleguas is currently developing a 30-well ASR wellfield in the local Las Posas Basin to store SWP water in a semi-confined aquifer similar to the Saugus.

SWP water stored underground will increase reliability by providing a second point of delivery to the current single pipeline connection with Metropolitan. Water will be stored underground in the Lower Aquifer System (LAS) of the Las Posas Basin, a beneficial alternative to traditional aboveground storage reservoirs. Water will be injected and extracted from the LAS by specially designed ASR wells, which will be capable of both injecting and extracting (pumping) water. Once complete, the 30 ASR wells will provide Calleguas with a minimum extraction capacity of approximately 64 mgd (196 AF/day). SWP water will be stored in the LAS when Metropolitan has excess water supplies, and extracted by Calleguas for emergency needs or to meet peak water demands. **Figure 2.5-30**, below, shows the Calleguas ASR wellfield area in the local Las Posas Basin in relation to Newhall Ranch. SWP water is stored underground in the Las Posas Basin within an aquifer similar to the Saugus Formation.

Figure 2.5-30

Las Posas Basin/Calleguas MWD

The first 5 of Calleguas' 30 planned ASR wells have been completed. These 5 wells consist of the Fairview Well and 4 wells at Wellfield No. 1. An additional 12 ASR wells are currently being constructed. The existing wells have an injection capacity ranging from 700 to 1,200 gpm and an extraction capacity ranging from 1,000 to 1,800 gpm.

The Las Posas Basin ASR project and the proposed Saugus Groundwater Banking/ASR program will benefit biological resources in the Sacramento/San Joaquin Delta region because they will reduce demands for SWP water during low flow conditions. To the degree that stored water will be used to

either supplement or supplant imported deliveries, an equivalent amount of water could remain in the Delta to aid in sustaining sensitive species and habitat during critical periods. South-of-the-Delta storage projects, such as the Las Posas Basin ASR project and the Saugus Groundwater Banking/ASR program, have been long recognized by State and regional water officials as fundamental to both ensuring adequate water supplies for southern California and abating conditions adverse to the Delta's ecosystem.

Based on the foregoing information, a Groundwater Banking/ASR is a reliable, environmentally beneficial and widely-used method of storing (or "banking") water via wells in groundwater basins and then recovering that water to meet annual peak season or dry year demands. As discussed below, these advantages apply equally to the proposed Saugus Groundwater Banking/ASR program for the Newhall Ranch Specific Plan.

Saugus Groundwater Banking/ASR Program. This program will be used in the Saugus aquifer to furnish and supplement water for the Newhall Ranch Specific Plan during periods when state-furnished water is unavailable to meet potable water demands.[41] During years when state-furnished water is available to the Specific Plan, the water will be injected into the Saugus aquifer for storage. The injected water will be pumped out of the Saugus aquifer only during years when SWP deliveries to the Santa Clarita Valley are reduced. Consequently, the Saugus **Groundwater Banking**/ASR program will be used to: (i) Bank water during non-drought years; (ii) Supply water to the Specific Plan during drought years; and (iii) Enhance Saugus aquifer recharge after drought years.

As previously designed, the Saugus Groundwater Banking/ASR program consisted of 19 ASR wells in three areas of the Saugus aquifer. See, Revised Draft Newhall Ranch EIR, p. 4.11-20. The ASR wellfield for the Specific Plan was intended to accommodate approximately 8,300 acre-feet of water annually. *Id.* Since initially proposed, however, the Saugus Groundwater Banking/ASR program has been substantially redesigned and reduced in magnitude. Based on detailed analyses of the hydrologic properties of both the Saugus and Alluvial aquifers, as well as regional water supply and demand data, the scope of the Saugus Groundwater Banking/ASR program has been reduced to 6 ASR wells capable of accepting approximately 4,500 AFY. The basis for the revised design parameters of the program is discussed below.

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41 The term "state-furnished water" is used to define the source or sources of water available for use in the Saugus Groundwater Banking/ASR program. These water sources include: (a) SWP Table A entitlements from CLWA, including Newhall/SWP supplies; (b) Interruptible SWP water (i.e., water in excess of Table A entitlements) from CLWA; (c) SWP water from DWR's Turnback Pool program from CLWA; (d) Carryover water from CLWA; and (e) Castaic Creek flood flows (when available).

The design of the Saugus Groundwater Banking/ASR program is governed by regional water availability and Specific Plan water demand. Establishing the program's design parameters first required a determination of water volumes available to the Santa Clarita Valley from the SWP system during average years, wet years and drought years. Based on the results of the water supply model created by DWR (the DWRSIM model), SWP annual water supplies available to the Santa Clarita Valley are estimated to be: (i) 56,800 AFY for average years (59.7 percent of the 95,200 AFY entitlement); (ii) 66,300 AFY for wet years (69.6 percent of the entitlement); and (iii) 37,900 AFY for drought years (39.8 percent of the entitlement). These SWP supply amounts would also be expected under the partial build-out scenario analyzed below (*see*, Cumulative Valley Build-out Scenario: Scenario 2, Year 2020).

Under the full build-out scenario presented below (see, Cumulative Valley Build-out Scenario: Scenario 2, Year 2045), this analysis predicts conditions over the long-term (the year 2045), and projects that the CALFED Bay Delta Program would be operational and that the Interim Delta Improvements would be in place as described in **Section 2.5.4**. Under the "Interim Delta Fix," the UWMP (page 2-13) indicates that CLWA's water deliveries from the SWP would range from 73,700 to 82,900 AFY in average/wet years to 40,200 AFY in drought years.

The Specific Plan's total water demand at full build-out is projected to be 17,680 AFY, of which 9,035 AFY would be met by a combination of reclaimed water from the Newhall Ranch WRP, and reclaimed water from CLWA. Therefore, the total amount of potable water supply required for the Specific Plan at full buildout (year 2045) is 8,645 AFY (i.e., 17,680 - 9,035 = 8,645). During average/normal and wet years at full buildout, this demand would be met by Newhall agricultural water and Nickel Water (see **Chart ES-1**) (because of other existing supplies available to the Specific Plan and the actions being taken by the Specific Plan applicant to enhance the reliability of supplies in dry years, Nickel Water would not be needed until after approximately 2025). During dry years under full build-out (year 2045), the potable demand of the Specific Plan would also be met by primary sources, including Newhall Agricultural Water, the Nickel Water, and water stored by the Specific Plan applicant in the Semitropic Groundwater Bank. While not needed to meet the needs of the Specific Plan, approximately 4,100 AFY of Saugus Groundwater Banking/ASR program water would be available to enhance the reliability of Specific Plan supplies.

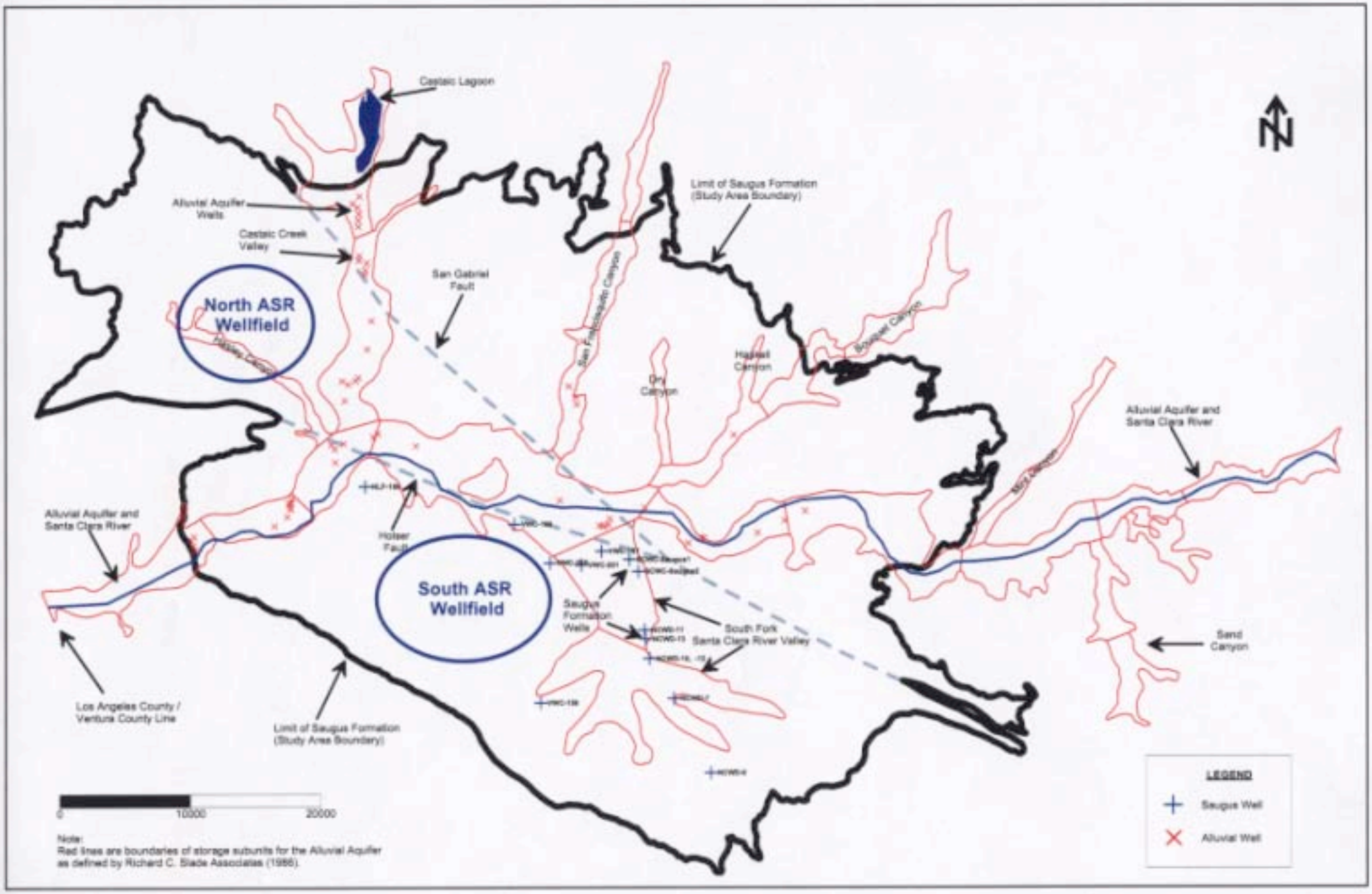
The design parameters of the Saugus Groundwater Banking/ASR program were determined based on the Specific Plan dry year need of 4,100 AFY. In other words, the program was designed with the capability to inject enough water during average/normal to wet years to yield 4,100 acre-feet during a dry year. Based on data obtained from actual injection tests performed at wells in the Saugus aquifer, the peak injection rate that can be maintained at each Saugus ASR well is assumed to be 800 gallons per

minute. Taking into account downtime for maintenance, the daily injection rate translates into a monthly injection rate of 95.5 AF per month, or 765 AF annually at each well. During years when water is available for injection into the Saugus aquifer, the injection would occur during 8 months of the year (October through May). The modeling analysis assumes that injection would not occur during June, July, August, or September in order to account for the fact that CLWA's water treatment plant system may be operating near full capacity to meet non-project, as well as project, demands during these 4 months. However, if water supplies are available, injection will be performed during these 4 months.

Because the injection process, over time, will increase groundwater discharge from the Saugus aquifer, more water must be injected than will later be recovered to account for the increased discharge. It is estimated that the amount of discharge attributable to operation of the ASR program will be 10 percent or less of the injected volume. CH2M Hill has verified this estimate by using a numerical groundwater flow model showing that the increased discharge is less than 10 percent of the injected volume. In order to *recover* the target volume of water (4,100 acre-feet), therefore, it will be necessary to inject 4,500 acre-feet (i.e., 4,100 + 450 [or 4,500 x 10%] = 4,500 rounded up to the nearest 100 acre-feet). The number of ASR wells required to inject the target injection volume is determined by dividing the target injection volume (4,500 acre-feet) by the 8-month well injection rate (765 acre-feet). Based on this calculation, the Saugus Groundwater Banking/ASR program was determined to require approximately 6 wells in order to provide the necessary amount of ASR water (4,100 acre-feet) during a dry year.

The locations of the ASR wells were selected based on considerations such as aquifer transmissivity (permeability), model-predicted depths to groundwater in the Saugus aquifer and the fact that the Saugus aquifer north of the San Gabriel Fault is considered to be much thinner than the Saugus aquifer south of the fault. Based on these criteria, it would be feasible to construct the 6 ASR wells in the following two areas: (i) the upland area south of the Santa Clara River and west of I-5, which includes areas within the boundary of the Newhall Ranch Specific Plan; and (ii) the upland area north of the Santa Clara River and west of Castaic Creek. Both of these areas are west of the area where municipal supply wells are currently present in the Saugus Formation.[42] **Figure 2.5-31** depicts the general locations of the proposed ASR wellfields.

[42] It should be noted that existing Saugus Formation wells could be retrofitted for ASR purposes.



NEWHALL RANCH
Newhall Ranch Company

FIGURE 2.5-31
GENERAL LOCATIONS OF PROPOSED ASR WELLFIELD

Feasibility Of The Saugus Groundwater Banking/ASR Program. The determination that the Saugus Groundwater Banking/ASR program is feasible is based on the analysis presented above, and the actual injection and pumping tests conducted at wells in the Saugus Formation from July 2000 through October 2000. (*See, Newhall Ranch ASR Impact Evaluation,* CH_2MHill; and *Assessment of the Hydrogeologic Feasibility of Injection and Recovery of Water in the Saugus Formation, Santa Clarita Valley, California,* Slade.) The objectives of the ASR field testing were to: (a) test the feasibility of injecting water into, and recovering water from, the Saugus Formation; (b) evaluate Alluvium/Santa Clara River/Saugus Formation interconnection; and (c) provide field data to be used for calibrating CH_2MHill's groundwater flow model.

As part of those tests, tens of millions of gallons of municipal drinking water were injected into, and subsequently pumped out of, the Saugus Formation. (*Id.*) Water levels were monitored continuously in the test wells and in other nearby Saugus Formation and Alluvial aquifer wells. (*Id.*) Water levels were monitored for 22 days prior to the injection period, during the entire injection period, and for 9 days after the injection period ended. (*Id.*) A groundwater flow meter survey was performed at one of the test wells and a series of groundwater samples were collected during the testing. (*Id.*)

The results of the injection and recovery tests demonstrate that implementation of the Saugus Groundwater Banking/ASR program is feasible. The aquifer transmissivity and storativity data acquired during the testing indicates that the Saugus Formation is a semi-confined aquifer. (*Id.*) As discussed above, such aquifer types are appropriate for the ASR method of water storage. The Saugus Formation readily accepted water from the injection well (at rates up to 1,100 gpm), and subsequently yielded a comparable amount of water to a pumping well. (*Id.*) Localized mounding or depressions in water levels due to injection or pumping quickly returned to near pre-test levels after injection or pumping ceased. (*Id.*) Furthermore, the tests showed that there was no discernible effect on Alluvial water levels or the Santa Clara River, from either Saugus Formation well injection or pumping. [43]

2.5.5.4 Cumulative Water Supply Analysis

The Specific Plan applicant has secured all needed primary water sources (i.e., Newhall Agricultural Water, Nickel Water, etc.) independent of other cumulative water sources provided by CLWA (e.g., State Water Project supplies). Consequently, the Specific Plan would have no cumulative effect on water availability in the Santa Clarita Valley. In such circumstances (i.e., where the impacts will not result, in

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[43] It should be noted that Slade contacted the State Regional Water Quality Control Board to determine if a permit was required for the tests. After consultation with the Regional Board, it was determined that a permit was not required.

part, from the project being evaluated in the EIR), an EIR is not required to discuss them. See, CEQA Guidelines §15130(a)(1). Consequently, this cumulative water supply analysis is being provided for informational purposes only.

The following discussion focuses on the cumulative impacts to water availability for the Santa Clarita Valley. The analysis evaluates cumulative impacts under the following two future water demand and supply scenarios:

> **Scenario 1:** Existing development within the CLWA service area, plus Development Monitoring System ("DMS") projections, plus the Specific Plan (referred to as the "DMS Build-out Scenario"); and
>
> **Scenario 2:** Build-out within the CLWA service area, plus active pending General Plan Amendment requests, plus the Specific Plan (referred to as the "Santa Clarita Valley Cumulative Build-out Scenario").

Again, because the Specific Plan applicant has secured its own independent primary water sources, this analysis shows that the Specific Plan would have essentially no cumulative effect on water availability in the Santa Clarita Valley.

(a) DMS Buildout Scenario (2010/2012)

The DMS Build-out Scenario entails existing development, build-out of the near-term subdivision projects listed in the County's DMS, plus the Specific Plan. The analysis of this cumulative development scenario is required by the County's General Plan for the cumulative analysis of water service. The County's DMS lists all pending, recorded and approved projects for which land divisions have been filed within County unincorporated lands and within the City of Santa Clarita. The City plus County unincorporated areas together constitute the County's Santa Clarita Valley Planning area.

Table 2.5-36, below, illustrates both the cumulative water demand (existing plus DMS) and supply for the Santa Clarita Valley. This cumulative water demand is compared to the near-term projected Santa Clarita Valley water supplies and the additional Newhall Ranch Specific Plan water supplies. As shown, there is adequate independently-sourced water for the Specific Plan in both average years and dry years and no cumulative water supply impacts would occur. In fact, the table shows a water surplus for the Specific Plan and for the DMS development scenario.

(1) DMS General Plan Consistency

The purpose of this subsection is to assess the Newhall Ranch Specific Plan's consistency with the County's General Plan DMS policies as they relate to water supply. As indicated previously in this section, the County's General Plan includes provisions known as the DMS to give decision makers information about the existing capacity of available public services at the time a new development proposal is considered in the four major Urban Expansion Areas of the County of Los Angeles General Plan (Antelope Valley, Santa Clarita Valley, Malibu/Santa Monica Mountains, and East San Gabriel Valley).[44] The goal of DMS is to identify what new public facilities will be required for the new development, and to ensure that the appropriate cost of any expansion of facilities will be paid for by that new development, and not assumed by the taxpayers.

In accomplishing the goal stated above, the DMS determines the availability of school, fire, sewerage, library, water and road services and facilities on an individual and cumulative basis. The DMS data used for this analysis includes:

(a) Inventory information reports for water, sewer and library services in the Santa Clarita Valley;

(b) Service Provider Reports for the water wholesaler (Castaic Lake Water Agency) and water retailers in Santa Clarita Valley and County Sanitation Districts Nos. 26 and 32; and

(c) A list of all pending, approved and recorded projects where land divisions have been filed within both the unincorporated area of the County and the City of Santa Clarita.

The DMS also works toward ensuring that the expansion costs of new development are paid for by that development.

To ensure new development is located in close proximity to services and existing development, DMS states that in no event is the proposed development to be located beyond one mile of an existing development or service. Also, DMS states that new development is to be located within, generally, five miles of commercial services and job opportunities.

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[44] Resolution of the County of Los Angeles Board of Supervisors, Plan Amendment Case No. S.P. 86-173.

Table 2.5-36
Scenario 1: DMS Buildout Scenario Demand and Supply for the Santa Clarita Valley
(acre-feet per year) (Same as Table 2.5-3)

	Average Years	Dry Years
Santa Clarita Valley Demand		
- DMS Demand [a]	87,674	87,674
- Dry Year 10% Increase in Demand	0	8,767
- Specific Plan Demand [b]	17,680	19,449
Potable Demand	8,645	8,645
Non-Potable Demand	9,035	9,035
Dry Year 10% Increase in Demand	0	1,768
- Additional Groundwater Banking Program	4,500	0
- Less Conservation [j]	(9,825)	(10,808)
Total	**100,028**	**105,082**
Santa Clarita Valley Supply [c]		
- Local Supply		
a. Groundwater		
Alluvial Aquifer	30,000 to 40,000	30,000 to 35,000
- Less Newhall Ranch Agricultural Water	(7,038)	(7,038)
Saugus Aquifer	7,500 to 15,000	11,000 To 15,000
Saugus Aquifer (new)	0 0	10,000 To 20,000
b. Reclaimed Water	1,700 10,737	1,700 10,737
Less CLWA Reclaimed Water Supply for Newhall Ranch	(1,033)	(1,033)
- Imported Supplies		
a. SWP Supplies [d]	56,800	37,900
b. Water Banking/Conjunctive Use		10,000 to 52,500
c. Desalination	2,000 To 3,000	2,000 To 3,000
Total	**89,963 to 117,500**	**92,518 To 166,055**
Specific Plan Supplies		
- Non-Potable Supplies		
WRP Reclaimed Water	5,344	5,344
CLWA Reclaimed Water Supply for Newhall Ranch	1,033	1,033
Subtotal	6,377	6,377
- Potable Supplies		
Newhall Ranch Agricultural Water	7,038	7,038
Nickel Water [k]	1,607	1,607
Newhall/SW P Water (Average Years); Semitropic Groundwater Banking Project [e] (Dry Years)	2,658	4,427
Subtotal	11,303	13,072
Total	**17,680**	**19,449**
Additional Groundwater Programs/Supplemental Supplies		
CLWA SWP and Other Supplies	0	0
Newhall/SWP Water [h]	1,908	3,044
Castaic Creek Flood Flows [i]	7,043	0
Semitropic Groundwater Banking Project [e]	0	523
Saugus Groundwater Banking/ASR Program [e]	0	4,100
Total	**8,951**	**7,667**
Total Supplies	**116,594 to 144,131**	**121,635 to 193,172**
Total Surplus [g]	**16,566 to 44,103**	**16,552 to 88,089**

a Complete buildout of DMS land uses is estimated to occur in 2012.
b This demand would occur starting with the Specific Plan's buildout year of approximately 2030. Newhall Ranch buildout is assumed to occur from 2005 to 2030 at a rate of 864 dwelling units per year, with water demands of 707 AFY average.
c *Source*: UWMP, December 2000, Tables 2-6 and 4-1.
d Consistent with the DWRSIM model, the figures show SWP entitlement reduced in average years to approximately 59.7 percent of entitlement and in dry years to approximately 39.8 percent of entitlement. In any given year, the actual amount of SWP water deliveries could be above or below these model projections. Deliveries of water associated with the Agency's SWP entitlement of 95,200 acre-feet per year are affected by a number of factors, including hydrologic conditions, the status of SWP facilities' construction, environmental requirements and evolving policies for the Bay-Delta. Programs are in place that have the potential to improve the reliability of imported water (see *UWMP*, December 2000, page 2-
e 10).
f As these programs are needed in dry years, they could be used up to the amounts indicated (as needed).
Consists of surplus SWP water available in normal/average years from CLWA water transfers, Interruptible SWP water, SWP Turnback Pool
g program, SWP Surplus water provisions and SWP Carryover Water program.
The surplus shown above is the net water available for injection into banking programs (e.g., Semitropic Groundwater Banking Project, other
h groundwater banking projects, etc.), not including Castaic Creek Flood Flows.
Newhall/SWP water consists of 7,648 AF of surplus Table A entitlement water reduced in average years to approximately 59.7 percent of
i entitlement and in dry years to approximately 39.8 percent of entitlement.
See discussion in **Section 2.5.5**. Castaic Creek flood flows are a variable source of water that, when available in average and wet years, could be
j used for the Semitropic Groundwater Banking Project and/or Saugus Groundwater Banking/ASR Program.
The *UWMP* (pages 3-8 and 3-9) indicates that water demand can be expected to decrease through implementation of water conservation practices
k in the CLWA service area.
Nickel Water consists of 1,607 AF of water purchased by Newhall Land and delivered via the Kern County Water Agency. This water is 100 percent reliable and is not affected by same factors that reduce the reliability of SWP water.

The DMS includes a computerized database that incorporates information supplied by service providers and determines capital facility capacity and demand placed on the system by existing, pending, approved and recorded projects for which land divisions have been filed within the four major Urban Expansion Areas. The DMS is used to quantitatively determine project and cumulative impacts on many County and other public services. In EIRs, wherever a proposed development project would result in an exceedence of applicable County infrastructure or facilities (such as water supply), a significant impact is identified and mitigation is recommended as appropriate.

The General Plan DMS requirements apply to "subdivisions" proposed within the Santa Clarita Valley. Because County approvals associated with the Newhall Ranch Specific Plan do not include any subdivisions at this time, the Specific Plan is not subject to the General Plan DMS requirements. (At the time a request is made by an applicant for the County to approve a subdivision map, that subdivision must be consistent with the General Plan DMS requirements.) Even though not required at this time, the DMS consistency analysis has been completed to determine if enough water is available for the Specific Plan under the General Plan DMS requirements.

This analysis addresses water supply requirements resulting from buildout of all pending, recorded, and approved projects listed in the County's DMS, plus the Newhall Ranch Specific Plan. As indicated in **Table 2.5-36, Scenario 1: DMS Buildout Scenario Demand and Supply for the Santa Clarita Valley,** under the DMS analysis there is sufficient water supply for the entire demand of the Newhall Ranch Specific Plan and all pending approved and recorded projects in DMS. In fact, a water surplus of approximately 16,566 to 44,103 AFY would occur in an average year and a surplus of approximately 16,552 to 88,089 AFY would occur in a dry year. Because the applicant has secured independent primary Specific Plan water supplies, the Specific Plan would have no contribution to cumulative water availability effects in the Santa Clarita Valley. While not expected, even if a water deficit were to occur in the future due to a reduction in the availability of SWP water, the Specific Plan would have no contribution to such a deficit. Therefore, the Specific Plan is not expected to create any significant cumulative water availability impacts.

In addition to ensuring that an adequate supply of water is available for a project, DMS requirements also indicate that the project in question must be located within one mile of an existing development or service and that the development be located within generally five miles of commercial services and job opportunities. The Newhall Ranch Specific Plan site is located immediately adjacent to existing development and the retail water service area of the Valencia Water Company. It is also within the wholesale service area of the Castaic Lake Water Agency. In addition to providing approximately 19,000 jobs, the Specific Plan site is located approximately one-eighth of one mile from the Magic Mountain

Theme Park, Castaic Junction, and the Valencia Commerce Center, and approximately three quarters of one mile from the Valencia Industrial Park. All of these existing development areas are served by County or other public services, and provide commercial services and job opportunities.

Based on the information provided in this analysis, the Newhall Ranch Specific Plan is consistent with the General Plan DMS policies as they relate to water supplies.

(b) Santa Clarita Valley Buildout Scenario (2020/2045)

The Santa Clarita Valley cumulative build-out scenario entails build-out of all lands under the current land-use designations indicated in the County's Area Plan and the City of Santa Clarita's General Plan, plus the proposed Specific Plan, plus all known active pending General Plan Amendment requests for additional urban development in the County unincorporated area and the City of Santa Clarita.

Table 37, Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Supplies, and **Table 38, Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Demand and Supply**, summarize the cumulative water demand and supply for this build-out scenario. As shown, at partial build-out by the year 2020, there are adequate water supplies for the Specific Plan, and those supplies are independent of other water supplies for the Santa Clarita Valley. As a result, the Specific Plan is not expected to create any significant cumulative water availability impacts in either average/normal or dry years. In addition, as shown, at full build-out by the year 2045, there are adequate water supplies for the Specific Plan, and those supplies, again, are independent, stand-alone water supplies, with no significant cumulative water supply impacts occurring in either average/normal or dry years. In fact, the two tables show a water surplus under this scenario in average and dry years in both 2020 and 2045 (the low range of the projected average year surplus in 2045 is approximately 11,510 AFY). This figure was conservatively projected assuming that the mid-range amount of water is available from Valley-wide groundwater sources, and the minimum amount of water is available from CLWA's SWP supplies. In average years, it is expected that up to 40,000 AFY would be available from the Alluvial aquifer (with 35,000 AFY as the mid-range amount) and up to 15,000 AFY would be available from the Saugus aquifer (with 11,250 AFY as the mid-range amount).

Table 2.5-37 shows that, for long-term planning purposes, the mid-range of the Alluvial and Saugus groundwater supplies were assumed, and the mid-range of the water banking/conjunctive use sources, as indicated in the UWMP 2000, were assumed. For critical dry years, when reliability of the SWP could be reduced, CLWA would utilize both dry year supplies available from the Saugus Aquifer, and water banking and conjunctive use projects as indicated in **Table 2.5-37** below.

As depicted in **Table 2.5-37**, a surplus of water would be available during dry conditions (i.e., **Table 2.5-38** indicates that a dry year surplus of approximately 30,345 AFY would occur), leaving an adequate amount of water available from various sources to offset critical dry year reductions in SWP supplies. For example, if a critical dry year allocation of SWP Table A water delivery were reduced to 20 percent of entitlement in 2045 (in CLWA's case, this would equal a delivery of approximately 19,040 AF (i.e., 95,200 AF entitlement x 0.20 = 19,040 AF)), an additional 21,160 AF of water would be needed from sources other than SWP supplies (i.e., dry year delivery of 40,200 AF – 19,040 AF = 21,160 AF of additional water need). The water represented by the 2045 dry year surplus of 30,345 AFY shown in **Table 2.5-38** would adequately supply the added critical dry year need of 21,160 AF. In relation to the Specific Plan's potential cumulative impact under this scenario, because the applicant has secured independent primary water sources to completely meet the demands of the Specific Plan, the Specific Plan would have no effect on cumulative water availability in the Santa Clarita Valley. While not expected, even if a water deficit were to occur in the future due to a reduction in the availability of SWP water, the Specific Plan would have no contribution to such a deficit. Therefore, no cumulatively significant water availability impacts would occur due to buildout of the Specific Plan.

(c) Conclusion – Cumulative Impacts

Because the applicant has secured its own primary water sources to meet the demands of the Specific Plan, the Specific Plan would not contribute to any significant cumulative water availability impacts in the Santa Clarita Valley. In addition, because cumulative water supplies exceed demand, cumulative development (including the proposed Newhall Ranch Specific Plan) would not result in unavoidable significant cumulative impacts on Santa Clarita Valley water resources. Therefore, cumulative mitigation measures are not required. However, to ensure sufficient long-term water supplies for all cumulative development (including the proposed Specific Plan), the County's General Plan Development Monitoring System (DMS) requires tentative map applications to show that water supplies are adequate to meet demand.

Table 2.5-37
Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Supplies
(acre-feet per year) (Same as Table 2.5-5)

	Partial Buildout (year 2020)		Full Buildout (year 2045)	
	Average Years	Dry Years	Average Years	Dry Years
Santa Clarita Valley Water Supplies [a]				
Local Supply				
a. Groundwater				
Alluvial Aquifer	30,000 to 40,000	30,000 to 35,000	35,000	32,500
Less Newhall Ranch Agricultural Water	(7, 038)	(7,038)	(7,038)	(7,038)
Saugus Aquifer	7,500 to 15,000	11,000 to 15,000	11,250	13,000
Saugus Aquifer (new wells)	0	10,000 to 20,000	0	15,000
b. Reclaimed Water	17,000	17,000	17,000	17,000
Less CLWA Reclaimed Water Supply for Newhall Ranch	(2,215)	(2,215)	(3,691)	(4,595)
Imported Supplies				
a. CLWA SWP Table A Water [b]	56,800 to 66,300	37,900	73,700 to 82,900	40,200
b. Water Banking/Conjunctive Use	0	10,000 to 52,500	0	52,500
c. Desalination	2,000 to 5,000	2,000 to 5,000	5,000	5,000
Total	**104,047 To 134,047**	**108,647 to 173,147**	**131,221 to 140,421**	**163,567**
Newhall Ranch Specific Plan Supplies				
- Non-Potable Supplies				
Newhall Ranch Reclaimed Water	3,206	3,206	5,344	5,344
CLWA Reclaimed Water	2,215	2,215	3,691	4,595
Subtotal	5,421	5,421	9,035	9,939
- Potable Supplies				
Newhall Ranch Agricultural Water	7,038	7,038	7,038	7,038
Nickel Water	1,607	1,607	1,607	1,607
Semitropic Groundwater Banking Project [c]	0	0	0	865
Subtotal	8,645	8,645	8,645	9,510
Total	**14,066**	**14,066**	**17,680**	**19,449**
Additional Groundwater Programs/Supplemental Supplies				
CLWA SWP and Other Supplies	0	0	4,500	0
Newhall/SWP Water [f]	4,566	3,044	4,566	3,044
Castaic Creek Flood Flows [e]	7,043	0	7,043	0
Semitropic Groundwater Banking Project [c]	0	4,950	0	4,085
Saugus Groundwater Banking/ASR Program [c]	0	4,100	0	4,100
Total	**11,609**	**10,454**	**16,109**	**11,229**
Total Supply	**129,722 to 159,722**	**133,167 to 197,667**	**165,010 to 174,210**	**194,245**

a *Source*: UWMP, December 2000, Tables 2-2, 2-6 and 4-1.
b Assumes that by year 2045 the Interim Delta Improvements have been implemented.
c As these programs are needed in dry years, they could be used up to the amounts indicated (as needed).
d Consists of surplus SWP water available in normal/average years from CLWA water transfers, Interruptible SWP water, SWP Turnback Pool program, SWP Surplus water provisions and SWP Carryover
e Water program.
f See discussion in Section 2.5.5. Castaic Creek flood flows are a variable source of water that could be used, when available, in average and wet years, for the Semitropic Groundwater Banking Project (through water transfers) or the Saugus Groundwater Banking/ASR Program (from CLWA through Valencia Water Company). SWP entitlement reduced in average years to
g approximately 59.7 percent of entitlement and in dry years to approximately 39.8 percent of entitlement. In any given year, the actual amount of SWP water deliveries could be above or below these model projections.
In dry years under full buildout, amount of SWP water delivered to Newhall Ranch is assumed to be approximately 66 percent of SWP water delivered in average years. Actual future conditions possibly may result in Newhall Ranch using Nickel Water, CLWA SWP Water and Newhall/SWP water.

Table 2.5-38
Scenario 2: Santa Clarita Valley Cumulative Buildout Scenario Water Demand and Supply (acre-feet per year) (Same as Table 2.5-6)

	Partial Buildout (year 2020)		Full Buildout (year 2045)	
	Average Years	Dry Years	Average Years	Dry Years
Total Buildout Demand [b]	105,200 [a]	112,750	153,500 [c]	163,900
Santa Clarita Valley Water Supplies [d]	104,047 to 134,047	108,647 to 173,147	131,221 to 140,421	163,567
Newhall Ranch Specific Plan Supplies	14,066	14,066	17,680	19,449
Additional Groundwater Programs/Supplemental Supplies	11,609	10,454	16,109	11,229
Total Supply	**129,722 to 159,722**	**133,167 to 197,667**	**165,010 to 174,210**	**194,245**
Total Surplus [e]	**24,522 to 54,522**	**20,417 to 84,917**	**11,510 to 20,710**	**30,345**

a Source: 2000 UWMP, December 2000, Table 3-5, plus Saugus Groundwater Banking/ASR Program injection demand.

b Consistent with the UWMP, December 2000, demand is increased by approximately 10 percent in dry years.

c Source: UWMP, December 2000, Table 3-5, using a straight-line projection from 2020 to 2045, plus Saugus Groundwater Banking/ASR Program injection demand.

d Source: UWMP, December 2000, Tables 2-2, 2-6 and 4-1.

e The surplus shown above is the net water available for injection into banking programs (e.g., Semitropic Groundwater Banking Project, other groundwater banking projects, etc.).

2.5.6 WATER IMPACTS ANALYSIS

2.5.6.1 Preface

As directed by the trial court's decision and writ, this section assesses the environmental impacts associated with providing the identified water supplies to the Specific Plan, including impacts of the Saugus Groundwater Banking/ASR program. The environmental impacts are also assessed against specified "significance thresholds" identified in this section. The issues addressed in this section include impacts associated with:

- Newhall Ranch Reclaimed Water Use
- CLWA Reclaimed Water Use
- Newhall Agricultural Water Use
- CLWA State Water Project (SWP) Water Use
- Newhall/SWP Water Use
- Nickel Water Use
- Semitropic Groundwater Banking
- Specific Plan Full Build-Out (Including Saugus Groundwater Banking/ASR Program, Impacts on Groundwater and Surface Water Levels and Flows Locally and Downstream)
- Impacts of Newhall/SWP and Nickel Water on Delivery and Treatment Capacity
- Biological Effects in River Corridor of the Specific Plan (including the Saugus Groundwater Banking/ASR Program)
- Water Quality Impacts, including chloride, nutrients and perchlorate
- Liquefaction Impacts
- Castaic Creek Flood Flows Use
- Land Surface Elevation Changes

Based on the analysis in this section, the issues presented above did not result in the identification of any unmitigated significant environmental impacts resulting from the provision of water to the Newhall Ranch Specific Plan site.

2.5.6.2 Hydrologic Relationship Between the Santa Clarita Valley and Ventura County

Issues have been raised regarding the Specific Plan's impact on the flow of water from the Santa Clarita Valley downstream into Ventura County. The relationship between the hydrologic setting of the Santa Clarita Valley and areas downstream in Ventura County must be understood and placed in context. Specific impact topics that are potentially influenced by this relationship include the impact of the proposed Saugus Groundwater Banking/ASR program on groundwater and surface water flows into

Ventura County, changes in the land use and conversion of irrigation wells to public water supply wells, and potential impacts of additional water importation to the Santa Clarita Valley.

As described below, a relatively small percentage of the surface and subsurface flows downstream in Ventura County actually originate upstream in Los Angeles County. As shown on **Table 2.5-39, Major Inflows to Santa Clara River**, approximately 26 percent of the surface and subsurface flows downstream in Ventura County come from the portion of the Santa Clara River watershed located upstream in Los Angeles County. The vast majority of the surface and subsurface flows (approximately 74 percent) enter the Santa Clara River in Ventura County (e.g., from the Piru Creek watershed (approximately 19 percent), Sespe Creek watershed (approximately 39 percent), Santa Paula Creek watershed (approximately 7 percent)). These watersheds are located in Ventura County and are not affected by the Specific Plan, including the Saugus Groundwater Banking/ASR program. Some comments have inferred that virtually all of Ventura County's water supply originates in Los Angeles County and would be threatened by the proposed Newhall Ranch Specific Plan and WRP, including the proposed Saugus Groundwater Banking/ASR program. This analysis, however, does not concur with those comments.

Table 2.5-39
Major Inflows to the Santa Clara River

County	Inflow Location	Average Annual Flow (acre-feet)	Percent of Total Inflow
Los Angeles	County Line (Blue Cut)	57,000	26 %
	Subtotal	**57,000**	**26 %**
Ventura	Piru Creek	43,000	19 %
	Hopper Creek	4,000	2 %
	Sespe Creek	85,000	39 %
	Santa Paula Creek	17,000	7 %
	- POTW	4,000	2 %
	POTW	10,000	5 %
	Subtotal	**163,000**	**74 %**
	Total	**220,000**	**100%**

The fact that surface and subsurface flows originating in Los Angeles County have a relatively minor influence on the hydrologic environment in Ventura County is supported by other studies as well. For example, DWR updated the Ventura County groundwater basin plan in a report entitled, "*Final Project Report, Update of Basin Plan for Piru, Sespe, and Santa Paula Hydrologic Areas*, June 1989." This Basin Plan covers the Piru Hydrologic Area, Santa Felicia Hydrologic Subarea, which comprises the portion of the

Ventura County groundwater basin just downstream of the Santa Clarita Valley. According to the Basin Plan (page 19), the Piru Hydrologic Area is approximately 318,880 acres and it encompasses four subareas, including the Santa Felicia Hydrologic Subarea, located primarily in Ventura County. This hydrologic area contains the main stream of the Santa Clara River and its tributary, Piru Creek. Piru Creek drains an extensive mountain area and contributes a substantial part of the surface water supply of the Santa Clara River in Ventura County. The Santa Felicia subarea includes the Santa Clara River and its major tributary, Piru Creek (from the upper inlet of Lake Piru), plus Hopper Creek and other tributaries. (*Id.*) As to groundwater conditions, the Basin Plan reports that the upstream Santa Clara groundwater basin in Los Angeles County contributes very little to the recharge of the Santa Felicia groundwater basin. On page 24 of the Basin Plan, DWR summarized its findings with respect to the recharge of the basin in Ventura County:

> "Natural recharge of the [Piru] basin occurs intermittently and is largely from percolation of surface flows of the Santa Clara River, Piru and Hopper Creeks, and smaller tributaries (about 75 percent of the total recharge). About 10 percent of recharge comes from percolation of precipitation. Although steady, subsurface inflow from [the] Eastern Basin, the basin upstream [in Los Angeles County] on the Santa Clara River, *is essentially negligible* (estimated at about 240 acre-feet per year) because of the thin alluvial deposits." (*Emphasis added.*)

Although subsurface flows from Los Angeles County are essentially negligible, the surface flows from Los Angeles County downstream into Ventura County have increased over time due to the importation of SWP water by CLWA in the Santa Clarita Valley. Running averages of rainfall and river flow document that these flows have increased at the Los Angeles County/Ventura County line even without significant increases in rainfall. The result of the importation of SWP water in the Santa Clarita Valley has resulted in, and is projected to be, a significant beneficial impact on the amount of surface water flows to Ventura County from the Santa Clarita Valley.

2.5.6.3 Criteria for Determining Impact Significance

Significance threshold criteria are established and presented in **Subsections (a)** through **(k)** below.

(a) Significance Threshold Criteria for Water Availability

Significance criteria for water availability are defined by CEQA and the County of Los Angeles. The CEQA Guidelines[45] state that a project would normally have a significant effect on the environment if the project would "[s]ubstantially 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 (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)." The CEQA Guidelines[46] also raise the question of whether or not a project would "[h]ave sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed." Under this criteria, a project that does not have sufficient water supplies available to serve the site from existing entitlements and resources, or if new or expanded entitlements would be needed, and these conditions would give rise to a significant effect on the environment, then, they are considered significant impacts.

According to the County of Los Angeles Environmental Document Reporting Procedures and Guidelines,[47] the County also requires an analysis of adverse impacts on water availability when a project cannot be served by the existing area water system facilities due to inadequate water supplies to meet the domestic demands, and/or fire flows for fire protection.

(b) Significance Threshold Criteria for Use of Castaic Creek Flood Flows

CEQA and the Regional Water Quality Control Board (RWQCB) define significance criteria that are applicable to the use of Castaic Creek flood flows.

The CEQA Guidelines[48] state that a project would normally have a significant effect on the environment if it would "[s]ubstantially 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 (e.g., the production rate of pre-existing nearby wells would drop to a level which would not

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45 Guidelines for California Environmental Quality Act (Sections 15000-15387, California Code of Regulations, Title 14, Chapter 3), (Sacramento, California: Amended January 1, 2000), Appendix G, Environmental Checklist Form, Section VIII.

46 Guidelines for California Environmental Quality Act, Appendix G, Environmental Checklist Form, Section XVI.

47 County of Los Angeles Department of Regional Planning, Environmental Document Reporting Procedures and Guidelines, (Los Angeles, California: Adopted by the County Board of Supervisors 17 November 1987), Appendix D.

48 Guidelines for California Environmental Quality Act, Appendix G, Section VIII.

support existing land uses or planned uses for which permits have been granted)," "[v]iolate any water quality standards," or "[o]therwise substantially degrade water quality."

For purposes of this analysis, Castaic Creek flood flows would be used in wet years and average/normal years when flows occur in conjunction with the possible injection of treated flood flows in the Saugus ASR program or the Semitropic Groundwater Banking Program. A significant environmental impact would arise from the use of the flood flows if such use would deplete groundwater supplies, reduce water flows to Downstream Water Users or violate or otherwise substantially degrade the quality of the groundwater, such that the quality would fall below the water quality objectives for the Upper Santa Clara River Hydrologic Area (described below).

The RWQCB requires that projects meet the surface water and groundwater objectives, which are contained in the Water Quality Control Plan (also called the Basin Plan) for the region. Newhall Ranch is located within the Upper Santa Clara River Hydrologic Area, which is a part of the Basin Plan for the Los Angeles Region.

(c) Significance Threshold Criteria for Specific Plan (Including Saugus Groundwater Banking/ASR Program)

CEQA, Regional Water Quality Control Board criteria, and other criteria identified by CH_2MHILL, are used to define the thresholds of significance for the environmental effects of the Saugus Groundwater Banking/ASR Program on the Alluvial and Saugus aquifers, the Santa Clara River and the Downstream Water Users.

The CEQA Guidelines[49] state that a project would normally have a significant effect on the environment if it would "[s]ubstantially 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 (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)," "[v]iolate any water quality standards," or "[o]therwise substantially degrade water quality."

The RWQCB requires that project water quality impacts be assessed against the objectives defined in the Water Quality Control Plan (Basin Plan) for the Los Angeles Region. Therefore, if the proposed Specific

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49 Guidelines for California Environmental Quality Act, Appendix G.

Plan degrades water quality to below the water quality objectives for the Upper Santa Clara River Hydrologic Area (specified below), the Specific Plan would result in a significant water quality impact.

(d) Significance Threshold Criteria for Perchlorate Impacts

A concern has been raised regarding potential significant impacts that could be created by the Saugus Groundwater Banking/ASR program if it results in spreading of the ammonium perchlorate ("perchlorate") that has been detected in the Saugus Formation on the east side of the basin. The CEQA Guidelines do not provide criteria that could be used to determine the significance of the perchlorate impacts. Lacking such criteria, Los Angeles County will consider a significant impact to arise if there is any spreading of perchlorate within the Saugus Formation due to the Saugus Groundwater Banking/ASR program, which affects existing municipal-supply wells through the detection of perchlorate at concentrations at or above the action level of4.0 parts per billion (ppb).

(e) Significance Threshold Criteria for Water Levels

The Saugus Groundwater Banking/ASR program was assessed for impacts to water levels in the Alluvial and Saugus aquifers. It was determined that "significant impact" would be realized if implementation of the program would substantially deplete existing groundwater supplies or interfere substantially with groundwater recharge in the two aquifers such that there would be a net deficit in aquifer volume or a lowering of the groundwater levels in the aquifers. For the Saugus aquifer, a substantial depletion in supplies, volume or levels would include an ASR-induced groundwater level decline that results in an increase in pumping costs of more than 10 percent per kilowatt-hour per acre-foot of water. For the Alluvial aquifer, substantial depletion in long-term supplies, volume and levels caused by ASR would be considered significant.

Water levels in the Santa Clara River have fluctuated dramatically in the past as a result of drought and discharges from the existing upstream WRPs. The vegetation and sensitive riparian animal species adapt to a long-term average fluctuation. Regarding potential impacts to riparian vegetation and associated sensitive plant and animal species within the river corridor, the proposed Saugus Groundwater Banking/ASR program would cause a significant impact to biological resources in the river corridor if the change in groundwater levels and/or hydraulic conditions in the Santa Clara River would cause: (1) scouring of the channel bed to the point of removing a significant amount of aquatic, wetland, and riparian habitats from the river channel; (2) substantial modification of the relative amounts of these different habitats in the river, essentially altering the nature and quality of the riverine environment; (3) direct removal of sensitive habitat; and/or (4) substantial adverse effects to rare, endangered, or sensitive

species. In contrast, less than substantial increases in groundwater levels and/or river flow would be considered a beneficial impact to the sensitive biological resources along the river corridor by enhancing the growth of sensitive riparian plants and providing additional habitat for sensitive animal species. In addition, Saugus Groundwater Banking/ASR program impact on the aquifers will be considered beneficial if the program is shown to stabilize or increase water levels in existing wells, which continue to pump for at least one month per year.

(f) Significance Threshold Criteria for Groundwater Quality

The Saugus Groundwater Banking/ASR Program and the Newhall Ranch reclaimed water use program would be subject to the RWQCB water quality objectives for the Alluvial and Saugus aquifers contained in the Basin Plan.

Numerical objectives have been set by the RWQCB for various water quality parameters to protect local beneficial uses of groundwater (and surface water). Exceedance of these objectives as a result of the Specific Plan, including ASR and reclaimed water use, would be considered a significant impact. These objectives have been established for selected inorganic parameters, which are summarized in **Table 2.5-40, Groundwater Quality Objectives - Eastern Hydrologic Subarea.** The objectives have been established for each hydrologic subdivision within the Eastern Hydrologic Subarea of the Upper Santa Clara River Hydrologic Area.

Table 2.5-40
Groundwater Quality Objectives
Eastern Hydrologic Subarea

Parameter	Area[1]	
	Project Area	Downstream
		1.5
Boron	1.0	
Chloride	150	200
Sulfate	350	1,200
TDS[2]	1,000	2,500

Source: Water Quality Objectives, Basin Plan, June 13, 1994, California Regional Water Quality Control Board. Downstream values from Table 3-10 "Santa Clara-Piru Creek, lower area east of Piru Creek"

[1] *All values are in milligrams per liter (mg/L).*

[2] *TDS = Total dissolved solids.*

Typical concentrations of several water-quality parameters in the Saugus and Alluvial aquifers are listed in **Table 2.5-41, Typical Saugus and Alluvial Aquifer Water Quality**. RWQCB basin standards will serve as the water quality threshold of significance. Therefore, the project would result in a significant water quality impact if it would introduce constituents at concentrations that would degrade water quality in either the Saugus or Alluvial aquifer pursuant to RWQCB policy.

Table 2.5-41

Typical Saugus and Alluvial Aquifer Water Quality

Parameter	Concentration[1]	
	Saugus Aquifer[2]	Alluvial Aquifer[3]
Boron	0.1	0.4 to 0.6
Chloride	35	46 to 80
Nitrate (NO_3)	15	3 to 14
Sodium	74	86 to 128
Sulfate	35	280 to 394
TDS[4]	619	730 to 1,053

[1] *All values are in milligrams per liter (mg/L), except where indicated. Concentrations are averages of detected values for 1989 to 1994,*

[2] *Source: Table 3-10 in CH_2M HILL, Water Resources and Wastewater Management for the Newhall Ranch Project, (Thousand Oaks, California: Revised June 1996), p. 3-37.*

[3] *Source: Table 3-16 in CH_2M HILL, Water Resources and Wastewater Management for the Newhall Ranch Project, (Thousand Oaks, California: Revised June 1996), p. 3-50. Values are concentration ranges measured in July and August 1989 at three wells owned by the Newhall Land and Farming Company.*

[4] *TDS = total dissolved solids.*

Any improvement in the quality of groundwater (i.e., a decrease below background level in the concentration of dissolved constituents) as a result of the Saugus Groundwater Banking/ASR program would be considered a beneficial impact.

(g) Significance Threshold Criteria for Groundwater Recharge

Any significant change to groundwater recharge as a result of an increase in impervious area from development of the Specific Plan was addressed in the Newhall Ranch Final EIR certified by Los Angeles County and upheld by the trial court. Consequently, this issue will not be addressed further.

(h) Significance Threshold Criteria for Land Surface Elevation

Any significant change in the elevation of the ground surface (subsidence or mounding) as a result of implementing the Saugus Groundwater Banking/ASR program will be considered a significant impact.

(i) Significance Threshold Criteria for Surface Water

Potential Specific Plan impacts on surface water would involve both significant changes in the flow rate and water quality of the Santa Clara River. An evaluation of the consequences of Specific Plan site activities and Specific Plan storm water drainage designs that may influence the surface-water runoff characteristics from the development is not within the scope of this additional impact analysis (see Final EIR Section 4.2, Flood). This issue is also not one of the six issues identified by the trial court and, therefore, will not be addressed further.

Concerning flow in the Santa Clara River, significant impacts of the Specific Plan are those that would cause substantial decreases in surface water flow. A reduction in surface water flow could occur from a reduction in the amount of groundwater discharging to the Santa Clara River. This reduction could occur as a result of groundwater pumping from the Saugus Formation during the ASR recovery phase, which may reduce the amount of Saugus groundwater discharge to the Alluvial Aquifer and, consequently, to the river. Reduction in surface water flow could also result from conversion of Newhall irrigation wells to municipal and industrial (M&I) use. Significance threshold (j), above, addresses this impact. Increases in surface water flow may also occur as a result of discharge from the Newhall Ranch water reclamation plant and importation of additional SWP supplies into the basin to meet potable and non-potable demands. For purposes of this evaluation, a reduction in surface water flow resulting from the project is considered a significant impact if the annual surface water flow is reduced by more than 10 percent in any given year.

Numerical objectives have been set by the RWQCB for various water quality parameters to protect local beneficial uses of surface water. Exceedance of these objectives due to the Newhall Ranch Specific Plan would be considered a significant impact. These objectives have been established for selected inorganic parameters, which are summarized in **Table 2.5-42, Surface Water Quality Objectives - Eastern Hydrologic Subarea**. These objectives have been established for each hydrologic subdivision within the Eastern Hydrologic Subarea of the Upper Santa Clara River Hydrologic Area.

Table 2.5-42
Surface Water Quality Objectives
Eastern Hydrologic Subarea

Parameter	Area[1]	
	Project Area	Downstream
Boron	1.5	1.5
Chloride	100	100
Nitrogen[2]	5	5
Sulfate	400	600
SAR[3]	10.0	5
TDS[4]	1,000	1,300

Source: Water Quality Objectives, Basin Plan, June 13, 1994, California Regional Water Quality Control Board.
[1]All values are in milligrams per liter (mg/L), except for SAR.
[2]Nitrogen = nitrate and nitrite as nitrogen.
[3]SAR = sodium adsorption ratio (Na/(0.5(Ca+Mg))
[4]TDS = Total dissolved solids.

(j) Significance Threshold Criteria for Agricultural Water Use on the Specific Plan Site

The applicant's historical and existing practice of using agricultural water to irrigate land in Los Angeles County is proposed as a water source to partially meet the Specific Plan's potable water demand. The agricultural water is used to irrigate crops cultivated on Newhall Land and Farming Company land in Los Angeles County. As agricultural activities are discontinued, the water historically and presently used to irrigate crops would now be used to serve the Specific Plan land uses. The amount of agricultural water used to meet potable demand of the Specific Plan would not increase over that amount used historically. This water would be distributed to areas on the Specific Plan site through potable water pipelines. Given that the water would be used in the same geographic area, the use of this water supply source would not create significant impacts in the watershed (the same amount of water would be used in the same area and there would be no significant net change in the amount pumped). Nevertheless, the applicant's use of existing agricultural water to satisfy a portion of the Specific Plan's potable demand will be assessed against the significance criteria of whether the use of that water would "[s]ubstantially 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 (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)."

(k) *Significance Threshold Criteria for Use of Reclaimed Water*

A portion of the surface flows in the Santa Clara River are comprised of tertiary treated effluent (reclaimed water) discharged from the existing Valencia and Saugus water reclamation plants. For purposes of this analysis, a substantial decrease in the amount of reclaimed water flowing downstream to Ventura County will be considered a significant impact.

2.5.6.4 Impacts Analysis

(a) *Newhall Ranch Reclaimed Water Use*

The Specific Plan proposes the use of reclaimed (also referred to as "recycled") water from the Newhall Ranch WRP on the Specific Plan site as a source of irrigation water. The State of California has made the use of reclaimed water a priority by enacting legislation encouraging and governing its use to offset demand for potable water. California Water Code §13576 presents the following findings:

> "(c) There is a need for a reliable source of water for uses not related to the supply of potable water to protect investments in agriculture, greenbelts, and recreation and to replenish groundwater basins, and protect and enhance fisheries, wildlife habitat, and riparian areas.
>
> (d) The environmental benefits of recycled water include a reduced demand for water in the Sacramento-San Joaquin Delta which is otherwise needed to maintain water quality, reduced discharge of waste into the ocean, and the enhancement of groundwater basins, recreation, fisheries, and wetlands.
>
> (f) The use of recycled water is a cost-effective, reliable method of helping to meet California's water supply needs.
>
> (h) Retail water suppliers and recycled water producers and wholesalers should promote the substitution of recycled water for potable water and imported water in order to maximize the appropriate cost-effective use of recycled water in California."

Consistent with these findings, California Water Code §13577 "establishes a statewide goal to recycle a total of 700,000 acre-feet of water per year by the year 2000 and 1,000,000 acre-feet of water per year by the year 2010." California Water Code §13579 further states that:

> "(a) In order to achieve the goals established in Section 13577, retail water suppliers shall identify potential uses for recycled water within their service areas, potential customers for recycled water service within their service areas, and, within a reasonable time, potential sources of recycled water."

The Specific Plan's goal is to facilitate construction of the Newhall Ranch WRP as a near zero-discharge facility, partially offsetting the demand for potable water. The WRP would generate 5,630 to 7,763 AFY of tertiary-treated wastewater, which could be reclaimed to help meet the total non-potable water demand of 9,035 AFY for the Specific Plan. For additional detail regarding the proposed use of reclaimed water on the Specific Plan site, please see Final EIR Section 1.0, Project Description, Section 5.0, subsection 3, Description of the Water Reclamation Plant, and Section 5.12, Wastewater Disposal.

As indicated in the Newhall Ranch Final EIR, in an average rainfall year, all tertiary-treated wastewater from the Newhall Ranch WRP would be reclaimed for irrigation, except in the months of October through March. For these winter months, collectively, about 286 to 1,025 acre-feet of the treated wastewater would not be needed to meet non-potable demand. The reclaimed water exceeding the Specific Plan's non-potable demand would be discharged to the Santa Clara River. The water quality impacts associated with the discharge of reclaimed water to the Santa Clara River was previously analyzed in the Newhall Ranch Specific Plan and Water Reclamation Plant Final EIR. The trial court upheld the adequacy of that analysis. As indicated in the Final EIR, discharges of reclaimed water from the Newhall Ranch WRP to the Santa Clara River must conform to the limits specified in the Regional Water Quality Control Board's Basin Plan (discharge limits were identified previously in the Final EIR, Table 5.0-2). As previously discussed, the WRP would meet the design criteria of the County Sanitation Districts of Los Angeles County (CSDLAC) for tertiary reclamation plants (as do the existing CSDLAC facilities in Saugus and Valencia), and would meet Basin Plan objectives and waste discharge requirements for the Santa Clara River. The Newhall Ranch WRP discharges, by meeting Basin Plan requirements, would also meet state and federal requirements for the water quality of discharges to a river.

Reclaimed water from the proposed Newhall Ranch WRP would be used for irrigating multi-family residential common areas, community open areas, the golf course, major road and parkway landscaping, school yard, park landscaping, and landscaping around commercial/office/community facilities. It could also be the water source for the Community Lake (the Specific Plan areas which can be served with potable versus non-potable water are shown in Final EIR Table 4.11-2).[50]

Two water distribution systems are proposed for the Specific Plan: a potable water system and a non-potable water system (see Final EIR Figure 4.11-8, Conceptual Backbone Water Plan). Other permitted

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50 Under the Water Reclamation Requirements program, treated wastewater may be used for groundwater recharge, recreational impoundments, industrial processing and supply, and landscape irrigation. California Regional Water Quality Control Board, Los Angeles Region. Draft Water Quality Control Plan (Basin Plan) [for the] Los Angeles Region, (Monterey Park, California: 13 June 1994), p. 1-23.

uses of reclaimed water under Title 22 of the California Code of Regulations, Division 4, Chapter 3, Article 3 include the irrigation of playgrounds, school yards and similar areas; non-restricted recreational impoundment (with no limitations on body-contact sports and activities); and surface and spray irrigation of food crops. These Title 22 requirements incorporate the requirements of the California Department of Health Services (See Title 22 for complete listing of permitted uses of reclaimed water). The use of reclaimed water on the Specific Plan site is considered a benefit to the environment because it reduces demand for potable water supplies, enhances groundwater recharge in the Santa Clarita Valley and protects and enhances wildlife habitat and riparian areas along the Santa Clara River. Furthermore, the State of California has made the finding that the use of reclaimed water for irrigation purposes, as proposed by the Newhall Ranch Specific Plan, is environmentally safe. California Water Code §13576 (e) states:

> "The use of recycled water has proven to be safe from a public health standpoint, and the State Department of Health Services is updating regulations for the use of recycled water."

Based on this information, along with the mitigation measures adopted by Los Angeles County as part of the partial certification of the Final EIR for the Newhall Ranch Specific Plan and Water Reclamation Plant relating to the use and discharge of reclaimed water, no significant water-related impacts would occur with respect to the use or discharge of reclaimed water on the Specific Plan site from the Newhall Ranch WRP.

(b) Impacts of CLWA Reclaimed Water Use

It has been suggested that the projected implementation of a reclaimed water program to increase the availability of reclaimed water in the Santa Clarita Valley will be "at the expense of the downstream users." In comments submitted on the Notice of Preparation, Ventura County claims that downstream users rely on reclaimed water discharged into the Santa Clara River as a significant source of surface water flowing into Ventura County and into the service area of UWCD. (In light of the information presented in **Section 2.5.6.2**, above, regarding the amount of water flowing into Ventura County originating in Los Angeles County, it does not appear that reclaimed water is a "significant" source of water for Ventura County. As indicated, only 26 percent of *all* water flowing in the portion of the Santa Clara River in Ventura County originates in Los Angeles County. Reclaimed water makes up only a small portion of the 26 percent.) For purpose of this analysis, a substantial decrease in the amount of reclaimed water flowing to Ventura County will be considered a significant impact.

As indicated in the UWMP (2000), reclaimed water is available from two existing WRPs, the Saugus and Valencia plants. In 1993, CLWA prepared a draft Reclaimed Water System Master Plan that outlined a multi-phase program to deliver reclaimed water in the Santa Clarita Valley. CLWA completed environmental review of Phase 1 of that Master Plan and is constructing Phase 1 of the project, which will deliver approximately 1,700 AF of water. Surveys conducted by CLWA indicate a high interest in using reclaimed water among existing users as well as future developments, replacing non-potable demands with reclaimed water instead of potable water. Overall, the 1993 program expected to reclaim up to 10,000 AF of highly (tertiary) treated wastewater suitable for use on golf courses, landscaping, and other non-potable uses.[51] An updated plan is in preparation stages, which would provide up to 17,000 AFY to meet a larger demand. An additional amount will be made available by the Newhall Ranch WRP.[52] For additional information regarding the planned use of reclaimed water in the Santa Clarita Valley, please refer to UWMP (2000), Chapter 7.0, Water Recycling.

DMS reports that the present amount of reclaimed water discharged into the Santa Clara River and contributing to the flow of water into Ventura County totals approximately 18,000 acre-feet per year. Approved buildout of the existing WRPs (Plants 26 and 32) would result in the generation of approximately 38,000 acre-feet of reclaimed water flow.[53] Subtracting the existing generation of 18,000 acre-feet from the total expected future generation of reclaimed water flows of 38,000 acre-feet, a total of approximately 20,000 acre-feet of additional reclaimed water supply would be available for use as part of CLWA's updated Reclaimed Water System Master Plan. Given that the CLWA program is proposing the ultimate use of approximately 17,000 acre-feet of reclaimed water, use of the reclaimed water as proposed would not result in a decrease in reclaimed water flow downstream (20,000 acre-feet of new supply minus 17,000 acre-feet of demand indicates that enough new reclaimed water is available and the use of existing reclaimed water supplies would not be required). Regarding potential water quality impacts associated with this water's use on the Specific Plan site, as indicated above for the Newhall Ranch WRP reclaimed water use, the use of CLWA reclaimed water on the Specific Plan site is considered a benefit to the environment because it reduces demand for potable water supplies, enhances groundwater recharge in the Santa Clarita Valley and protects and enhances wildlife habitat and riparian areas along the Santa Clara River. Furthermore, as proposed by the Newhall Ranch Specific Plan, the State of California has made the finding that the use of reclaimed water for irrigation purposes is environmentally safe. Consequently, no significant impacts are expected to occur onsite or downstream.

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51 *Source: UWMP*, December 2000, page 7-1.

52 Ibid., page 2-9.

53 Ibid., page 7-3.

(c) Newhall Agricultural Water Use

After maximizing the use of reclaimed water, the project applicant would meet the potable water demands of the Specific Plan by using the agricultural water historically and presently used by the applicant for agricultural irrigation purposes on its land in Los Angeles County. No additional agricultural water would be pumped under this condition; instead, the water presently used to irrigate crops would be used to serve urban land uses, as the agricultural areas are taken out of production.

The Newhall Land and Farming Company has been farming the land that includes portions of the Specific Plan area and elsewhere in Los Angeles County for many decades. In addition, Newhall owns private wells and uses the water provided by these wells to conduct its agricultural operations. The average annual amount of agricultural water that has been pumped from wells and used for agricultural operations in Los Angeles County from 1996 to 2000 is approximately 7,038 AFY.

The land would ultimately be taken out of agricultural production as it is converted to non-agricultural uses. The uses include residential and commercial land uses. Since the water is already used to support Newhall's agricultural uses, there are not expected to be significant adverse effects resulting from the water being used to partially meet the potable demand of the Specific Plan. The amount of water that will be used to serve the potable demand of the Specific Plan would not exceed the amount of water that was used for the agricultural uses that are taken out of production. The agricultural water would be used to meet potable water demand of the Specific Plan, in conjunction with imported water supplies. Prior to use on the Specific Plan site, the agricultural water would also be disinfected through the use of chlorination systems at each well location in order to meet Title 22 drinking water standards. The only potential impact associated with the use of Newhall's agricultural water is the conversion of that water to municipal water uses. Provided below is a discussion of this potential impact.

As stated, Newhall pumps approximately 7,038 AFY from wells located in Los Angeles County and irrigates its agricultural land in Los Angeles County. Most of this irrigation occurs on the valley floor using sprinklers or furrow irrigation methods. The crops transpire a portion of this water, a portion evaporates and a portion percolates below the root zone to groundwater present within the Alluvium. It is estimated that about 30 percent of the irrigation water recharges the underlying Alluvial Aquifer annually (CH2M HILL, 2002). Because the Alluvial Aquifer has a connection with the Santa Clara River, deep percolation of irrigation water also contributes to surface water base flow in the valley.

In the future, it is anticipated that this irrigated farmland will be developed as the Newhall Ranch Specific Plan is developed and the rest of the Santa Clarita Valley continues to urbanize. Consequently,

the water that has been historically utilized for irrigated agriculture will be made available to serve various municipal water demands for the Specific Plan, including drinking water, outdoor irrigation and recreation. Water used for outdoor irrigation will be utilized by the plants and transpired and a portion (10 to 30 percent) will percolate below the root zone to the underlying Alluvial Aquifer. The water that is not used for outdoor irrigation will ultimately be consumed and conveyed to water reclamation plants for treatment. At the present time, most of the reclaimed water is discharged to the Santa Clara River; however, the County Sanitation Districts of Los Angeles County (CSDLAC) 2015 Plan and the Newhall Ranch Specific Plan call for the Specific Plan wastewater to be reclaimed and used for irrigation of landscaping and golf courses, and other non-drinking water uses.

The conversion of land and water uses within the Newhall Ranch footprint, including the conversion of 7,038 AFY of water now used for irrigated agriculture to municipal uses, will not result in a substantial change in the amount of water recharging the hydrologic system in the river valley upstream of the County jurisdictional line. Under the Newhall Ranch Specific Plan, most of the water will either be used directly for outdoor irrigation or will be consumed, treated and reclaimed for irrigating landscaping, parks and golf courses. Thus, as the water is converted from agriculture to municipal uses, most of the water continues to be used for irrigation purposes. CH2M HILL evaluated the effects of the land use conversion, and the associated change in the locations and rates of water use, on total recharge to the river valley. The CH2M HILL analysis is presented in Table 1 of **Appendix 2.5**. The analysis indicates that the land and water use conversions would eliminate an estimated 2,393 AFY of agricultural return flows to the river/Alluvial Aquifer system, but would increase urban return flows to this system by a nearly equal amount. The urban return flows would be approximately 2,330 AFY and would arise from irrigating portions of the development directly overlying the Alluvial Aquifer and the Saugus Formation (467 AFY of deep percolation to groundwater); surface return flows of water used to irrigate the portions of the development that directly overlie the bedrock of the Pico Formation (1,577 AFY of return flow); and direct discharges of treated effluent from the Newhall WRP (286 AFY). Consequently, there will be no appreciable change in the contribution of groundwater to the Santa Clara River, and no appreciable change in river flows, due to conversion of land and water uses. In addition, as indicated previously in this report, the Alluvial Aquifer is not in an overdraft condition. Based on this information, potential impacts associated with conversion of agricultural water to municipal water are less than significant.

(d) CLWA State Water Project (SWP) Water Use

As discussed above, CLWA purchased an additional 41,000 AFY of SWP Table A entitlement in 1999 from water agencies in Kern County (Kern County Water Agency and Wheeler Ridge-Maricopa Water Storage District ["WRMWSD"]). The CLWA/WRMWSD water transfer constituted a separate project

with the potential to result in a significant impact on the environment; therefore, an EIR was required pursuant to CEQA. Accordingly, CLWA, as lead agency, prepared a Final EIR entitled, "Supplemental Water Project Environmental Impact Report," dated February 1999 (SCH No. 98041127) ("the CLWA Final EIR"). CLWA's Board of Directors certified the CLWA Final EIR as adequate in March 1999.

In April 1999, a lawsuit was brought challenging the adequacy of the CLWA Final EIR under CEQA. The trial court ruled in favor of CLWA, finding that the EIR fully complied with CEQA, and the plaintiffs appealed. The appellate court reversed the trial court's judgment and ordered the EIR decertified, but not on any of the grounds urged by the plaintiffs. Instead, the appellate court found that the CLWA Final EIR had "tiered" off of an EIR for a separate project ("the Monterey Agreement EIR") that had subsequently been decertified. The appellate court expressly found that, had it not been for the decertification of the Monterey Agreement EIR, it would have affirmed the trial court's ruling that the CLWA Final EIR complied with CEQA.

In September 2002, on remand from the appellate court, the trial court ordered the CLWA Final EIR decertified. However, the court allowed the water transfer itself to remain intact while CLWA prepares a new EIR. CLWA has already hired environmental consultants to prepare the new EIR and work on the EIR is well underway. Importantly, Specific Plan reliance on any of CLWA's additional SWP supplies would not occur, if at all, until late in the Specific Plan's 25- to 30-year buildout period. It is reasonable to expect that, by that time, CLWA will have completed the new EIR for the water transfer.

The water transfer does not require the construction of any new SWP or CLWA water delivery facilities, nor does it require the improvement of any existing facilities. Consequently, the water transfer is not expected to result in direct significant impacts to the physical environment. However, the water transfer has the potential to result in indirect impacts to the physical environment due to growth and development that may be served by the additional water supplies. The water transfer's potential indirect impacts will be addressed in the new EIR being prepared by CLWA. In addition, as stated above, the prior CLWA Final EIR was decertified based on a technical tiering issue only. Although decertified, therefore, the CLWA Final EIR still contains useful background information and impact analysis regarding CLWA water supplies.

CLWA water supplies no longer constitute any portion of the Specific Plan's primary water supplies. However, over time, CLWA water supplies could be used to supplement the Specific Plan's primary water supplies and, thus, facilitate development of the Specific Plan. In this way, CLWA water supplies could indirectly result in the environmental effects previously assessed in the partially certified *Newhall Ranch Final EIR* (SCH No. 95011015). This EIR is incorporated by reference and can be reviewed at the Los Angeles County Department of Regional Planning, located at 320 West Temple Street, Los Angeles, California 90012.

Prior to application and use in the Santa Clarita Valley, SWP water would be treated in water treatment plants operated by CLWA in order to meet or exceed local and regional water quality standards. Consistent with the information presented in the subsection entitled, "Potential for Degradation of Water Quality in the Alluvial Aquifer, Saugus Formation, or Santa Clara River," no significant water quality impacts would occur.

(e) Newhall/SWP Water Use

As stated above, the project applicant has entered into agreements to reserve and ultimately purchase 7,648 AFY of additional SWP Table A water entitlement, which would be delivered to CLWA through existing SWP facilities.

As stated in **Section 2.5.5.3** above, the Newhall SWP water will require purchase and sales agreements between the Berrenda Mesa Water District in Kern County and a designated SWP contractor. The proposed agreement constitutes a separate project, which may have a significant effect on the environment and, therefore, an EIR will be prepared in accordance with CEQA. Although not yet designated as such, CLWA is the likely SWP contractor that would enter into the proposed agreements. In that capacity, CLWA would act as the "lead agency" under CEQA and prepare the EIR for the proposed transfer of the surplus SWP water. This water would be used on the Specific Plan site, which is located in the CLWA service area within Los Angeles County.

The environmental impacts of the proposed transfer from Kern County to Santa Clarita Valley would have to be addressed in both the CLWA service area and the Berrenda Mesa service area. The EIR prepared by CLWA is expected to address the significant environmental effects of the proposed transfer in the CLWA service area, along with an assessment of significant cumulative impacts. CLWA has already circulated a Notice of Preparation ("NOP") of the EIR for the proposed transfer of SWP water supplies for use in connection with the Specific Plan. Although CLWA anticipates revising and recirculating the NOP to reflect a revised project description, both the prior and revised NOP provide information regarding anticipated environmental impacts and are incorporated by this reference. The NOPs can be reviewed by contacting Castaic Lake Water Agency, c/o Science Applications International Corporation, 816 State Street, Suite 500, Santa Barbara, CA 93101, or the Los Angeles County Department of Regional Planning, located at 320 W. Temple Street, Los Angeles, California 90012.

From an environmental perspective, the proposed transfer of additional SWP Table A entitlement to the CLWA service area would not require any new SWP facilities, or construction of any new water facilities, infrastructure or any other type of construction or land development. In addition, the proposed transfer

would not involve the conversion of any land uses within the CLWA service area. The increased supply of imported SWP water would also reduce future impacts to local groundwater supplies in Santa Clarita Valley. However, the water delivered to CLWA as a result of the proposed water transfer would be used to support development of the Newhall Ranch Specific Plan. Therefore, the proposed water transfer would facilitate the phased development of the Specific Plan, which would result in the environmental effects previously assessed in the partially certified *Newhall Ranch Final EIR* (SCH No. 95011015).

Like CLWA's SWP Table A water entitlement, prior to application and use in the Santa Clarita Valley, the Newhall/SWP water would be treated in water treatment plants operated by CLWA in order to meet or exceed local and regional water quality standards. Consistent with the information presented in the subsection entitled, "Potential for Degradation of Water Quality in the Alluvial Aquifer, Saugus Formation, or Santa Clara River," no significant water quality impacts would occur.

The environmental impacts of the proposed transfer within the Berrenda Mesa service area already have been evaluated in a separate certified Final EIR prepared by Berrenda Mesa entitled, *Final Environmental Impact Report, Transfer of Water Entitlements from Berrenda Mesa Water District for Use in the Dougherty Valley Area*, dated February 1996 (SCH No. 95033045) ("Berrenda Mesa Final EIR"). An Addendum to the Berrenda Mesa Final EIR is underway.

The Berrenda Mesa Final EIR evaluates the impacts of two related actions: (a) program-level evaluation of transferring up to 75,000 acre-feet of SWP water entitlements currently assigned to Berrenda Mesa; and (b) an evaluation of transferring 7,000 acre-feet of the 75,000 acre-feet of water entitlement transferred from Berrenda Mesa for use in the Dougherty Valley area of Contra Costa County. The program-level evaluation of the transfer of 75,000 acre-feet of SWP entitlement from Berrenda Mesa includes an assessment of impacts in Kern County and in portions of the SWP. The objectives of the 75,000 acre-feet transfer of SWP entitlement included the transfer of under-utilized water entitlements from Berrenda Mesa, provision for the beneficial use of the under-utilized water entitlement and reduction in water supply costs to the remaining irrigated acreage in Berrenda Mesa.

The lead agency for the Berrenda Mesa Final EIR was Berrenda Mesa because the main action considered in the document was the transfer of a portion of the SWP water entitlement from Berrenda Mesa for use in other areas of the state, including the transfer of up to 7,000 acre-feet of Berrenda Mesa's entitlement for use in the Dougherty Valley area. The Berrenda Mesa Final EIR was specifically prepared so that it could be used by Berrenda Mesa and other interested public agencies as the environmental documentation for the transfer of up to 75,000 acre-feet of SWP entitlement.

The Berrenda Mesa EIR was not challenged and, therefore, is conclusively presumed to comply with CEQA. See, CEQA Guidelines §21167.2. The Berrenda Mesa EIR is incorporated by reference and can be reviewed at the Berrenda Mesa Water District, located at 2100 F Street, Suite 100, Bakersfield, California 93301 or the Los Angeles County Department of Regional Planning, located at 320 W. Temple Street, Los Angeles, California 90012. CLWA must make the determination of whether any further environmental analysis is required for the Berrenda Mesa "side" of the proposed transfer.

(f) Nickel Water Use

As stated above, The Newhall Land and Farming Company has entered into an agreement to purchase 1,607 acre-feet of annual water entitlement ("Nickel Water") from Nickel Family LLC ("Nickel"), a property owner in Kern County. The Nickel Water would be delivered through the Kern County Water Agency (KCWA) to CLWA through the existing California Aqueduct and associated facilities. Because it is not subject to reductions in dry years, the Nickel Water is an extremely reliable water supply source for the Specific Plan.

Nickel acquired the Nickel Water as a result of KCWA's Kern River Restoration and Water Supply Program ("the Restoration Program"). KCWA approved the Restoration Program in September 2000. As part of the approved Restoration Program and the supporting contractual documents: (a) Nickel can sell its water to third parties; (b) that the water will be transported in the California Aqueduct to the full extent of the KCWA's right to use the Aqueduct; and (c) KCWA agreed to schedule deliveries with DWR at the same time and in the same manner as KCWA schedules deliveries of its SWP water to KCWA's Member Units. A copy of the Initial Study and Negative Declaration prepared for the Kern River Restoration and Water Supply Program, dated July 27, 2000, as well as the subsequent Negative Declaration addressing the transfer of water to Nickel, are incorporated by this reference, and are available for review at the Los Angeles County Department of Regional Planning, located at 320 W. Temple Street, Los Angeles, California 90012.

From an environmental perspective, the proposed transfer of 1,607 AFY of Nickel Water to the CLWA service area would not require the construction of any new SWP facilities, or the construction or improvement of any other new or existing water facilities or infrastructure. As a result, the use of the Nickel Water is not expected to cause any potential significant impacts to the physical environment. However, the use of the Nickel Water will facilitate the phased development of the Newhall Ranch Specific Plan. The growth associated with the Specific Plan has been addressed in the partially certified Newhall Ranch Final EIR (SCH No. 95011015). Other environmental issues associated with the use of

Nickel Water are the capability to deliver the water to Santa Clarita Valley, the quality of the water, and impacts to sensitive biological resources. These issues are discussed further below.

A report entitled, *Evaluation of Available Capacity in the California Aqueduct from Reach 10A to Reach 30* (November 23, 2002), has been prepared by Provost & Pritchard Engineering Group, Inc. to evaluate the ability of the existing California Aqueduct and associated facilities to convey the 1,607 AFY from areas in Kern County (Aqueduct Reach 10A) to CLWA at Castaic Lake (Aqueduct Reach 30) through the year 2035. As stated in the report, sufficient capacity in the Aqueduct is available to convey an additional 1,607 AFY of water from Kern County (Reach 10A) to Castaic Lake (Reach 30).

In perspective, 1,607 AFY equates to 8.8 cfs flowing for 3 months per year (or 2.2 cfs flowing throughout the year), assuming an Aqueduct conveyance system with an operational capacity range of 1,680 to 6,350 cfs and a storage capacity of 540,520 AF [54] within these two reaches. The needed 2.2 cfs of capacity represents just 0.13 percent of the total capacity at the low end of the range and 0.03 percent at the high end of the range. Because this water is a stable source, a very small amount, and could be transferred at anytime during the year, the needed capacity would be available during off-peak periods when the full capacity of the SWP system is not in use. A copy of the Provost & Pritchard report is provided in **Appendix 2.5.**

The proposed use of Nickel Water would not involve the conversion of any land uses within the CLWA service area. The increased supply of water would also reduce future potential impacts to local groundwater supplies in Santa Clarita Valley. However, the use of Nickel Water in the CLWA service area would be utilized to support phased development of the Newhall Ranch Specific Plan. Therefore, the proposed use of the Nickel Water would facilitate development of the Specific Plan, which would result in the environmental effects previously assessed in the partially certified *Newhall Ranch Final EIR* (SCH No. 95011015).

Like CLWA's SWP Table A water entitlement, prior to application and use in the Santa Clarita Valley, the Nickel Water would be treated in water treatment plants operated by CLWA in order to meet or exceed local and regional water quality standards. CLWA is presently in the process of completing the environmental documentation necessary to expand their treatment facilities. Consistent with the information presented below in the subsection entitled, "Potential for Degradation of Water Quality in the Alluvial Aquifer, Saugus Formation, or Santa Clara River," no significant water quality impacts would

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54 Combined storage of Quail Lake, Pyramid Lake, Elderberry Forebay, Castaic Lake and Castaic Lake Lagoon (see, DWR, Data Handbook-State Water Project, 1997).)

occur. Furthermore, because the Nickel Water would be transmitted through the existing California Aqueduct and associated facilities (i.e., Aqueduct), the water would take on the same water quality characteristics of SWP water.

With respect to potential impacts to riparian vegetation and sensitive species, which are riparian habitat dependent, the use of the Nickel Water would be considered a beneficial impact given that the water would, after use on Newhall Ranch, slightly increase the quantity of flows in the Santa Clara River (the 1,607 AFY of water represents a small 1.7 percent increase in water importation to the Santa Clarita Valley when compared with CLWA's 95,200 AFY entitlement). This increase in river flow would enhance the ability of the river system to support sensitive habitats and species. Such increases in river flow would also beneficially impact downstream water users in Ventura County by providing downstream water basins with added surface/groundwater supplies. Based on this information, no significant environmental impacts are expected in the Santa Clarita Valley and in areas downstream of the Valley due to the use of the Nickel Water.

(g) Semitropic Groundwater Banking

As discussed above, the applicant has entered into an agreement to reserve and purchase permanent water storage capacity of up to 55,000 acre-feet in the Semitropic Water Storage District Groundwater Banking Program, making the applicant one of the District's partners in the Groundwater Banking Program. The water banked pursuant the applicant's agreement with the District would be extracted in dry years in amounts of up to 4,950 AFY. This supply would serve as a Specific Plan water source in dry years only.

The Semitropic Water Storage District is located in north-central Kern County in the San Joaquin Valley, approximately 20 miles northwest of the City of Bakersfield. The District provides SWP supplies for agricultural irrigation on land located in Kern County, immediately east of the California Aqueduct. Using its groundwater storage capacity of one million acre-feet, the District began implementation of the Groundwater Banking Program in 1995. The District operates the Program by accepting surplus SWP water supplies from its banking partners in wet years and returning the water in dry years. The Program is a long-term water storage program designed to recharge groundwater and reduce overdraft, increase operational reliability and flexibility, and optimize the distribution and use of available water resources between the District and its banking partners.

As part of the Program's dry-year water return process, the District can leave its own SWP entitlement supplies in the Aqueduct for use by its banking partners. The District has also constructed facilities so that banked groundwater can be pumped into the District's canal and, through reverse pumping plants, delivered to the Aqueduct for use by the District's banking partners.

To assess the potential environmental impacts of implementing the Groundwater Banking Program, the District and Metropolitan Water District of Southern California prepared the *Semitropic Groundwater Banking Project Draft Environmental Impact Report*, dated March 1994 (SCH No. 93072024), the *Semitropic Groundwater Banking Project Final Environmental Impact Report*, dated July 1994 (SCH No. 93072024), CEQA findings and a mitigation monitoring plan. Those environmental documents evaluated the potential impacts related to the District's proposed construction, upgrade and conjunctive use of various water conveyance facilities. The Draft and Final EIRs for the Semitropic Groundwater Banking Program are incorporated by this reference and can be reviewed at the Semitropic Water Storage District, located at 1101 Central Avenue, Wasco, California 93280, or the Los Angeles County Department of Regional Planning, located at 320 W. Temple Street, Los Angeles, California 90012.

The applicant's agreement to participate in the Groundwater Banking Program would not require the construction of any new groundwater storage, pumping or conveyance facilities or the improvement of existing facilities. Therefore, use of the stored water supplies to serve the Specific Plan during dry years would not result in a direct impact to the physical environment.

The applicant's agreement to participate in the Groundwater Banking Program would not adversely affect the quality of the District's groundwater supplies or the quality of water in the California Aqueduct, nor would it violate any water quality standards. The eventual withdrawal of groundwater from the District (up to 4,950 AF) is within the normal limits for the District's existing operations. Both the District and DWR monitor water quality before allowing water into the California Aqueduct, and DWR monitors water quality in the Aqueduct. Like SWP Table A water imported under CLWA's entitlement, prior to application and use in the Santa Clarita Valley, water from the District's Groundwater Banking Program would be treated in water treatment plants operated by CLWA in order to meet or exceed local and regional water quality standards. Consistent with the information presented below in the subsection entitled, "Potential for Degradation of Water Quality in the Alluvial Aquifer, Saugus Formation, or Santa Clara River," no significant water quality impacts would occur.

(h) Specific Plan Impacts (Including Saugus Groundwater Banking/ASR Program)

A groundwater modeling analysis was performed by CH2M Hill to assess the potential impacts of the Saugus Groundwater Banking/ASR program and the Newhall Ranch Specific Plan as a whole (including ASR). The results of this assessment are provided below (see *Newhall Ranch Updated Water Resources Impact Evaluation*, prepared by CH2M Hill, November 2002, in **Appendix 2.5** for the complete analysis.) **Section 2.5.5,** above, provides a description of the Saugus Groundwater Banking/ASR program, where similar programs are in use, information establishing that the program is feasible, and that water injected during average and wet years would be available when needed during dry years. This analysis will

identify the impacts of the Saugus Groundwater Banking/ASR program and the Newhall Ranch Specific Plan as a whole (including ASR), and assess whether the impacts, if any, are significant when measured against the thresholds of significance described above.

The Santa Clarita Valley water purveyors have prepared the UWMP, which includes groundwater as a local supply source for satisfying the existing and projected future water demand in the Santa Clarita Valley. Although the source(s) of potable water identified for the Specific Plan would not result in the net use of groundwater over that which is planned for the Santa Clarita Valley in the UWMP, this section will address the impacts, if any, of full build-out of the Specific Plan and implementation of the Saugus Groundwater Banking/ASR program while the purveyors' groundwater production plans are in operation, and the significance of those impacts, if any. This subsection also presents an analysis of impacts associated with full build-out of the Specific Plan and implementation of the Saugus Groundwater Banking/ASR program under existing conditions. However, it should be noted that this scenario would not actually occur because it assumes that the use of groundwater as depicted in the UWMP (in order to meet the demands of additional approved and projected development other than Newhall Ranch) would not occur, and that the only change to the management of the groundwater basin that would occur in the future is implementation of the Saugus Groundwater Banking/ASR program. Although not a realistic scenario, the analysis of impacts under existing conditions is provided for CEQA purposes.

(1) Design of Model Simulations for Evaluating Impacts of ASR Operations and Specific Plan

It has been suggested that the proposed Saugus Groundwater Banking/ASR program and the Specific Plan could reduce groundwater levels in the Alluvial and Saugus aquifers, and adversely impact beneficial water users in the Santa Clarita Valley and downstream into Ventura County. As indicated above, the CEQA Guidelines state that a project would normally have a significant effect on the environment if it would substantially deplete groundwater supplies such that there would be a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

In order to evaluate impacts resulting from the Specific Plan and the proposed Saugus Groundwater Banking/ASR program, two pumping scenarios were developed. The scenario for evaluating impacts under existing conditions considered existing pumping volumes from the Alluvium and Saugus based on 1994-1999 pumping records. The scenario for evaluating impacts under future conditions was based on operational plans for the Alluvial aquifer and the Saugus Formation in the Santa Clarita Valley through

the year 2020, as described in the UWMP. Simulated project ASR operations and Specific Plan land use and water use patterns were superimposed on both pumping scenarios, so that potential impacts to existing and future conditions could be evaluated. This was done because the Specific Plan and the Saugus Groundwater Banking/ASR program will be developed over many years as the non-project pumping volumes also increase gradually over time from existing conditions.

1. Non-project groundwater pumping[55] for the existing baseline condition as described in the UWMP is represented as follows:

   a. Alluvial aquifer pumping is simulated as 37,500 AFY during normal/average years and as 32,500 AFY during dry years.

   b. Saugus Formation pumping is simulated as 7,500 AFY during normal and wet years.

   c. Saugus Formation pumping consists of 11,500 AFY during the simulated 3-year drought.

   d. Non-project pumping from each aquifer is simulated as occurring at existing well sites.

   e. Non-project pumping follows the monthly demand curve observed by water purveyors in the basin.

2. Non-project groundwater pumping for the future condition as described in the UWMP is represented as follows:

   a. Alluvial aquifer pumping is simulated as 35,000 AFY during normal/average years and as 32,500 AFY during dry years.

   b. Saugus Formation pumping is simulated as 11,000 AFY during normal and wet years.

   c. Saugus Formation pumping during a drought consists of:

      1. First year: 15,000 AFY

      2. Second year: 25,000 AFY

      3. Third year: 35,000 AFY

   d. Non-project pumping from each aquifer is simulated as occurring at existing well sites and at up to eight new Saugus well sites.

   e. Non-project pumping follows the monthly demand curve observed by water purveyors in the basin.

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[55] "Non-Project Groundwater Pumping" is defined as the groundwater pumping that would be conducted by the Valley water purveyors to meet existing and future water demands excluding the Newhall Ranch Specific Plan.

Local hydrology (precipitation and recharge conditions) for wet, normal, and dry years were simulated using historical data for the past 19 years (1982 – 2000) and this same pattern was projected into the future. Following are the results of the modeling analyses with respect to the issues raised.

(2) Influence of ASR Operations on Groundwater Elevations

Figures 5-15 and 5-16 in **Appendix 2.5** to the original Draft Additional Analysis (2001) (*Newhall Ranch ASR Impact Evaluation,* prepared by CH2Mhill, February 2001) show simulated Saugus groundwater elevations in the western portion of the Santa Clarita Valley just before the simulated 3-year drought of 1990-1992. Figure 5-15 shows these elevations without the ASR wellfield, and Figure 5-16 shows these elevations with the ASR wellfield in operation (both figures use the UWMP pumping scenario for non-project pumping). In Figure 5-16, the groundwater elevations reflect conditions at the end of a 3-year injection period (May 1989).[56] The figures show groundwater flow in the Saugus Formation towards the western limit of the Saugus beneath the Santa Clara River. As shown in the figures, the area between roughly the I-5 crossing and the western limit of the Saugus (approximately 2.5 miles upstream of the county line) is simulated by the model as a regional groundwater discharge area for the Saugus Formation. In Figure 5-16, superimposed on the regional flow pattern are localized mounds (areas of high groundwater elevations) where injection is occurring at wells in the north and south ASR wellfields.

Figures 5-17 and 5-18 in **Appendix 2.5** to the original Draft Additional Analysis (2001) (*Newhall Ranch ASR Impact Evaluation,* prepared by CH2Mhill, February 2001) show the simulated Saugus groundwater elevations near the end of the 3-year drought (without and with operation of the ASR wellfield, respectively). (Both figures use the UWMP pumping scenario for non-project pumping.) The figures show the same general regional flow pattern as for May 1989. However, unlike the May 1989 maps, the map in August 1992 under ASR operations shows a drawdown cone in the north wellfield arising from the pumping of north wellfield ASR wells to meet peak-season water supply needs for the Newhall Ranch Specific Plan.

Figure 2.5-32 contains hydrographs showing the effects of ASR on simulated groundwater elevations under the future (UWMP) pumping scenario for the rest of the Valley. The upper hydrograph diagram shows groundwater elevations without the ASR wellfield in operation (i.e., with no ASR injection and pumping occurring), while the lower hydrograph diagram shows groundwater elevations with the ASR wellfield in operation. The figure shows hydrographs for Saugus groundwater elevations in the north ASR wellfield and Alluvial groundwater elevations at three locations in the western portion of the Valley

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56 As explained in Section 5.3.4 (**Appendix 2.5** to the original Draft Additional Analysis (2001), *Newhall Ranch ASR Impact Evaluation,* prepared by CH2MHill, February 2001), injection during non-drought years was simulated during the period October through May, and the ASR wells were not simulated as operating during the period June through September.

(including the area where the Saugus Formation discharges to the Alluvium near the western-most limit of the Saugus Formation). As shown in the figure, the Saugus groundwater elevations at the ASR wells and the Alluvial groundwater elevations in the western portion of the Valley each show about 5 feet of seasonal fluctuation and no long-term water level declines before the 3-year drought. (The simulated seasonal fluctuations are largely caused by annual variations in precipitation and by annual and seasonal variations in pumping.) During the 3-year drought, a decline in groundwater elevations is evident in the Saugus Formation, but little or no decline is evident in the Alluvial aquifer. Water levels in the Saugus Formation begin to rise after the drought period ends (particularly after the last drought in water year 1994).

Figure **2.5-33** shows groundwater elevation changes in the Alluvial aquifer and in the Saugus Formation that are induced by ASR operations.[57] The figure shows that ASR injection induces about a 45- to 50-foot increase in Saugus Formation groundwater elevations in the North ASR Wellfield, and up to a 1-foot increase in Alluvial aquifer groundwater elevations. During ASR pumping cycles, as much as 120 feet of drawdown is induced in the North ASR Wellfield (Saugus Formation), but the maximum drawdown in the Alluvial aquifer is about 0.6 foot. Because the drawdown in the Alluvial aquifer during ASR pumping cycles will be small and short lived, ASR pumping cycles will not cause long-term groundwater elevation declines in the Alluvial aquifer, where riparian habitat is present along the river.

Based on the limited degree of drawdown both in terms of elevation and distance from the ASR wells, as well as the short-term nature of the drawdown, the Saugus Groundwater Banking/ASR program will not substantially deplete groundwater supplies such that there would be a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would not drop to an unacceptable level). The Saugus Groundwater Banking/ASR program will also not result in the depletion (a substantial decline in groundwater levels) of the current available supply from either the Saugus or Alluvial aquifers. Consequently, no significant adverse impacts to groundwater levels are anticipated within the basin or downstream in Ventura County.

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57 The simulated groundwater elevation changes for the Saugus Formation that are shown in Figure 2.5-32 are for the North ASR Wellfield. The North ASR Wellfield operates during the peak demand months (June through September), and the South ASR Wellfield is inactive during these months. During the remaining 8 months of a drought year ((October through May, which are lower-demand months), the south ASR wellfield is pumping, while the North ASR Wellfield is inactive. During each month of a drought year, only two ASR wells are pumping. Modeling results indicated that the groundwater elevation changes that would be induced by ASR operations under present-day pumping conditions would be similar to the ASR-induced changes shown in Figure 2.5-32 for the future (UWMP) pumping scenario.

(3) Influence of ASR Operations on Groundwater Storage and River Flows

It has been suggested that the proposed Saugus Groundwater Banking/ASR program would significantly reduce the storage capability of the local groundwater basins, which, in turn, would adversely affect beneficial downstream water users ultimately through a substantial reduction in flow downstream. The CEQA Guidelines[58] state that a project would normally have a significant effect on the environment if it will interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume.

Figure 2.5-34 shows the changes in the groundwater budget (including groundwater storage) that would occur over time due to ASR operations. The plot shows the changes in groundwater storage, evapotranspiration rates (by phreatophytes[59] withdrawing water from the water table), and river flows due to ASR operations.[60] The plot also compares these groundwater budget terms with the net injection, which is the difference between the injection volume and the pumping volume for the ASR system. All water budget terms shown in **Figure 2.5-34** are plotted as the cumulative increase (or decrease) in the water budget terms. For each curve, an ascending slope means that the volume is increasing, whereas a descending slope means the volume is decreasing. The curves show the following:

a. The cumulative change in the stored volume is always positive (greater than zero). This indicates that the single-year and 3-year drought periods do not extract more groundwater than was stored during the preceding years when injection was occurring.

b. A measurable long-term increase in river flows occurs as a result of ASR operations. The change in river flow consists of changes in groundwater discharge rates to the river, plus rejected groundwater recharge that arises from the increase in the amount of water stored in the groundwater system during ASR injection cycles. Rejected recharge is defined as an increase in streamflow caused by the ASR-induced long-term increase in groundwater storage and groundwater elevations. During drought years (when the ASR system is pumping groundwater from the Saugus Formation), the curve in **Figure 2.5-34** for the change in river flow is flat, indicating that little or no rejected recharge occurs during drought years. However, during non-drought years (when the ASR system is injecting water into the Saugus Formation), the curve for the change in river flows has a positive slope, which indicates that ASR injection is reducing the volume of unfilled pore space that is available in the groundwater system for receiving infiltration from the river during storm events. Over the 19-year simulated period, the total change in river flow due to the combined effects of (1) rejected recharge and (2) increases in direct groundwater discharges to the river is approximately 20,000 to 21,000 AF, which is equivalent to a long-term increase in river flows that averages about 1,050 to 1,100 AFY during the 19-year period.

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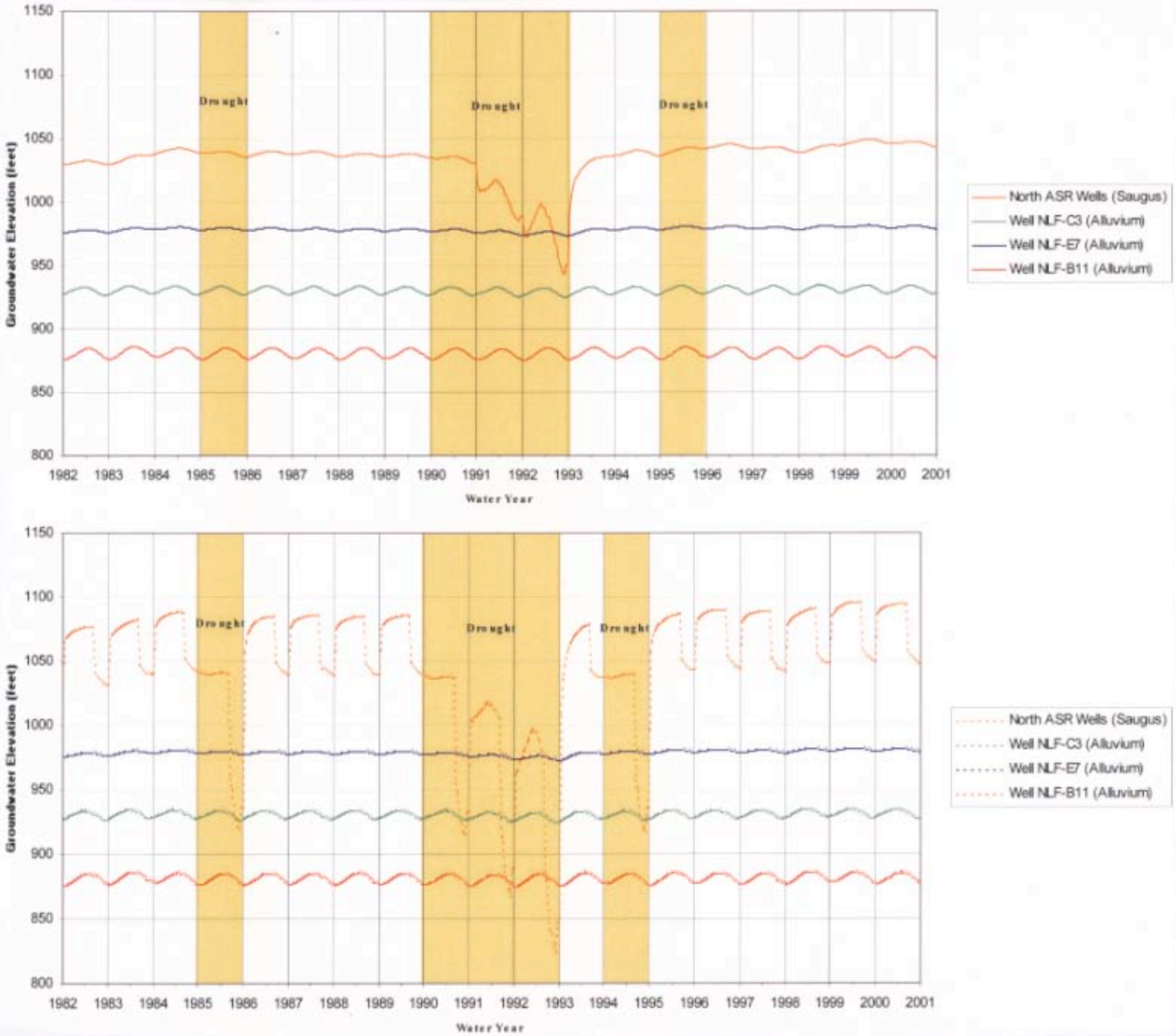
58 Guidelines for California Environmental Quality Act, Appendix G.

59 A phreatophyte is a deep-rooted plant that obtains its water from the water table or the layer of soil just above it.

60 Evapotranspiration is defined as withdrawal of groundwater directly from the water table by phreatophytes (vegetation with roots extending down to the water table). Evapotranspiration occurs primarily from the Alluvial Aquifer west of Round Mountain, where groundwater is close to the ground surface and is discharging directly into the river.



SOURCE: CH2MHill, November 2002

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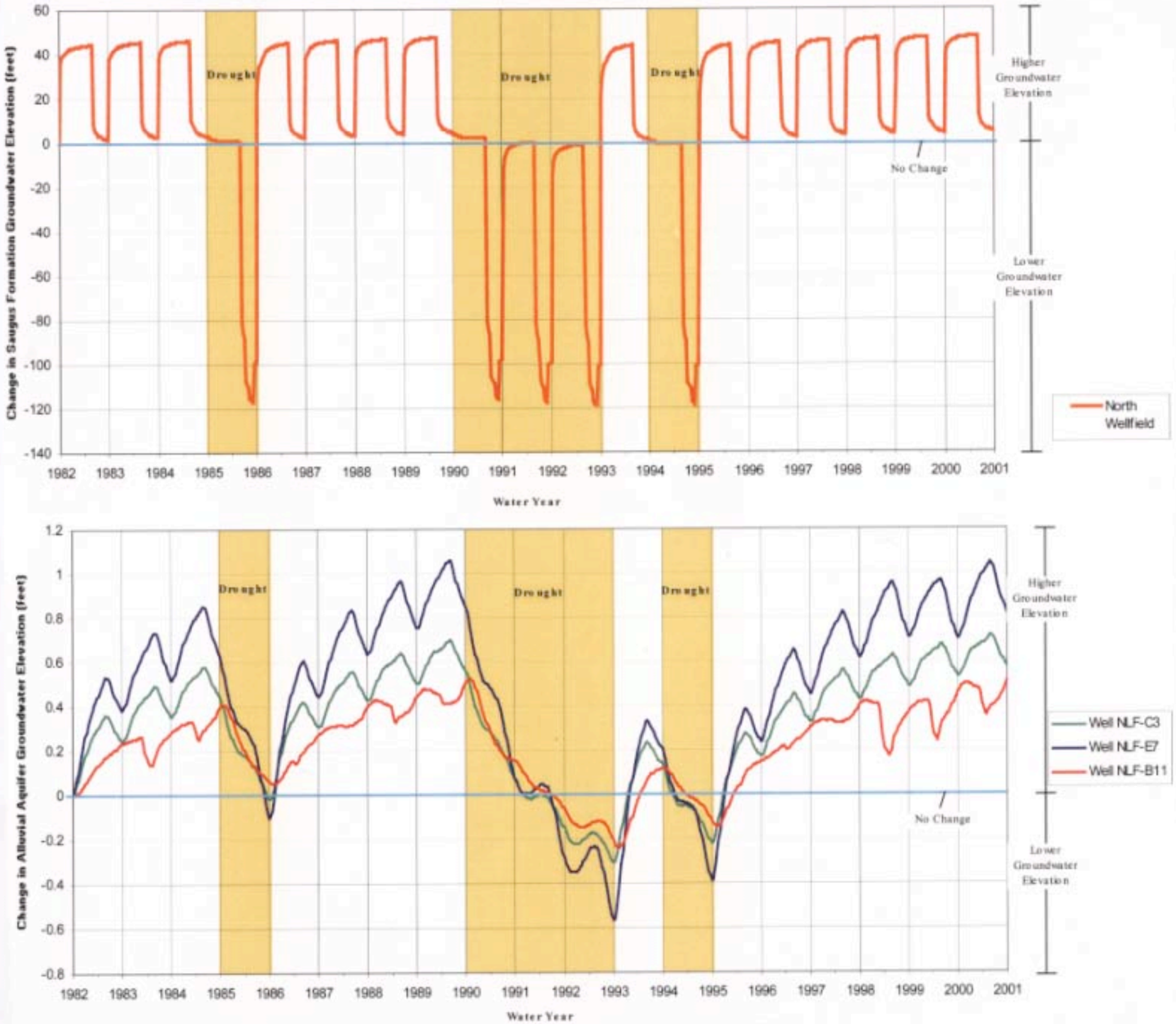
Key Points

1. Without ASR operations, Saugus groundwater elevations in the location of the North ASR Wellfield show only minor fluctuations in non-drought years. During a 3-year drought, water levels decline temporarily when pumping at other wells temporarily increases. The Saugus water levels recover fully and quickly at the end of the 3-year drought. Seasonal water level fluctuations in the Alluvial Aquifer are small and are very similar in drought years and non-drought years.
2. With ASR operations, Saugus groundwater elevations in the North ASR Wellfield show seasonal and year-to-year fluctuations due to injection and pumping cycles. Saugus groundwater elevations decline notably in the wellfield during pumping cycles. However, the Saugus groundwater elevations recover once pumping cycles end and injection cycles resume. Meanwhile, little change in groundwater elevations is visible in the Alluvial Aquifer in response to Saugus water level fluctuations.

FIGURE 2.5-32

SIMULATED GROUNDWATER ELEVATIONS OF THE NORTH ASR WELLFIELD AND ALLUVIAL AQUIFIER DOWNSTREAM OF CASTAIC CREEK



SOURCE: CH2MHill, November 2002

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Key Points

1. ASR operations cause Saugus groundwater elevations in the North ASR Wellfield to rise by as much as 50 feet during injection cycles and to decline by as much as 120 feet during pumping cycles.
2. For the Alluvial Aquifer, ASR operations induce one foot or less of change in groundwater elevations in the western portion of the valley (closest to the North and South ASR wellfields). The greatest decrease in Alluvial Aquifer elevations occurs at the end of the 3-year drought, but is only 0.6 feet. This indicates that riparian vegetation that is present in the alluvial sediments along the Santa Clara River corridor will not be adversely affected by the ASR program.

FIGURE 2.5-33

SIMULATED CHANGES IN GROUNDWATER ELEVATIONS DUE TO THE NEWHALL RANCH ASR PROGRAM

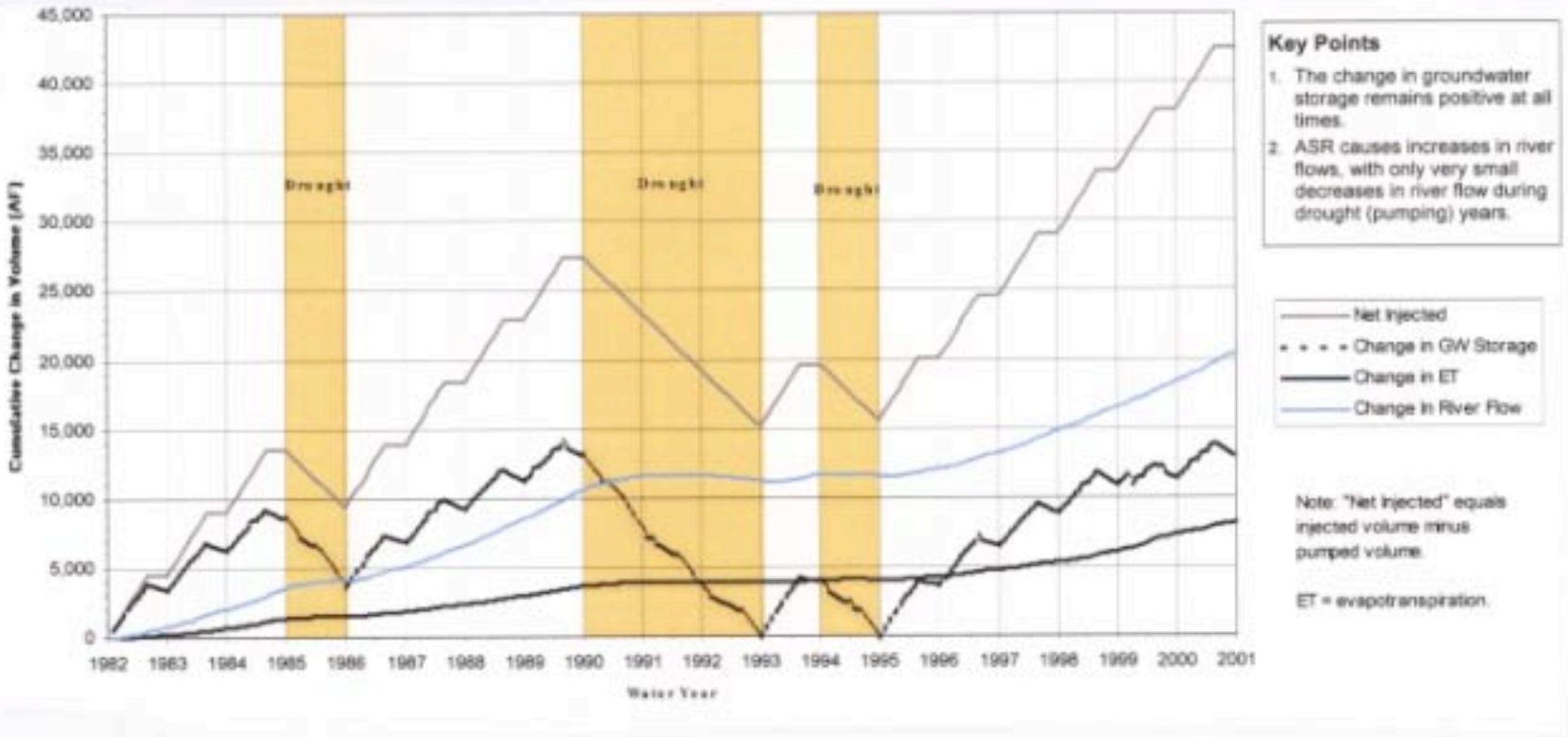

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FIGURE 2.5-34

CUMULATIVE NET INJECTION VOLUME, CUMULATIVE CHANGE IN DISCHARGE TO VENTURA COUNTY, AND CUMULATIVE CHANGE IN GROUNDWATER STORAGE DUE TO NEWHALL RANCH ASR PROGRAM

Based on this information, the proposed Saugus Groundwater Banking/ASR Program would not cause a net deficit in the amount of groundwater stored in the aquifer or the amount of flow in the river. In fact, the ASR program would have a beneficial long-term influence on the river and on the groundwater system, as groundwater elevations, groundwater storage volumes, and river flows would all increase.

The proposed Saugus Groundwater Banking/ASR Program is only one aspect of the Specific Plan that will have an influence on the hydrology of the Santa Clarita Valley. The effect of full build-out of the Specific Plan (including, but not limited to, ASR operations) on river flows (the primary concern of downstream water users) is addressed in the next section.

a) Influence of the Specific Plan on River Flows

The focus of the water resources impact analysis was on the change in Santa Clara River flows at the County line with and without full build-out of the Newhall Ranch Specific Plan (including the Saugus Groundwater Banking/ASR operations). The change in river flows is the key indicator of the Specific Plan's impacts on the hydrologic system, because the river is the lone hydrologic connection between the water resources of the Santa Clarita Valley and the water resources downstream in Ventura County. Little if any groundwater flow occurs in the County jurisdictional line / Blue Cut area, because of the presence of bedrock near the ground surface and the absence of substantially thick deposits of alluvium in this area. Hence, water flow across the County line occurs primarily in the river, not in the subsurface. Consequently, changes in water flows to Ventura County will occur as changes in river flow across the County line. Natural groundwater discharge from the Santa Clarita Valley occurs primarily as seepage from the Alluvial aquifer to the river between Round Mountain (which lies just east of I-5) and Blue Cut. The amount of seepage is governed by the groundwater elevations in the Alluvial aquifer. Hence, any predicted adverse impacts on river flows would arise from reduced groundwater elevations in the Alluvial aquifer, which could arise from changes in groundwater elevations within the Saugus Formation.

Changes in river flows due to the Specific Plan would arise from ASR operations (described previously), direct discharges to the river from the Newhall Ranch WRP (a total volume of 286 AF during the winter months), and the effects of the Specific Plan's conversion of land use and water use on surface and subsurface irrigation return flows to the river. Significant impacts are those that would substantially decrease river flow due to full build-out of the Specific Plan (including implementation of the Saugus Groundwater Banking/ASR program). In the discussions below, the potential for significant impacts is evaluated by comparing total river flows with and without the Specific Plan; calculating the differences in river flows caused by the Specific Plan; calculating the percentage change in flow caused by the Specific

Plan[61] and calculating the cumulative change in river flow caused by the Specific Plan. The calculations were performed by taking the numerical model simulations described previously for the ASR evaluation, and simulating the changes in irrigation patterns arising from changes in land use and water use under full build-out of the Specific Plan. The total impact on river flows was then calculated by adding together: (1) the modeling results; (2) separate calculations of irrigation return flows from portions of the Specific Plan overlying the non-water-bearing Pico Formation bedrock (areas that were outside the model boundaries); and (3) separate calculations of changes in direct discharges to the river from the Newhall and LACSD WRPs. Details of the calculation methodology and assumptions are presented in **Appendix 2.5** (*Newhall Ranch Updated Water Resources Impact Evaluation,* prepared by CH2MHill, November 2002).

b) Comparisons of Total River Flows With and Without the Specific Plan

Figure 2.5-35 shows historical monthly river flows and equivalent flows for future (full Valley build-out) conditions, with and without Newhall Ranch. **Figure 2.5-36** shows similar plots of annual river flow. **Figure 2.5-35** shows modest differences in monthly flows for most of the time period when comparing the historical record with full valley build-out excluding Newhall Ranch. **Figure 2.5-36** shows that, on an annual basis, the annual flows predicted for future Valley build-out are greater than the historical river flows, whether or not Newhall Ranch is developed. **Figure 2.5-36** also shows that the monthly and annual river flows for combined full build-out of the Newhall Ranch Specific Plan and the rest of the Valley are barely discernible from the flows for full Valley build-out without the Newhall Ranch Specific Plan.

c) Volumetric Changes in River Flow Induced by the Specific Plan

Figure 2.5-37 shows monthly and annual plots of potential impacts on river flow volumes arising from the development of Newhall Ranch, as measured against current (year 2000) conditions. During single drought years, the Specific Plan could have a small positive influence or some small negative influence on river flows, depending on conditions prior to the drought. The modeling analysis indicates that the Specific Plan will reduce river flows during the second and third years of a 3-year drought. During the third year of the drought, the Specific Plan would reduce river flows by up to 100 AF/month (1.7 cubic feet per second [cfs]) in the driest month, and the total flow reduction would be about 840 AFY for that year (1.2 cfs). **Figure 2.5-37** also shows that the Specific Plan would increase river flows in more

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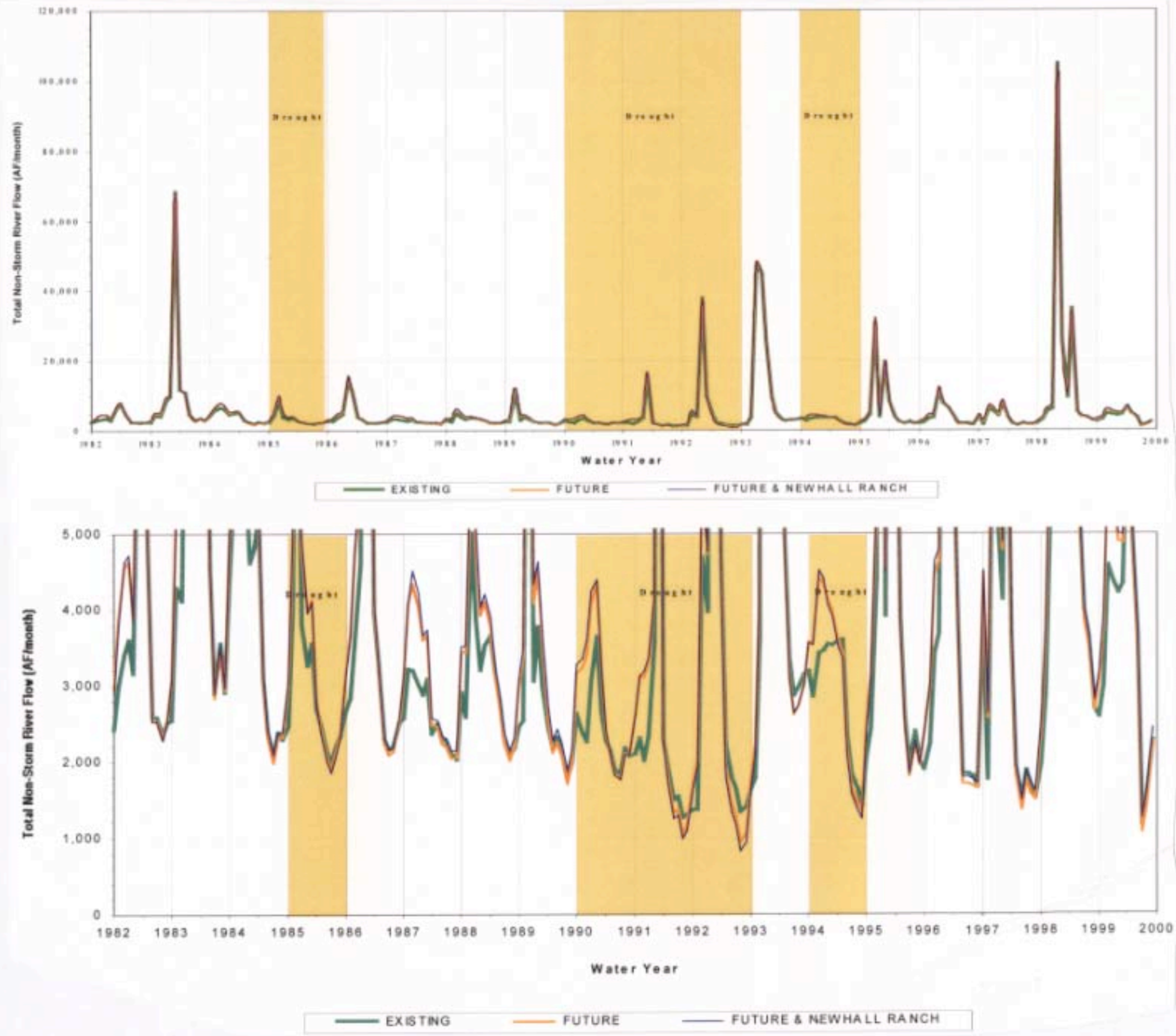
61 The percentage change is defined as the change in flow divided by the magnitude of flow that would occur without full build-out of the Specific Plan. The percentage change is calculated monthly and annually, and separate analyses of the percentage change are calculated using present-day conditions as the baseline scenario and using future (UWMP) conditions as the baseline scenario.



SOURCE: CH2MHill, November 2002

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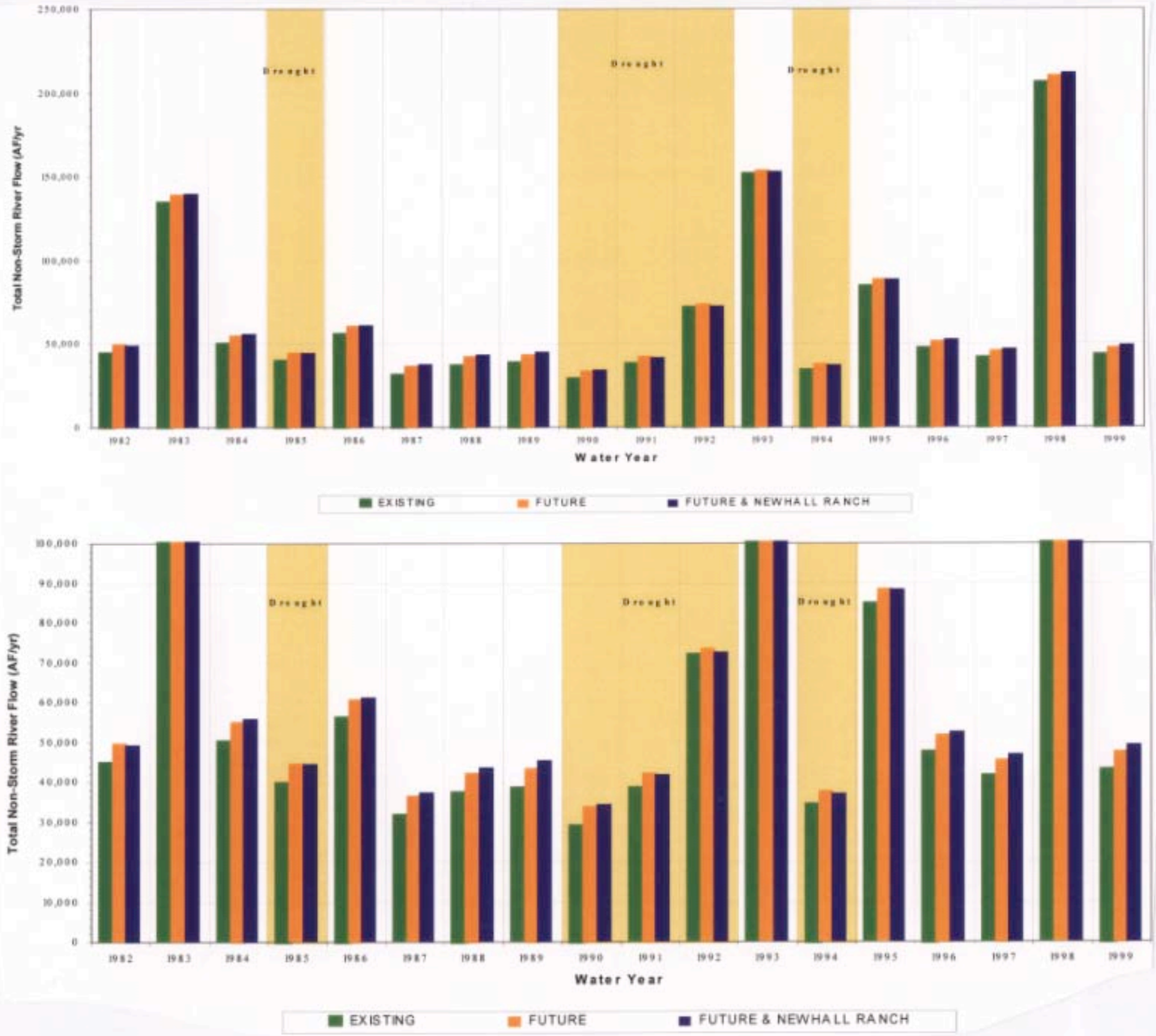
Key Points

1. Considering total river flows, including storm flows, no discernible difference is visible between historical monthly river flows and those predicted for full valley build-out conditions, with or without Newhall Ranch. (See the upper plot.)
2. Focusing on monthly flows below 5,000 AF/month (lower plot), modest differences are visible between existing conditions and future conditions without Newhall Ranch. During seasonal low-flow periods, the future monthly flows are predicted to be less than historical monthly flows. However, this reduction is smaller in magnitude than the increase in flows that occurs during other months, as shown by the higher line for future conditions during early 1987 and early 1994.
3. When Newhall Ranch is included in the future conditions analysis, the river flows are very similar to those that would occur in the future without Newhall Ranch.

Note: The existing condition is defined as historical gaged flows at the County Line, adjusted upwards to include existing (year 2000) discharges from the Saugus and Valencia water reclamation plants (WRPs).

FIGURE 2.5-35

MONTHLY SANTA CLARA RIVER FLOWS AT COUNTY LINE



SOURCE: CH2MHill, November 2002

NEWHALL RANCH™
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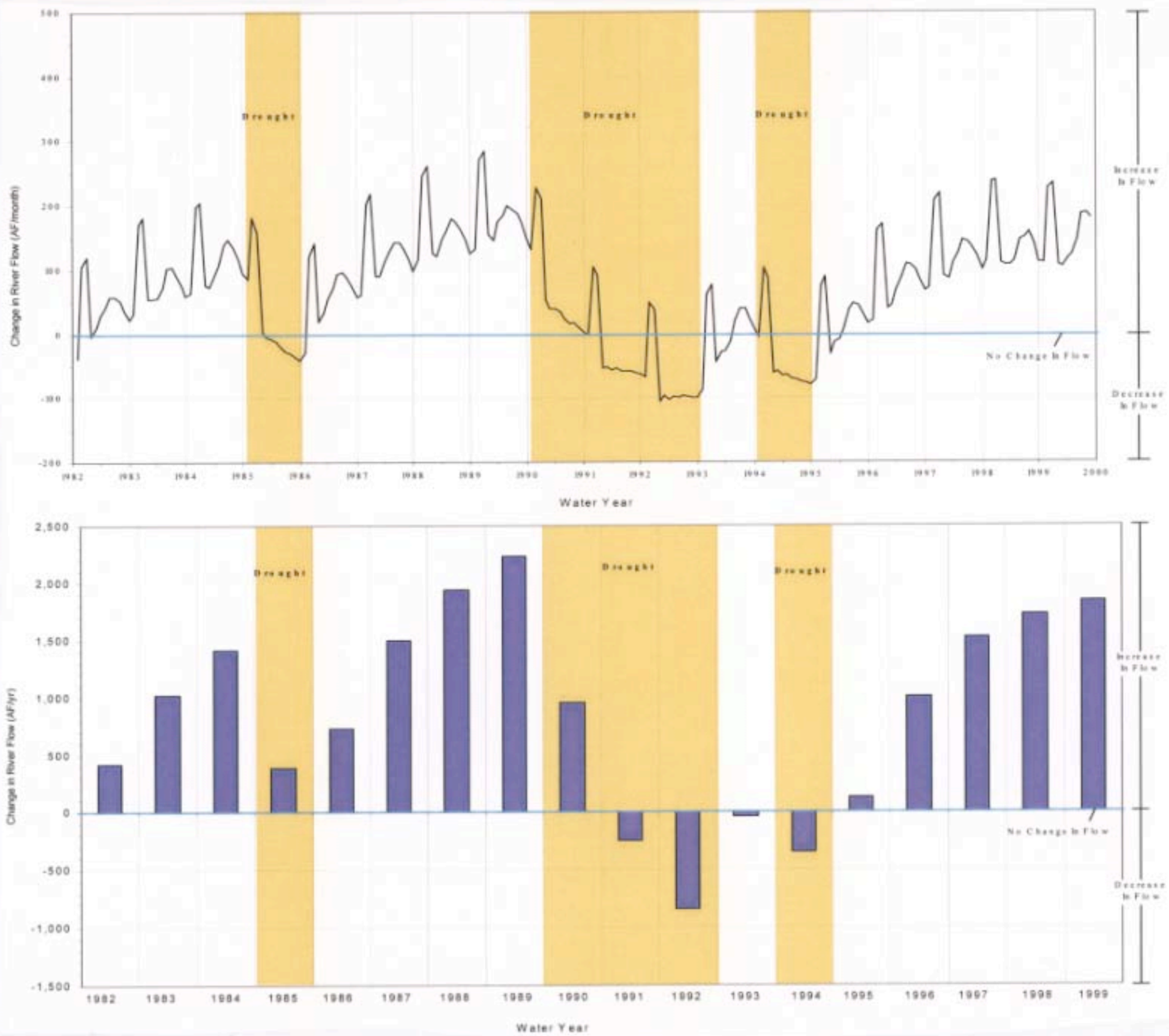
Key Points

1. Considering total river flows, including storm flows, differences due to future conditions (full valley build-out) are visible, unlike the monthly plots shown at the top of Figure 12. Future annual river flows are greater than the historical annual flows, regardless of the status of Newhall Ranch. (See the upper plot.)
2. Focusing on annual flows below 100,000 AF/year (lower plot), differences are even more visible between existing conditions and future conditions without Newhall Ranch.
3. When Newhall Ranch is included in the future conditions analysis, the annual river flows are very similar to those that would occur in the future without Newhall Ranch.

Note: The existing condition is defined as historical gaged flows at the County Line, adjusted upwards to include existing (year 2000) discharges from the Saugus and Valencia water reclamation plants (WRPs).

FIGURE 2.5-36

ANNUAL SANTA CLARA RIVER FLOWS AT COUNTY LINE



SOURCE: CH2MHill, November 2002

NEWHALL RANCH
Newhall Ranch Company

Key Points

1. These plots show the change in Santa Clara River flows that would occur if Newhall Ranch were fully built out under present-day conditions in the valley.
2. The changes in flow are induced by ASR operations; conversion of groundwater pumping from agricultural use to municipal use, which affects the locations and magnitudes of irrigation demands; and operation of the Newhall Ranch Water Reclamation Plant (WRP), which will discharge 286 AF/yr to the river during the winter months (December and January).
3. Monthly flows will increase by as much as 285 AF/month (4.8 cfs) during non-drought years.
4. During the second and third years of a 3-year drought, monthly flows will still be greater than present-day flows during December and January because of direct discharges from the Newhall Ranch WRP during those months. During the other months in years 2 and 3 of the drought, flows will be less than present-day flows, with the reduction as much as 100 AF during the driest month (which is equivalent to 1.7 cfs during that month).
5. During the last year of a 3-year drought, the annual river flow for that year could be 840 AF/yr (1.2 cfs) lower than would occur under present-day conditions in the valley. The effect of Newhall Ranch on annual river flow would be positive in the second year after a 3-year drought ends, unless another drought occurs at that time.

FIGURE 2.5-37

EFFECT OF NEWHALL RANCH PROJECT ON CURRENT-CONDITION SANTA CLARA RIVER FLOWS

months and years than it would decrease the river flows. This is consistent with **Figure 2.5-34** (discussed previously), which shows 20,000 to 21,000 AF of long-term total increase in river flows arising from the project ASR operations alone over the 19-year simulation period. **Figure 2.5-37** shows that river flows would increase by as much as 285 AF/month (4.8 cfs) and 2,200 AFY (3.0 cfs) during non-drought years, depending on antecedent conditions and the exact timing of drought years.

Figure 2.5-38 shows similar plots as **Figure 2.5-37**, but for future full build-out (UWMP) conditions in the Valley. Results are generally similar to those obtained using existing conditions as the baseline. However, the differences in flow are less positive during non-drought years and more negative during drought years than for the impact analysis that uses present-day (year 2000) conditions as the baseline for evaluating the impacts of the Specific Plan. Under full Valley build-out (UWMP) conditions, **Figure 2.5-38** shows the Specific Plan would reduce river flows during the third year of a 3-year drought by up to 125 AF/month (2.1 cfs) in the driest month, and the total flow reduction would be about 1,050 AFY for that year (1.5 cfs). Under full Valley build-out (UWMP) conditions, the Specific Plan would increase river flows by as much as 265 AF/month (4.4 cfs) and 1,900 AFY (2.6 cfs) during non-drought years, depending on antecedent conditions and the exact timing of drought years.

d) Percentage Changes in River Flow Caused by the Specific Plan

Figures 2.5-39 and **2.5-40** show monthly and annual plots of potential impacts of the Specific Plan on river flows, expressed as the percentage increase or decrease in flow induced by the Specific Plan. **Figure 2.5-39** shows the impact under present-day (year 2000) conditions, and **Figure 2.5-40** shows the impact using future full Valley build-out (UWMP) conditions as the baseline condition. The worst-month impact is a 7.5 percent reduction in river flows under present-day conditions (**Figure 2.5-39**) and a 12.5 percent reduction using future full Valley build-out (UWMP) conditions as the baseline condition (**Figure 2.5-40**). However, on an annual basis, the Specific Plan has only a 1.5 percent adverse impact on river flows under present-day conditions (**Figure 2.5-39**) and a 1.8 percent adverse impact on river flows under future full Valley build-out (UWMP) conditions (**Figure 2.5-40**). Moreover, during non-drought years, the Specific Plan increases monthly river flows by as much as 15 percent during the wettest months, and the Specific Plan increases annual flows by as much as 6 percent under present-day conditions (**Figure 2.5-39**) and 4.5 percent under future full valley build-out (UWMP) conditions (**Figure 2.5-40**).

e) Cumulative Changes in River Flow Caused by the Specific Plan

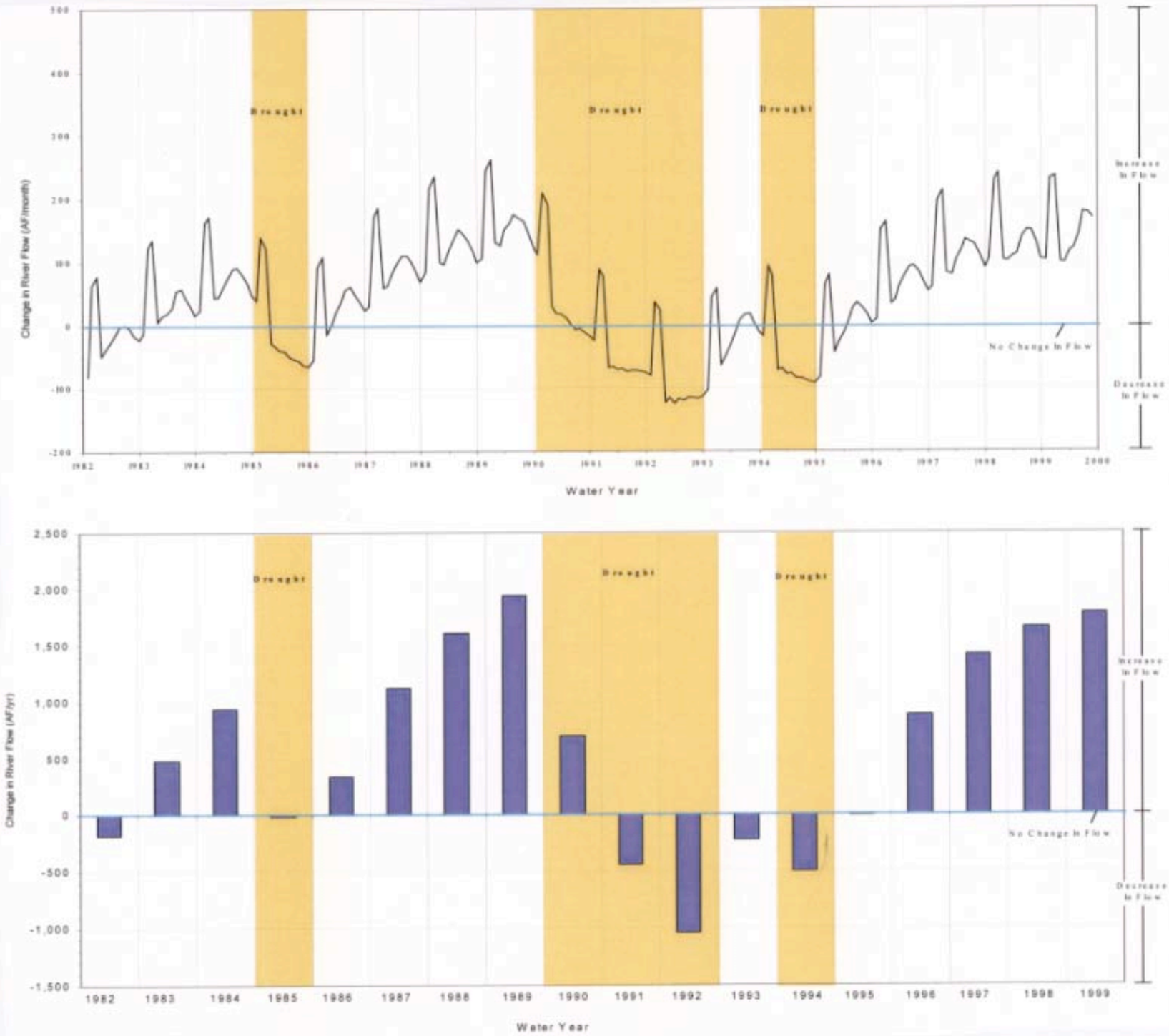
The overall improvement in river flows arising from full build-out of the Specific Plan is further illustrated by **Figures 2.5-41** and **2.5-42**, which are plots of monthly and annual cumulative changes in

river flows resulting from the Specific Plan under, respectively, present-day conditions and future full Valley build-out (UWMP) conditions. **Figure 2.5-41** indicates that the cumulative change in the flow volume of the river over the 19-year simulation period will be an increase of about 15,000 AF when evaluating the effects of the Specific Plan on present-day conditions in the Valley. **Figure 2.5-42** indicates that the cumulative change in the flow volume of the river over the 19-year simulation period will be an increase of about 10,500 AF when evaluating the effects of the Specific Plan on future full build-out [UWMP] conditions in the Valley.

In summary, the banking of water during non-drought years increases groundwater discharge from the Saugus Formation to the Alluvial aquifer, and from the Alluvial aquifer to the Santa Clara River. Therefore, the Saugus Groundwater Banking/ASR program and the Specific Plan as a whole have a long-term positive effect (increase) on the contribution of groundwater to the Santa Clara River baseflow. Only during portions of drought years is it possible that pumping from the ASR wellfields to meet water supply demands would result in a decrease in river flows due to the Specific Plan. However, the decrease in flow is insignificant compared to increased contributions to total flow in the Santa Clara River that will occur as a result of existing and future discharges from the WRPs. This is illustrated in **Figure 2.5-43**, which shows the combined impacts of the Specific Plan and future Valley growth compared with present-day conditions. **Figure 2.5-43** shows that a net increase in annual river flow occurs in all years during the 19-year simulated period, even despite short-lived periods of reduced flows during the summer months. Hence, any reductions in river flows arising from full build-out of the Valley and of the Specific Plan are short-lived, do not result in annual reductions in river flows (even during an extreme drought period), and are insignificant when compared to groundwater production from the downstream groundwater basins in Ventura County (192,200 AF, as reported for water year 1999 [United Water Conservation District, 2000]).

(4) Impacts on Groundwater Supplies, Interference with Groundwater Recharge, or Impacts on Groundwater Levels

Model simulations indicate that full build-out of the Specific Plan, including operation of the Saugus Groundwater Banking/ASR program, will not deplete groundwater supplies or interfere with natural groundwater recharge that normally occurs in the Santa Clarita Valley. The simulations show that the ASR program results in an increase in the volume of water that is in storage in the Saugus Formation and the Alluvial aquifer at most times during the simulated 19-year historical period (1982 through 2000). This occurs in part because the pumping volume during an individual drought year is less than the injection volume during a non-drought year. In addition, over the course of several years, there will be more non-drought years (i.e., combination of wet and normal years) than drought years, resulting in more water remaining in storage than is pumped.



SOURCE: CH2MHill, November 2002

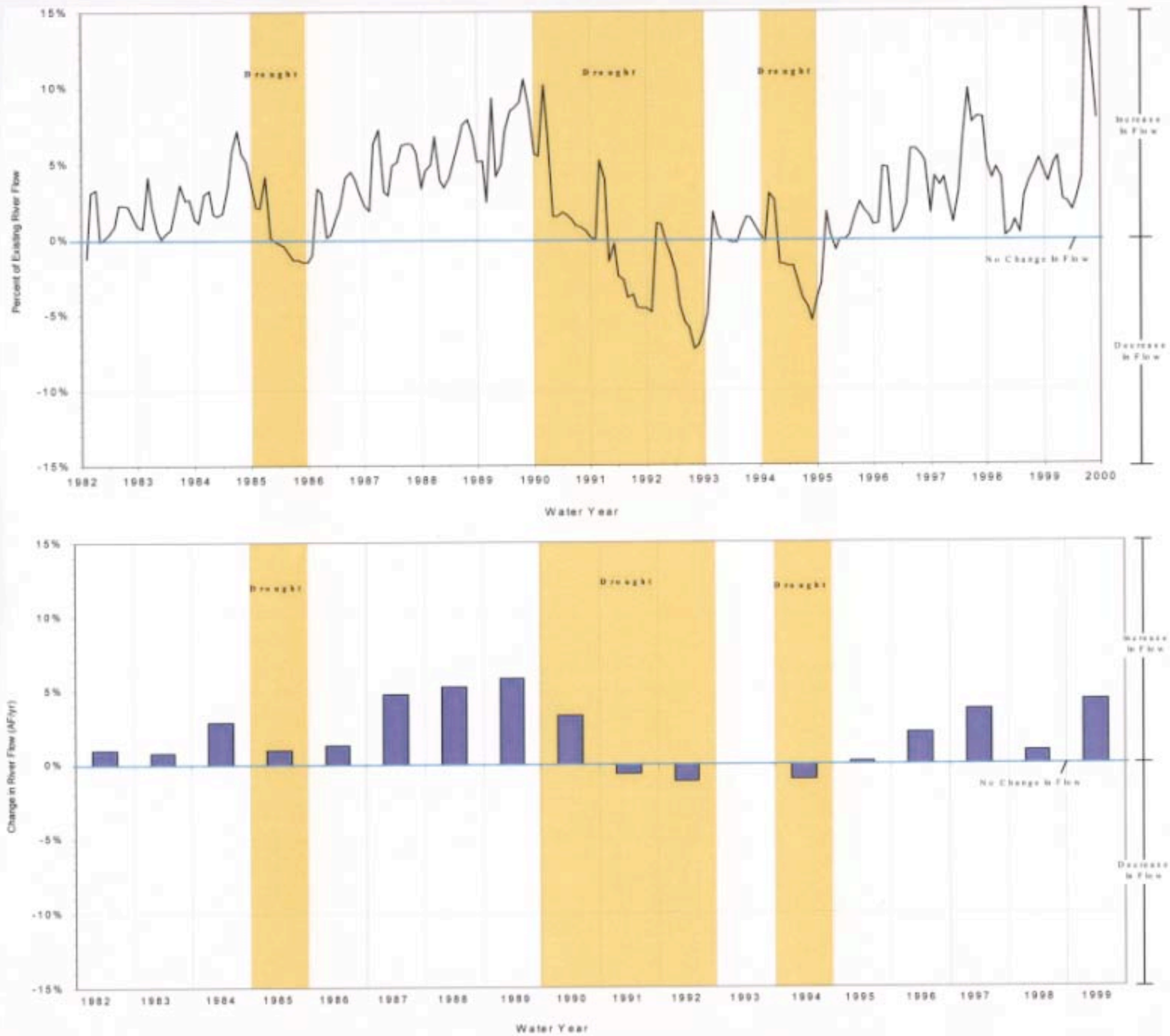
NEWHALL RANCH™
Newhall Ranch Company

Key Points

1. These plots show the change in Santa Clara River flows that would occur if Newhall Ranch were fully built out under future (full build-out) conditions in the rest of the valley.
2. The changes in flow are induced by ASR operations; conversion of groundwater pumping from agricultural use to municipal use, which affects the locations and magnitudes of irrigation demands; and operation of the Newhall Ranch Water Reclamation Plant (WRP), which will discharge 286 AF/yr to the river during the winter months (December and January).
3. The effects of Newhall Ranch on river flows using future conditions as the baseline condition for the rest of the valley (Figure 15) are similar to those using present-day conditions as the baseline condition for the rest of the valley (Figure 14).
4. During the second and third years of a 3-year drought, monthly flows will still be greater than present-day flows during December and January because of direct discharges from the Newhall Ranch WRP during those months. During the other months in years 2 and 3 of the drought, flows will be less than the flows that would occur without Newhall Ranch, with the reduction as much as 125 AF during the driest month (which is equivalent to 2.1 cfs during that month).
5. During the last year of a 3-year drought, the annual river flow for that year could be 1,050 AF/yr (1.5 cfs) lower than would occur under future conditions in the valley. The effect of Newhall Ranch on annual river flow would be positive in the second year after a 3-year drought ends, unless another drought occurs at that time.

FIGURE 2.5-38

EFFECT OF NEWHALL RANCH PROJECT ON FUTURE-CONDITION SANTA CLARA RIVER FLOWS



SOURCE: CH2MHill, November 2002

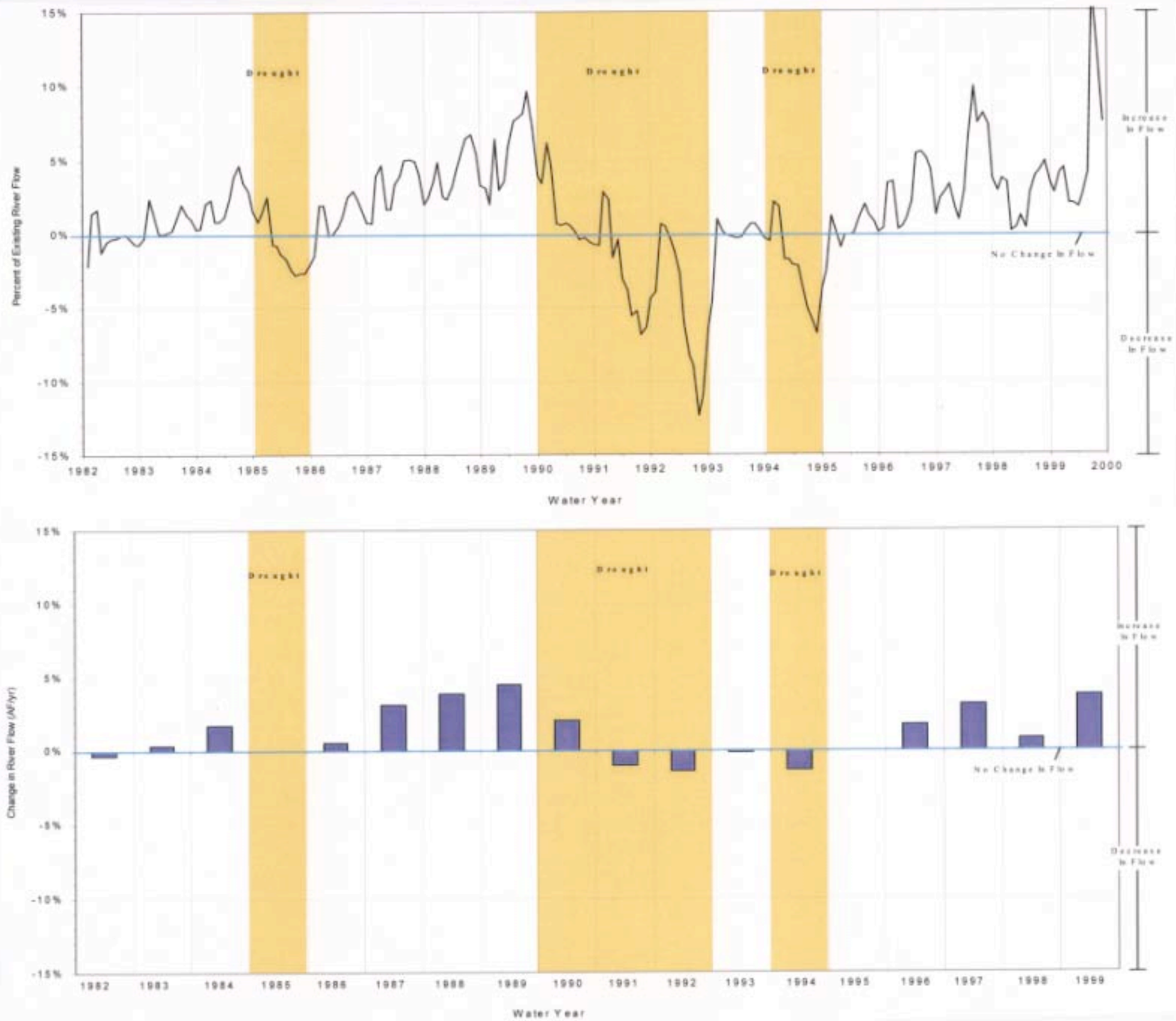
NEWHALL RANCH™
Newhall Ranch Company

Key Points

1. These plots express the Newhall Ranch impacts as a percentage of the historical flow record.
2. During non-drought years, the increase in river flows is as much as 15 percent on a monthly basis (upper plot) and 6 percent on an annual basis (lower plot).
3. For the 3-year drought, the worst decrease in river flows is about 7.5 percent for the worst month and 1.5 percent for the worst (third) year.

FIGURE 2.5-39

PERCENT CHANGES IN CURRENT-CONDITION SANTA CLARA RIVER FLOWS CAUSED BY THE NEWHALL RANCH PROJECT



SOURCE: CH2MHill, November 2002

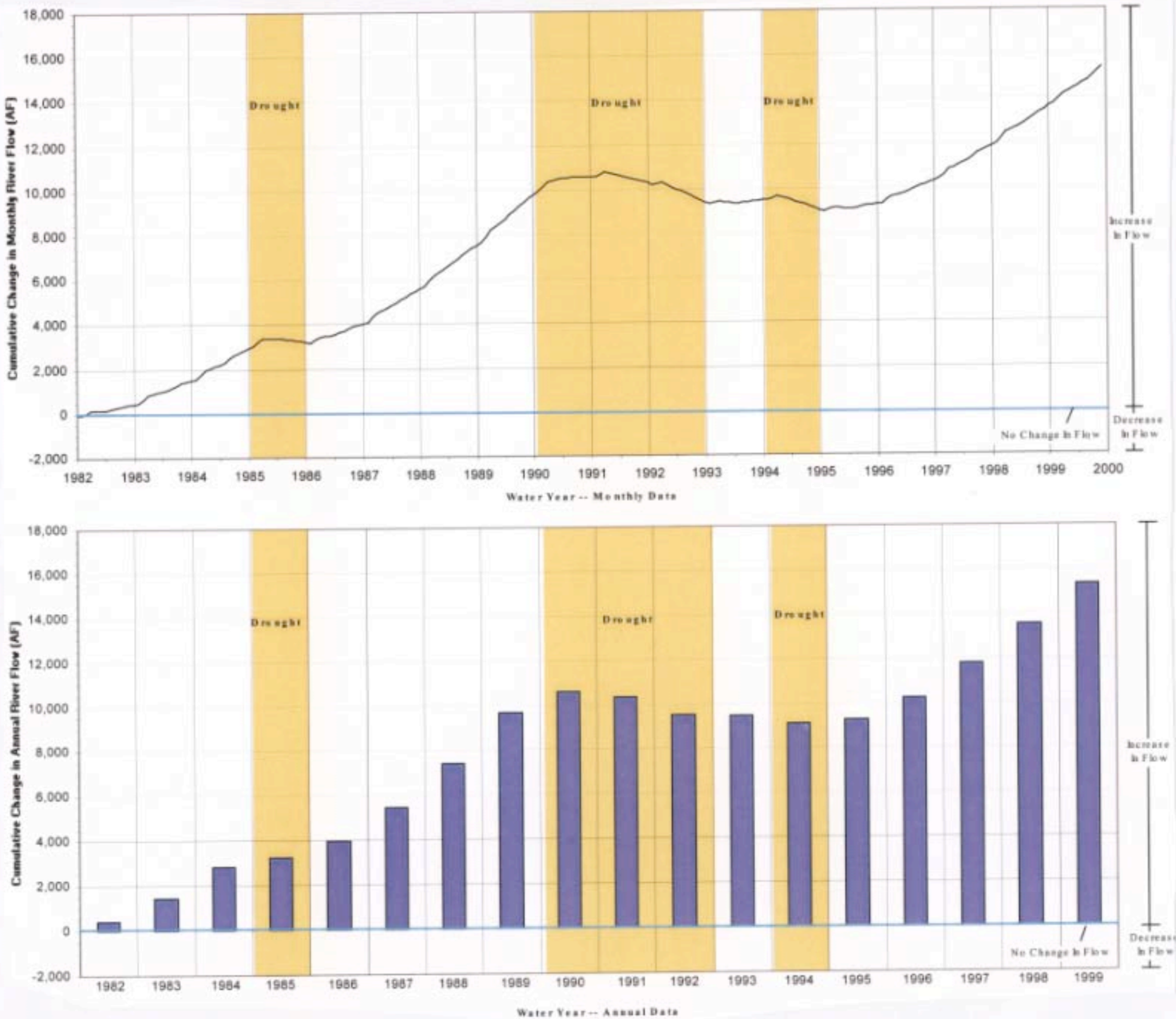
NEWHALL RANCH™
Newhall Ranch Company

Key Points

1. These plots express the Newhall Ranch impacts as a percentage of the flows that would occur in the future if Newhall Ranch were not present.
2. During non-drought years, the increase in river flows is as much as 15 percent on a monthly basis (upper plot) and 4.5 percent on an annual basis (lower plot).
3. For the 3-year drought, the worst decrease in river flows is 12.5 percent for the worst month and 1.8 percent for the worst (third) year.

FIGURE 2.5-40

PERCENT CHANGES IN FUTURE-CONDITION SANTA CLARA RIVER FLOWS CAUSED BY THE NEWHALL RANCH PROJECT



SOURCE: CH2MHill, November 2002

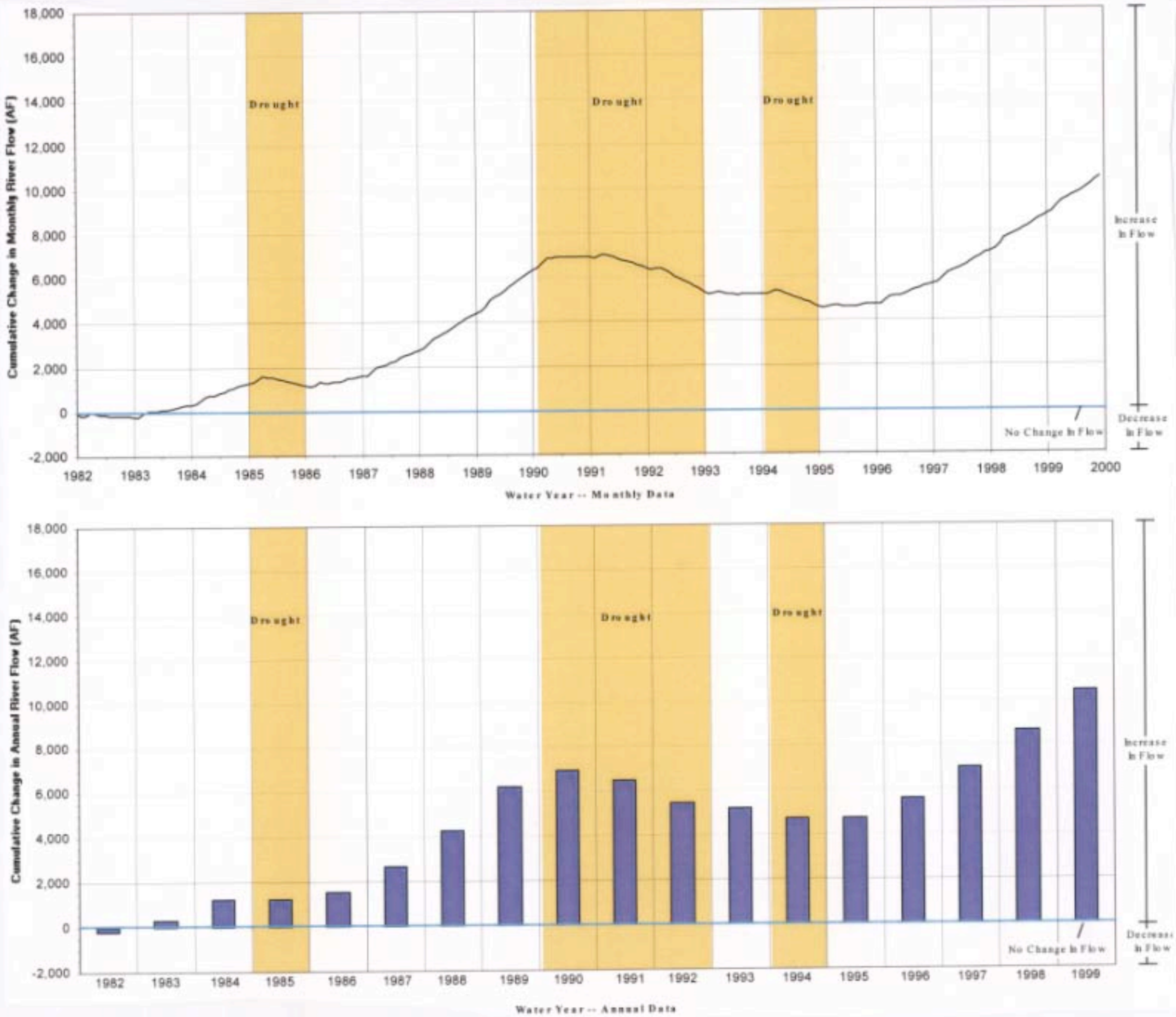
NEWHALL RANCH™
Newhall Ranch Company

Key Points

1. These plots show the cumulative impacts of the Newhall Ranch project on a monthly basis (upper plot) and annual basis (lower plot). These plots use present-day conditions as the baseline for evaluating project impacts.
2. Monthly cumulative impacts will be positive on a long-term basis. The project may have a small negative cumulative impact prior to the first discharges from the Newhall Ranch WRP. However, this negative impact will be eliminated by the combined effects of ASR injection and the occasional discharges from the Newhall Ranch WRP.
3. Annual cumulative impacts will be positive on a long-term basis, including during the first year of the project (if it is not a drought year).

FIGURE 2.5-41

CUMULATIVE EFFECT OF PROJECT ON CURRENT-CONDITION SANTA CLARA RIVER FLOWS



SOURCE: CH2MHill, November 2002

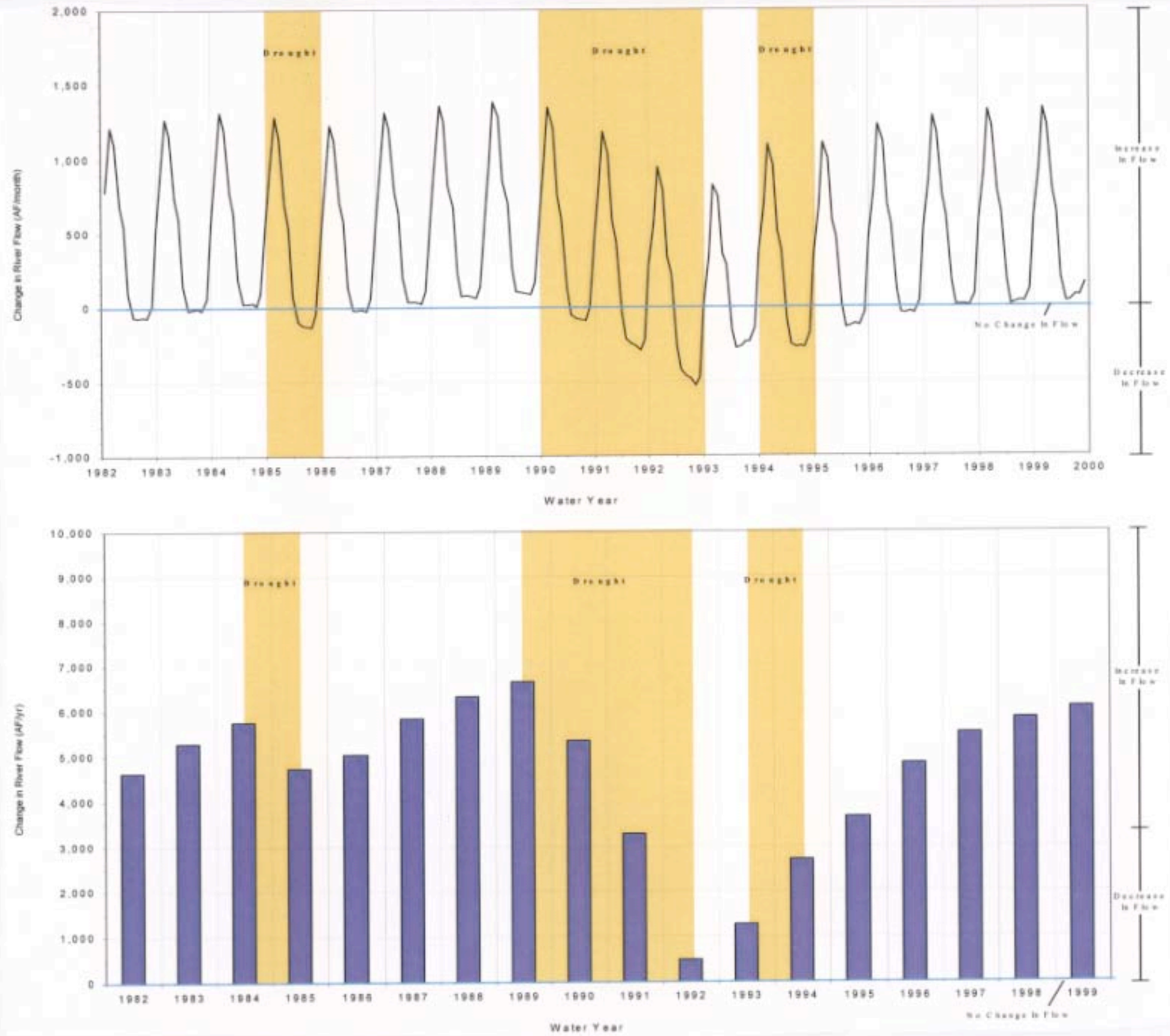
NEWHALL RANCH™
Newhall Ranch Company

Key Points

1. These plots show the cumulative impacts of the Newhall Ranch project on a monthly basis (upper plot) and annual basis (lower plot). These plots use future conditions (full valley build-out) as the baseline for evaluating project impacts.
2. Monthly cumulative impacts will be positive on a long-term basis. The project may have a small negative cumulative impact prior to the first discharges from the Newhall Ranch WRP. However, this negative impact will be eliminated by the combined effects of ASR injection and the occasional discharges from the Newhall Ranch WRP.
3. Annual cumulative impacts will be positive on a long-term basis, including during the first year of the project (if it is not a drought year).

FIGURE 2.5-42

CUMULATIVE EFFECT OF PROJECT ON FUTURE-CONDITION SANTA CLARA RIVER FLOWS



SOURCE: CH2MHill, November 2002

NEWHALL RANCH™
Newhall Ranch Company

Key Points

1. This plot shows the combined effect of growth inside and outside Newhall Ranch on present-day river flows.
2. Monthly flows are generally greater than under present-day conditions, except in the summer months during and immediately after a 3-year drought.
3. On an annual basis, the flows are greater than under present-day conditions, even during a 3-year drought.

FIGURE 2.5-43

EFFECT OF NEWHALL RANCH PROJECT AND OTHER EXPECTED FUTURE GROWTH ON CURRENT-CONDITION SANTA CLARA RIVER FLOWS

Groundwater levels in the Saugus Formation near ASR wells will rise during injection and fall during pumping. At the ASR wells, the model indicates that the amount of water level increase in the Saugus Formation will be on the order of 45 to 50 feet, and the drawdown will be no more than about 120 feet. ASR wells can and will be spaced so that adjacent non-project wells will not lose pumping capacity as a result of drawdown during pumping of the ASR wells. In fact, non-project wells in the area will benefit from the increase in groundwater levels resulting from injection of SWP or other water because of higher pumping levels (less energy required to pump) and long-term stable water levels.

(5) Biological Effects of Saugus ASR Program-Related Changes in Groundwater Levels and River Flow

It has been suggested that if the proposed Saugus Groundwater Banking/ASR program leads to a decline in groundwater levels in the Alluvial aquifer or flow levels in the Santa Clara River, sensitive plants and animals residing in the river corridor in Los Angeles County and Ventura County would be significantly impacted as the water source necessary for their survival would be diminished. If the ASR program results in an increase in groundwater levels or river flow levels of such a magnitude as to significantly increase flooding, erosion and sedimentation downstream, impacts could also be significant.

The significance thresholds used in this analysis indicate that the proposed Saugus Groundwater Banking/ASR program would cause a significant impact to biological resources in the river corridor if the change in groundwater levels and/or hydraulic conditions in the Santa Clara River caused: (1) scouring of the channel bed that would remove a significant amount of aquatic, wetland, and riparian habitats from the river channel; (2) substantial modification of the relative amounts of these different habitats in the river, essentially altering the nature and quality of the riverine environment; (3) direct removal of sensitive habitat; and/or (4) substantial effects to rare, endangered, or sensitive species. Conversely, less than substantial increases in groundwater levels and/or river flow would be considered beneficial impacts to the biological resource environmental along the river corridor, as the project would enhance the growth of sensitive riparian plants and provide additional habitat for sensitive animal species.

The focus of the assessment is on impacts to habitat and sensitive species in the river corridor on the Specific Plan site or downstream. Three distinct habitat types are found in the river corridor including: (1) aquatic habitats, consisting of flowing or ponded water; (2) wetland habitats, consisting of emergent herbs rooted in ponded water or saturated soils along the margins of the flowing water; and (3) riparian habitat, consisting of woody vegetation along the margins of the active channel and on the floodplain. Wildlife species associated with these habitat include: (1) the endangered unarmored three-spine stickleback (known to be present), least Bell's vireo (known to be present), southwestern arroyo toad (not

known to be present), southwestern willow flycatcher (known to be present), and California red-legged frog (not known to be present); and (2) other sensitive, but not endangered species known to be present, such as the arroyo chub, Santa Ana sucker, Two-striped garter snake, southwestern spadefoot toad, and southwestern pond turtle.

The impact assessment is based on the relationship between hydrogeologic and hydraulic conditions and aquatic/riparian habitats in the Santa Clara River on the Specific Plan site, and the determination of whether the predicted changes in groundwater and surface water conditions would significantly affect those habitats. The assessment is focused on habitats of sensitive species rather than individuals or populations, which are highly variable over time and space along the river corridor.

In order to address the potential impact both in Los Angeles County and downstream of the County line in Ventura County, groundwater modeling was completed, as described above. As previously indicated, increases in Alluvial aquifer groundwater elevations that may occur as a result of ASR injection are predicted to be as much as 1 foot in the western portion of the Valley. ASR pumping is expected to cause up to 0.6 feet of water level decline in the Alluvial aquifer, including along the riparian corridor lying along the Santa Clara River. This magnitude of fluctuation is less than the presently observed monthly or seasonal water level fluctuation in the Alluvial aquifer and indicates that riparian vegetation and habitats for sensitive species will not be adversely impacted by the ASR program (i.e., riparian vegetation thrives under present fluctuating conditions). Because such conditions would not appreciably change, riparian vegetation would continue to thrive under post-ASR conditions. The habitats of sensitive animal species that occur along the river under the presently fluctuating conditions also would not appreciably change and the species themselves would not be affected. This indicates that no appreciable increase or decrease in river flow levels in Los Angeles County would be expected as a result of the ASR program or the Newhall Ranch Specific Plan.

Regarding the downstream portion of the river corridor in Ventura County, the information above indicates that an overall increase in the amount of flow in the Santa Clara River occurs as a result of the Newhall Ranch Specific Plan (including ASR injection). Only during portions of drought years is it possible that pumping from the ASR wellfields to meet water supply demands would decrease river flows. However, the drought-year decrease in flow (1,050 AFY, which is equivalent to an average annual flow of 1.5 cfs) is short-lived and small compared with the average annual flow level 57,000 AFY that occurred from 1975 through 1999 (1,050 AF/57,000 AF = 0.018; a reduction in flow of 1,050 AF equals a reduction in average annual flow at the County line of approximately 1.8 percent). It is also small compared with the groundwater production from the downstream groundwater basins in Ventura County (192,200 AF, as reported for water year 1999 [United Water Conservation District, 2000]).

Based on this information, the expected change in groundwater levels and/or hydraulic conditions in the Santa Clara River caused by the proposed ASR program would not cause (1) scouring of the channel bed that would remove a significant amount of aquatic, wetland, and riparian habitats from the river channel; (2) substantial modification of the relative amounts of these different habitats in the river, essentially altering the nature and quality of the riverine environment; (3) direct removal of sensitive habitat; and/or (4) substantial effects to rare, endangered, or sensitive species. The distinct habitat types and sensitive species that occur in the river corridor would not be significantly impacted because the degree of groundwater and/or river flow fluctuations (both up and down) would not be of a substantial magnitude to cause adverse effects.

(6) Potential for Degradation of Water Quality in the Alluvial Aquifer, Saugus Formation or Santa Clara River

The suggestion has been made that the Saugus Groundwater Banking/ASR program could adversely impact water quality in the local aquifers in the Santa Clarita Valley and aquifers in Ventura County, as well as surface water flows in the Santa Clara River downstream of the proposed Specific Plan. Numerical objectives have been set by the RWQCB for various water quality parameters to protect local beneficial uses of groundwater and surface water, including human consumption and habitat uses (i.e., sensitive plants and animals) (LARWQCB Basin Plan 1994). Exceedence of these objectives as a result of ASR or the Specific Plan as whole would be considered a significant impact to such beneficial uses.

a) Chloride

Since circulation of the Draft Additional Analysis, the RWQCB has adopted a TMDL (Total Maximum Daily Load) to address the chloride impairment in the Upper Santa Clara River (October 28, 2002). Due to excessive chloride, the agricultural supply designated beneficial use is not supported. The Clean Water Act requires that a TMDL be established to restore the Santa Clara River and implement the established water quality objective for chloride. The Newhall Ranch Specific Plan is located within one of the impaired reaches, Reach 5, which is addressed by the TMDL.

The TMDL components include problem identification, development of numeric targets, source assessment, linkage analysis, allocations, critical conditions and seasonality, margin of safety and future growth. With respect to growth (Section 2.5.2 Draft TMDL):

> "the [chloride] concentration-based target accommodates future growth by allowing increased mass as long as it is accompanied by additional flow . . . . Regional Board staff

understands that an additional water reclamation plant [Newhall Ranch WRP] is planned to accommodate future growth in the Santa Clarita Valley..."

The TMDL also contains a detailed Implementation Plan. The following are the components of the Implementation Plan:

Task 1. Evaluate providing alternate water supplies by CSD for agricultural users of surface waters, evaluate necessary facilities, and report results.

Task 2. Development and calibration of a groundwater/surface water interaction model by County Sanitation Districts (CSD), in cooperation with the Regional Board, to determine the assimilative capacity of chloride, impact of changes in groundwater levels and concentrations, and to determine the impact of reclaimed water application in the watershed.

Task 3. Development and implementation of a chloride source identification/reduction, pollution prevention and public outreach plan by CSD to determine appropriate source reduction measures that can be taken to reduce chloride loading and to implement the most effective measures.

Task 4. Evaluate recent field studies performed to understand the linkage between chloride concentrations and their effect on avocado crop yields and endangered species, form a technical advisory committee, and calculate a revised water quality objective based on the information if appropriate.

Task 5. Development of a site specific objective (SSO) for chloride for sensitive agriculture after considering the results of Task 4 and the assimilative capacity of the watershed with respect to chloride from Task 1.

Task 6. Development and preparation of an anti-degradation analysis if the SSO from Task 5 is recommended.

Task 7. Preparation and consideration by the RWQCB of a Basin Plan amendment revised the chloride objective.

Task 8. Reconsideration of the chloride TMDL based upon the approval of the Basin Plan amendment in Task 7 by RWQCB, and revision of the NPDES permits for the WRP's.

Task 9. Analysis of all feasible implementation actions to meet revised chloride objective after Task 7.

Task 10. Planning, design and construction of microfiltration and reverse osmosis (RO) facilities as well as a 43-mile brine line and ocean outfall by CSD to meet final effluent permit limits for chloride. This is estimated to be complete 13 years from the effective date of the TMDL if necessary.

During the TMDL implementation period, the effluent concentration for the Valencia and Saugus WRPs cannot exceed maximum daily interim limits of 218 mg/L and 196 mg/L chloride, respectively, and average monthly interim limits of 200 mg/L and 187 mg/L, respectively. In addition, the EPA chronic chloride concentration for protection of aquatic life (230 mg/L) shall not be exceeded more than two times in a three year period. Furthermore, should the monthly average in-river concentration at Blue Cut exceed the water quality objective of 100 mg/L, measured as a rolling twelve month average, for three

months of any 12 months, then an alternative water supply shall be provided for agricultural surface water diversions.

> The Draft TMDL identifies source reduction programs as an effective method of meeting the TMDL requirements. Since WRP discharge is the largest contributor of chloride in the watershed, options for reducing the WRP contribution include alternative disinfection methods, reducing the urban waste load, and reducing the load in the source water. According to the Draft TMDL, "These remedies may be sufficient to eliminate 50 mg/L in non-drought and over 100 mg/L during drought conditions. If source reduction methods are effective, they may eliminate the necessity of WRP treatment to meet the numeric target for chloride."

Newhall Ranch Specific Plan Compliance with Draft Chloride TMDL

a) Newhall Ranch WRP

A new county sanitation district (NRCSD) is proposed to be formed to provide wastewater disposal services for the Newhall Ranch Specific Plan area, and to operate the Newhall Ranch WRP. In order for the Newhall Ranch WRP to safely discharge effluent to the river, a National Pollutant Discharge Elimination System (NPDES) permit must be obtained from RWQCB in accordance with the Federal Clean Water Act. The NPDES permit would set effluent discharge limits for the Newhall Ranch WRP in accordance with the water quality objectives contained in the Basin Plan and chloride TMDL. At a minimum, the Newhall Ranch WRP would have to meet the interim chloride limits as set forth in the Draft TMDL.

b) Newhall Ranch Reclaimed Water Use

In order to safely utilize reclaimed water for non-potable irrigation uses, the Newhall Ranch WRP must comply with Title 22, California Code of Regulations, Division 4, Chapter 3 Water Reclamation Requirements. The policy of the State Water Resources Control Board (SWRCB Resolution 77-1) directs the Regional Boards to encourage reclamation of wastewaters, and to promote water reclamation projects that preserve, restore or enhance in-stream beneficial uses and lessen the demand for higher quality fresh waters. Permitted uses of reclaimed water include irrigation of parks, schools and other landscape areas, agricultural irrigation, recreational impoundments, and to recharge ground water. In addition, California Water Code Section 13523.5 states: "A regional board may not deny issuance of water reclamation requirements to a project which violates only a salinity standard in the basin plan."

c) Newhall Ranch ASR Operations

As identified in the Draft Chloride TMDL, chloride concentrations in the Santa Clara River and any changes to the assimilative capacity of the river with respect to chloride are a concern in the region. As described in **Section 2.5.5** above the proposed ASR program would inject/bank SWP water supplies in the Saugus Formation during wet years, and extract/pump water during drought years. Chloride concentrations in SWP water at Castaic Lake are typically 60 mg/L. Concentrations can be as high as 105 mg/L or higher (144 mg/L is maximum recorded value) if there is an extended drought in northern California, which has occurred in the past. However, under the ASR program, injection would not occur during drought periods because SWP deliveries could be curtailed. Thus, the ASR wells will be used for extracting or pumping water. It is possible that there will be a slight increase in chloride concentrations near the ASR injection well compared with native Saugus Formation groundwater quality because the injected SWP may, at times, have higher chloride concentrations. However, this increase will not impair the quality of Saugus Formation groundwater, particularly because the concentrations of other constituents present in SWP water, including total dissolved solids (a measure of all salts), are lower than native Saugus Formation groundwater. As shown in **Table 2.5-43**, treated SWP water (one of the primary ASR injection water sources) has lower concentrations of most dissolved constituents than native Saugus Formation groundwater, Alluvial aquifer groundwater, and Santa Clara River water.

Table 2.5-43
Comparison of Selected Water Quality Parameters
(mg/L)

Constituent	Injection Water[a]	Saugus Aquifer Groundwater[b]	Alluvial Aquifer Groundwater[c]	Surface Water Quality Objective[d]	Groundwater Quality Objective[e]
Chloride	60	35	68	100	150
Sulfate	81	35	286	400	350
Total Dissolved Solids	325	619	764	1,000	1,000
PH	8.1	7.8	7.5	--	--
Nitrate (as Nitrogen)	2.0	3.3	2	5	--

[a] Castaic Lake Water Agency, 1999 Imported SWP Water Quality.
[b] Final EIR for the Newhall Ranch Specific Plan and Water Reclamation Plant, Appendix 4.11, CH2MHill, Table 3-10, p. 3-37.
[c] Average values for Alluvial aquifer wells E, E-9, C, B-6, and B-11 located west of I-5; sampled by NLF on 5/17/2000
[d] Surface water quality objective for Santa Clara River West Pier 99 to Blue Cut as set by the RWQCB.
[e] Groundwater Quality Objectives for Santa Clara-Castaic Valley area as set by the RWQCB.

A reduction in discharge to Ventura County (approximately 125 acre feet [2.1 cfs] in the driest month and 1,050 acre feet [1.5 cfs] in the driest year) is predicted with continued ASR pumping near the end of an

extended drought. This volume is considered insignificant, and is substantially less than the observed fluctuation in Santa Clara River flows on a year-to-year basis.

Because water delivered through the SWP system would be available for recharge in most years, the ASR program would show an overall positive impact on Santa Clara River water quality. Based on the observations from the modeling analyses, injecting 4,500 AFY of water into the Saugus Formation during 14 years out of every 19 or 20 years will result in improved water quality in the Saugus Formation, Alluvial aquifer, and Santa Clara River. Model simulations indicate that the Saugus Groundwater Banking/ASR program would result in an average increase of about 1,050 to 1,100 AFY in the amount of groundwater discharge to the Santa Clara River because the ASR program will bank more SWP water than it will pump. An increase in the discharge of Saugus Formation groundwater to the Alluvial aquifer and, hence, the River, as a result of the ASR program, would increase the assimilative capacity of the river because the increased rate of groundwater discharge would result in dilution of chloride concentrations in the River.

d) Newhall Ranch Non-Point Sources

Development of the Newhall Ranch Specific Plan will result in the conversion of agricultural fields and open grazing land to urban uses. The RWQCB draft chloride TMDL does not make any non-point load allocations for urban runoff in the Upper Santa Clara River watershed because "tributary, groundwater and other non-point sources contribute 2.8%" of the chloride load in the watershed. Therefore no significant adverse effects to water quality due to chlorides in urban runoff from the Newhall Ranch Specific Plan are expected.

e) Nitrogen Compounds

The RWQCB has determined that several reaches of the Upper Santa Clara River are impaired for ammonia and nitrate/nitrite (collectively referred to as nutrients). Due to the ammonia and nitrate/nitrite impairments, aquatic life and municipal drinking water supply designated beneficial uses are not supported. The Newhall Ranch Specific Plan is located within one of the impaired reaches, Reach 5.

The RWQCB has begun the process of preparing a draft nutrient TMDL in coordination with various interested stakeholders. A watershed model is being prepared to simulate the physical and chemical processes that affect river hydrology and water quality for the entire Santa Clara River watershed with input from various stakeholders. The model will be used to assess the sources of pollutant loads, link

those loads to numerical water quality targets for the impaired segments, and then assist in development of implementation plans for restoring the surface water quality in the impaired reaches.

Preliminary work from the nutrient TMDL modeling suggests that the majority of nutrient loading is from point sources, namely the existing upstream water reclamation plants. Non point sources contribute loadings to a far lesser extent.

f) Newhall Ranch Specific Plan Compliance with Draft Nutrient TMDL

Since a TMDL and implementation plan have not yet been developed by the stakeholder group or RWQCB staff, it is not possible to determine the exact point and non-point loading allocations that would apply to the Newhall Ranch Specific Plan. However, a draft TMDL and Implementation Plan for nutrients has been prepared by RWQCB for the Calleguas Creek watershed (August 30, 2002) and is used below for comparison purposes, since the impaired beneficial uses and loading sources are substantially the same or similar to those on the Santa Clara River.

The Draft Calleguas Nutrient TMDL contains the following components: problem identification, development of numeric targets, source assessment, linkage analysis, allocations, critical conditions and seasonality, margin of safety and future growth. The ammonia numeric targets are based on the criteria developed by the EPA in the "1999 Update of Ambient Water Quality Criteria for Ammonia" (December 1999) and adopted by RWQCB in 2002. The RWQCB has indicated that these targets will be the same numeric targets for the Santa Clara River and are based on pH and temperature. The nitrate and nitrite targets were set at 10mg/L and 1mg/L, respectively. Future population growth is addressed by acknowledging that impairments are based on instream nitrogen concentrations, and increased loads will not add to the impairment as long as they are contained in discharges with sufficient flow and as long as nitrogen compounds do not accumulate in the watershed. As a result, population growth is not expected to exacerbate the impairment.

g) Newhall Ranch WRP

A new county sanitation district (NRCSD) is proposed to be formed to provide wastewater disposal services for the Newhall Ranch Specific Plan area and operate the Newhall Ranch WRP. In order for the Newhall Ranch WRP to safely discharge effluent to the river, a National Pollutant Discharge Elimination System (NPDES) permit must be obtained from RWQCB in accordance with the Federal Clean Water Act. The NPDES permit would set effluent discharge limits for the Newhall Ranch WRP in accordance with the water quality objectives contained in the Basin Plan and nutrient TMDL. For reference purposes, the

nitrate and nitrite effluent concentration limits for the Calleguas Creek WRPs were established at 9mg/L and 0.9mg/L respectively; ammonia effluent concentration limits ranged between 1.35 – 3.4mg/L. Compliance with the NPDES effluent limits issued by RWQCB would not result in any significant adverse affects to water quality.

h) Newhall Ranch Reclaimed Water Use

In order to safely utilize reclaimed water for non-potable irrigation uses, the Newhall Ranch WRP must comply with Title 22, California Code of Regulations, Division 4, Chapter 3 Water Reclamation Requirements. The Newhall Ranch WRP would have to obtain a Water Reclamation Requirement (WRR) from the RWQCB prior to use of reclaimed water. The policy of the State Water Resources Control Board (SWRCB Resolution 77-1) directs the Regional Boards to encourage reclamation of wastewaters, and to promote water reclamation projects that preserve, restore or enhance in-stream beneficial uses and lessen the demand for higher quality fresh waters. Permitted uses of reclaimed water include irrigation of parks, schools and other landscape areas, agricultural irrigation, recreational impoundments, and to recharge ground water.

The RWQCB has issued a WRR (Order No. 87-48) to CSD for the use of reclaimed water from the Valencia WRP that did not include any limits for nutrients. Typically, higher levels of nutrients in irrigation water are desired because it promotes plant growth while at the same time reducing the need to apply fertilizers, either mechanically or through injection into the irrigation system. Preliminary modeling results indicate that point sources make up the vast majority of nutrient loading in the Upper Santa Clara. Non-point sources are a small share of the overall nutrient load, and applied irrigation water is an even smaller share of non-point sources. Therefore, reclaimed water use will not cause any significant adverse impacts to water quality from nutrients.

i) Newhall Ranch ASR Operations

As described in **Section 2.5-5**, the proposed ASR program would inject/bank water delivered through the State Water Project into the Saugus Formation during wet years, and extract/pump water during drought years. Nitrate concentrations in SWP water at Castaic Lake are typically 2 mg/L or less. As shown in **Table 2.5-43**, treated SWP water (one of the primary ASR injection water sources) has lower concentrations of most dissolved constituents than native Saugus Formation groundwater, Alluvial aquifer groundwater, and Santa Clara River water.

A reduction in discharge to Ventura County (approximately 125 acre feet [2.1 cfs] in the driest month and 1,050 acre feet [1.5 cfs] in the driest year) is predicted with continued ASR pumping under buildout near the end of an extended drought. This volume is considered insignificant, and is substantially less than the observed fluctuation in Santa Clara River flows on a year-to-year basis.

Because water delivered through the SWP system would be available for recharge in most years, the ASR program would show an overall positive impact on Santa Clara River water quality. Based on the observations from the modeling analyses, injecting 4,500 AF/yr of water into the Saugus Formation during 14 years out of every 19 or 20 years will result in improved water quality in the Saugus Formation, Alluvial aquifer, and Santa Clara River. Model simulations indicate that the Saugus Groundwater Banking/ASR program would result in an average increase of about 1,050 to 1,100 AFY in the amount of groundwater discharge to the Santa Clara River because the ASR program will bank more SWP water than it will pump. An increase in the discharge of Saugus Formation groundwater to the Alluvial aquifer and, hence, the River, as a result of the ASR program, would increase the assimilative capacity of the river because the increased rate of groundwater discharge would result in dilution of nitrate concentrations in the River.

j) Newhall Ranch Non-Point Sources

Development of the Newhall Ranch Specific Plan will result in the conversion of agricultural fields and open grazing land to urban uses. Using the Draft Calleguas Nutrient TMDL as a comparison, no non-point load allocations were made by RWQCB for urban runoff in that watershed. Based upon preliminary modeling results of the linkage analysis from the Upper Santa Clara River nutrient TMDL, only a small portion of the watershed is urbanized and urban development contributes a comparatively small contribution to nutrient concentrations compared to agriculture (the only non-point source for which load allocations are proposed in Calleguas). No loadings due to urban non-point sources are assumed for the Santa Clara River TMDL and, therefore, the Newhall Ranch Specific Plan would not be subject to TMDL load allocations.

It is important to note, however, that although potentially not subject to TMDL load allocations for nutrients, nutrients are a component of urban runoff. All new development (non-point sources) in Newhall Ranch would nevertheless be guided by Section 402 of the Clean Water Act, as amended, which includes the NPDES program. The law requires NPDES permits for storm water discharges from storm

drain systems[62] to waters of the United States. Section 402(p)(3)(B) requires that permits for storm drain systems "(i) may be issued on a system- or jurisdiction-wide basis; (ii) shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and (iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants." The U.S. EPA is responsible for implementing the NPDES program at the federal level.[63] The SWQCB is responsible for implementing the federal NPDES requirements in California. In 1992, the SWQCB issued two statewide NPDES General Permits: one for stormwater from industrial sites (NPDES No. CAS000001) and the other for storm water from construction sites (CAS000002). Industrial and construction activities with a disturbed area of 5 acres or more are required to obtain individual NPDES permits for stormwater discharges, or be covered by the above statewide General Permits.

A NPDES Municipal Permit No. CAS614001 was issued to Los Angeles County on July 31, 1996, and expired on July 30, 2001, but is still active until a new permit is adopted by RWQCBLAR. (This permit is included in the Newhall Ranch Final EIR Appendix to Responses to Comments.) Under the existing permit, Los Angeles County is divided into 6 watersheds, including the Santa Clara River watershed. The existing NPDES Municipal Permit No. CAS614001 incorporates 12 of the 13 baseline Best Management Practices (BMPs), which have been approved by the RWQCB. Several additional water quality permits and plans are required (e.g., Municipal Permit No. CAS614001, a Countywide Storm Water Management Plan (CSWMP), a Watershed Management Area Plan (WMAP)).

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62 Storm drain systems are described as Municipal Separate Storm Sewer Systems (MS4s) and include streets, gutters, conduits, natural or artificial drains, channels and water courses or other facilities that are owned, operated, maintained or controlled by any Permittee (cities and counties) and used for the purpose of collecting, storing, transporting or disposing of storm water.

63 On November 16, 1990, pursuant to Section 402(p) of the Clean Water Act, the EPA promulgated federal regulations (40 CFR Part 122.26) establishing requirements for storm water discharges under the NPDES program. The regulations recognize that certain categories of non-storm water discharges may not need to be prohibited if they have been determined not to be significant sources of pollutants.

Applicants for development projects have two major responsibilities under the NPDES Municipal Permit No. CAS614001. The first is to submit and then implement a Standard Urban Storm Water Mitigation Plan ("SUSMP") containing design features and BMPs appropriate and applicable to the project.[64] The purpose of the SUSMP is to reduce post-construction pollutants in storm water discharges. Prior to issuance of any grading or building permit, the County must approve the SUSMP. The Los Angeles County Municipal Permit, at pages 34-35, contains a discussion of the requirements for SUSMPs.

The second responsibility is to prepare a Storm Water Pollution Prevention Plan (SWPPP) for all construction projects with disturbed areas of 2 to 5 acres. Alternatively, the applicant may conform to the State Construction Activity Storm Water Permit for projects greater than 5 acres. The applicant must ensure that a SWPPP is approved, or file a Notice of Intent to comply with the State Permit prior to issuance of a grading permit.

Specific mitigation measures have been incorporated into the SUSMPs and the SWPPPs for development projects under NPDES Municipal Permit No. CAS614001. As NPDES requirements are updated over the coming years, the specific requirements would become part of the SUSMPs and SWPPPs prepared for individual subdivisions.

The Specific Plan contains a conceptual NPDES Water Quality Plan. This plan is discussed in the Newhall Ranch Final EIR, Section 4.2, page 4.2-31. In addition, the Newhall Ranch Final EIR includes the *Drainage Report for Newhall Ranch,* **Appendix 4.2.** Until actual project design occurs, specific BMPs that would be employed cannot be determined. *See,* Final EIR, pages 4.2-31 to 4.2-33, for examples of "source control" and "treatment control" BMPs that are relevant to the Specific Plan. The Final EIR, Section 4.2, includes mitigation measures that address the NPDES regulations. Given the substantial amount of regulation in place and the fact that the Specific Plan and WRP must, like all other development, meet the standards resulting from the regulation, the Final EIR concludes that no significant adverse water quality impacts would occur. Based on the new regulations relating to SUSMP requirements, County staff

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64 The RWQCB, Los Angeles Region, approved the SUSMP that requires new construction and development projects to implement BMPs on March 8, 2000. The SUSMP requires that new developments and re-development projects employ a variety of general and land use specification measures to reduce the post-project discharge of pollutants from stormwater conveyance systems to the "maximum extent practicable." In May 2000, the County of Los Angeles finalized its "Manual for the Standard Urban Storm Water Mitigation Plan," which details the requirements of the SUSMP. Projects that fall into any of the seven SUSMP development categories (including home subdivisions with 100 or more housing units) are required to incorporate appropriate SUSMP requirements into project plans as part of the development plan approval process for building and grading permits.

The County's Manual for the SUSMP is incorporated by this reference and is available for public review by contacting either the Los Angeles County Department of Regional Planning (Lee Stark) or Impact Sciences, Inc. (Tom Worthington).

recommends that the Newhall Ranch Final EIR mitigation measures be revised to add the following new measure:

4.2-8 The applicant for any subdivision map permitting construction shall comply with all appropriate requirements of the County of Los Angeles Standard Urban Stormwater Mitigation Plan ("SUSMP") requirements or demonstrate equivalency to these requirements.

k) Perchlorate

Another concern that has been raised is whether the Specific Plan (including the Saugus Groundwater Banking/ASR program) would adversely impact the perchlorate identified in the Saugus Formation on the east side of the basin near Saugus wells 1 and 2 (owned by the Santa Clarita Water Division of CLWA). This issue was investigated by using the groundwater flow model. On the basis of the model simulations discussed previously, the model predicts that the Specific Plan (including the Saugus Groundwater Banking/ASR program) would not cause spreading of perchlorate in the Santa Clarita Valley under the purveyor/CLWA groundwater pumping program described in the UWMP. This finding is based, in part, on the fact that the ASR wells are located several miles to the west and the modeling analyses indicate that groundwater gradients in the vicinity of the perchlorate are controlled primarily by local groundwater conditions and pumping, and are not affected by the ASR well pumping. The finding is also based on the fact that the suspected source for the perchlorate contamination has been identified (the former Whittaker-Bermite facility) and that the facility is no longer in operation and, therefore, the activities that caused the perchlorate contamination are not continuing. These factual determinations support the conclusion that, through dilution, perchlorate concentration levels away from the source would be expected to be significantly less. The testing performed by the Santa Clarita Valley water purveyors shows that dilution has had a beneficial effect on perchlorate concentrations.

Since preparation of the Newhall Ranch Draft Additional Analysis and Final Additional Analysis, studies of the nature and extent of the perchlorate in the Alluvial and Saugus aquifer have been conducted and the local purveyors have conducted routine sampling of existing wells. Studies are being conducted by the Santa Clarita, LLC (former owners of the Whittaker-Bermite site), the state Department of Toxic Substances Control, and the U.S. Army Corps of Engineers. While these studies are still in their initial stages, the results of the studies conducted thus far have not shown that perchlorate has impacted more than the original four Saugus water supply wells. Concentrations of perchlorate have been detected in alluvial monitoring wells near the Whittaker-Bermite site boundary, but it has not been shown that these detections have the potential to impact Alluvial or Saugus water supply wells. The problem is being studied and monitored and plans are being developed by the local water purveyors and the U.S Army Corps of Engineers to determine the best way to control movement of the perchlorate. The local water

supply agencies also have been formulating strategies that involve containment and treatment that will restore Saugus groundwater capacity at the impacted wells.

Although the Specific Plan (including the Saugus Groundwater Banking/ASR program) would not impact the perchlorate detected in specified wells in the Saugus aquifer, treatment options for the removal of perchlorate are also available and proven to be feasible. The treatment technology is discussed in detail in **Subsection 2.5.4.2** of this report. However, by way of example, perchlorate treatment has occurred successfully through the use of the patented "Ion Separation/Ion Separation Plus" (ISEP/ISEP+) process (sometimes referred to as "ion exchange"), a process that removes perchlorate with very low or zero brine (waste) levels. Calgon Carbon Corporation has successfully applied the ISEP/ISEP+ process at over 160 locations worldwide, including several sites in California. ISEP/ISEP+ has been used to successfully remediate a site at NASA's Jet Propulsion Laboratory in Pasadena, and is being used to remediate a site operated by Aerojet in San Gabriel and a site in La Puente, California (La Puente Valley County Water District). Calgon also operates 10 ISEP/ISEP+ drinking water plants worldwide, including two in California. The ISEP/ISEP+ process is a DHS-accepted technology for perchlorate treatment.[65] As indicated by DHS in its letter to Calgon Carbon Corporation:[66]

> "[Y]our ion exchange technology has been reviewed and accepted by the Department's Surface Water Treatment Rule Committee.... [I]t is the opinion of the [C]ommittee that your technology has demonstrated its ability to remove perchlorate from source waters."

As indicated above, the ISEP/ISEP+ process produces waste (also referred to as "brine") as a by-product. This waste will require either further treatment or disposal. While the design of the ultimate treatment process for the eastern portion of the Saugus aquifer affected by perchlorate has not yet been finalized, options for the disposal and/or treatment of the waste include: (1) a pipe (brine line) to carry the waste to an receiving location acceptable to DHS (e.g., a treatment facility); (2) deep injection into an abandoned or active oil well; and (3) installation of a catalytic conversion unit (successfully tested at the Jet Propulsion Laboratory) that destroys the perchlorate, leaving harmless by-products, such as chlorides. It also reduces the total volume of brine to less than 10 percent. For example, a typical 2,000 gallon per minute (gpm) well using the Calgon Ion Exchange treatment system produces about 1 percent brine. The remaining 20 gpm would again be treated with the catalytic conversion unit, which further reduces the volume of brine to less than 10 percent, or 2 gpm, using the above example. The remaining brine could be stored on site and disposed elsewhere, discharged to the sanitary sewer or possibly returned to the beginning of the ion exchange unit resulting in no discharge from the treatment system.

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65 Calgon Carbon Corporation, November 28, 2000.

66 Letter from California Department of Health Services to Calgon Carbon Corporation, dated December 29, 1999.

Appendix 2.5 to the original Draft Additional Analysis (2001) contains a copy of the December 29, 1999 letter from DHS, as well as background information regarding the use of the ISEP/ISEP+ process as a feasible treatment method for the removal of perchlorate. The Santa Clarita Valley water purveyors are moving forward with implementation of perchlorate treatment options.

l) Perchlorate-Ecological Effects

Perchlorate salts are soluble in water and, like most contaminants, perchlorate is mobile and can persist for many decades under typical groundwater conditions. The mobility and persistence of perchlorate can create direct and indirect environmental effects on mammal and amphibian functioning and plants at high perchlorate concentration levels; however, a search of available literature has revealed very little data on the ecological effects of perchlorate. A good source of information summarizing the available data is found in the U.S. Environmental Protection Agency (EPA) website (Perchlorate) at http://www.epa.gov/ogwdw000/ccl/perchlor/perchlo.html. The following is a summary of the known available information. However, because the information is limited, and because the Specific Plan does not impact or result in a significant effect on the perchlorate detected in certain specified wells in the Saugus Formation, this analysis finds, that after a thorough literature investigation and review of known available information, the ecological effects of perchlorate are too speculative for any further evaluation, consistent with CEQA Guidelines §15145.

Based on information provided by EPA, minimal information is available on the ecological effects of perchlorate or any of its other salts. The EPA found that there is essentially no reliable data in existence that assesses perchlorate's effects on various soil, sediment or aquatic receptors, including aquatic vertebrates, aquatic or sediment invertebrates, bacteria or plants. The EPA further noted that approaches for the evaluation of perchlorate effects on ecological receptors is complicated by the lack of data with respect to perchlorate transport and transformation processes. This includes data on the effects of soil chemistry, movement characteristics and various media, absorption to soils of high and low cation and anion exchange capacity, and the effect of ammonia. In conjunction with the EPA, the U.S. Air Force has begun to assess the transport and transformation of perchlorate in the environment. At this stage, however, the work is based primarily on literature review, with recommendations for additional work in the future. The intent of the additional work is to help develop models to predict and describe the transport and transformation of perchlorate in groundwater basins. For a detailed description of the current status of this work effort, please review to the EPA website (Perchlorate), cited above.

m) Chlorine and Disinfection Byproducts

Chlorine and disinfection byproducts (DBPs) will be present in the recharge water as a result of the disinfection process used by local water purveyors to treat water for drinking purposes. DBPs are formed when disinfectants used in water treatment react with natural organic matter present in the source water. Similarly, introduction of source water containing disinfectants into the aquifer during ASR will react with naturally occurring organic carbon to produce DBPs. DBPs include trihalomethanes (THMs), and haloacetic acids (HAAs). The maximum contaminant levels (MCLs) for THMs and HAAs are 80 mg/L and 60 mg/L, respectively. Valencia Water Company, the purveyor who would provide the injection source water for the Newhall Ranch Specific Plan, produces water that does not exceed these limits.

Chlorine and DBPs are not naturally occurring in the Saugus Formation and so there could be a concern that these compounds, present in the recharge water, would degrade the native groundwater quality. Likewise, there could be a concern that recovered water could have unacceptable levels of DBPs. Studies conducted for a number of ASR projects in the United States and abroad have shown that chlorine and DBPs do not travel beyond the zone of injection around the ASR well and are naturally degraded within a relatively short time (during a few weeks of storage). Recovered water typically does not contain chlorine and has substantially reduced concentrations of DBPs. While still the subject of ongoing research, there are several potential mechanisms that contribute to the observed reductions in DBP concentrations subsequent to ASR storage, including the following (Pyne, 1995):

- Mixing and dilution between the recharge and surrounding groundwater;
- Biological mechanisms whereby some classes of DBPs will be removed more favorably in aerobic conditions while others tend to be removed only after the onset of anoxic conditions in the aquifer; and
- A reduction in DBP precursors and formation potential during ASR storage as evidenced by declining total organic carbon (TOC) concentrations.

Because chlorine and DBPs readily degrade (within a few weeks of storage) and will not travel beyond the injection zone around the ASR wells, they are not expected to impair the quality of native groundwater. Because the native groundwater is naturally low in TOC, increases in DBP concentrations are not expected when the water is recovered and subsequently re-disinfected. Consequently, no related significant water quality impacts would occur.

n) Conclusion

Potential impacts associated with the Specific Plan and the Saugus Groundwater Banking/ASR program (reductions in flows to downstream water users, riparian vegetation and sensitive animal species and water quality) are less than significant. In fact, the banking of 4,500 AFY of SWP water, or other water sources, during a non-drought year will increase groundwater discharge from the Saugus formation to the Alluvial aquifer, and from the Alluvial aquifer to the Santa Clara River. The results of the technical analysis described in this report indicate that there would be a net positive benefit from the ASR program. As stated, the ASR program would increase the amount of water discharging to the Santa Clara River, maintain stable groundwater levels in the Saugus Formation, and potentially improve the assimilative capacity of the Santa Clara River with respect to chloride as a result of increased groundwater discharges. This improvement in conditions along the Santa Clara River should also act to improve conditions for riparian vegetation and sensitive species inhabiting the river corridor.

(8) The Potential for Liquefaction Impacts Resulting from the Saugus Groundwater Banking/ASR Program

Liquefaction is the process in which water-saturated, usually loose-to-moderately dense, fine-to-medium sands temporarily lose strength due to strong ground motion and behave as a viscous fluid. The loose sand grains rearrange into a more stable orientation, which transfers the overburden pressure from the grain-to-grain contacts to the fluid. Because liquids cannot support shear stresses, the sediment/water mixture loses strength and may flow like a viscous fluid if a gradient is present. As water escapes from the collapsing void space between the grains, the sediment settles and water escapes to the surface. When a buried sand zone is liquefied, the overburden pressure forces the excess water to the surface, commonly causing sand boils and sand volcanoes. If water were to be injected into such soils, the potential for liquefaction can be increased.

According to R.T. Frankian & Associates, the Santa Clara River area sands and adjacent sandy areas are generally dense and have a low potential for liquefaction, even when assuming a conservative value for the bedrock acceleration of 0.6g. Shallow liquefaction features occurred on Newhall Ranch during the Northridge Earthquake, primarily in recent shallow sand deposits in and around the Santa Clara River area. These features are the result of shallow liquefaction that produced relatively small sand boils. Local liquefaction features, such as sand boils/blows were observed in Potrero Canyon by Allan E. Seward Engineering Geology, Inc., and by the U.S. Geological Survey following the Northridge

Earthquake.[67] More importantly, water to be injected as part of the Saugus Groundwater Banking/ASR program would be injected into the deeper Saugus Formation, not the sands and adjacent sandy areas associated with the Santa Clara River. The Saugus Formation consists of unconsolidated to semi-consolidated sandstone and conglomerate materials. Because the proposed Saugus Groundwater Banking/ASR program would not result in an significant increase in water within the recent shallow sand deposits in and around the Santa Clara River area, no significant liquefaction impacts would occur.

(i) Downstream Effects of Castaic Creek Flood Flow Use

Two issues have been raised regarding potential downstream impacts associated with the use of the Castaic Creek flood flows as a supplemental water supply for Newhall Ranch. For the purposes of this analysis, use of Castaic Creek flood flows would result in a significant environmental impact if such use would reduce water flows to downstream water users when compared with existing conditions.

First, it has been suggested that "diverting" the flood flows away from Castaic Creek and to Newhall Ranch would result in a decrease in the amount of water that flows downstream in the creek and eventually in the Santa Clara River. This suggestion also means that less water would be available to beneficial downstream water users, including sensitive riparian habitats and sensitive animal species. Second, it has been suggested that the injection of Castaic Creek flood flows into the Saugus aquifer would result in a decline in the water quality of local aquifers and the Santa Clara River. However, available information refutes these suggestions.

Regarding the potential to reduce the amount of water available for downstream users, DWR records delineating natural inflow appropriations to Castaic Lake do not show a past or current tangible benefit to the downstream water users. Records for the years of 1977 through 2000 show that in excess of 300,000 AF of stored flood flows have reverted to state ownership and have, in fact, not been released into Castaic Creek downstream of Castaic Lake. During the same time period, based on historical records, stored Castaic Creek flood flows have not been released in most years to Castaic Creek and the Santa Clara River and, therefore, the use of the flood flows would not have any significant impact on existing conditions in Castaic Creek or the Santa Clara River (it is expected that during extreme runoff conditions, DWR could release natural flows (local water) to Castaic Creek because of limited storage space in Castaic Lake Reservoir). Because, in most years, the Castaic Creek flood flows are not released to Castaic Creek and the Santa Clara River under existing conditions, the water would not be "diverted" away from the Creek

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67 Brian Swanson, Allan E. Seward Engineering Geology, Inc., correspondence to Impact Sciences, Inc., 13 April 1995.

or the river and, therefore, no significant impacts could occur through the use of the flows on Newhall Ranch.

In fact, beneficial impacts could occur if the flows are injected into the Saugus aquifer as part of the Saugus Groundwater Banking/ASR program and later used on Newhall Ranch during dry years. Under this scenario, the flows would actually remain entirely in the watershed and available for use by beneficial water users rather than being used by the State both within and outside the watershed. This beneficial impact would be compounded by virtue of the increase in groundwater discharge that results from the ASR program (see subsection above entitled, "Effects of Groundwater Pumping Associated with the Saugus ASR Program"). If flood flows are a source of the water to be stored and later withdrawn during dry years, then injection of the flood flows would directly benefit all downstream water users.

Regarding the potential for injected flood flows to result in a decline in the water quality of local aquifers and the Santa Clara River, when the flood flows are collected behind Castaic Dam, they are mixed with imported SWP water supplies. Prior to injection, the flood flows (and any other water source that might be injected) would be treated to Regional Water Quality Control Board Basin Plan standards in the water treatment facilities of CLWA. Because this water would then be a higher quality when compared to the native waters, no decline in water quality would occur. In fact, the quality of local native waters would be enhanced by the injection of treated flood flows.

(j) Land Surface Elevation

Under certain geologic conditions, groundwater withdrawals can result in subsidence of the land surface. Specifically, subsidence can occur when extensive groundwater withdrawals are made from aquifer systems that consist of thick sequences of unconsolidated or poorly consolidated sediments containing a large percentage of highly compressible clays.

Any change in the elevation of the ground surface (subsidence or mounding) as a result of Specific Plan uses of the Saugus aquifer will be considered a significant impact. The Saugus Aquifer is composed of consolidated sediments; therefore, land subsidence is not anticipated to result from ASR pumping from this aquifer. Subsidence is also not anticipated to occur as a result of conditions in the Alluvial Aquifer, primarily because the potential ASR-induced water-level declines are not considered significant. This conclusion is further supported by the following:

- Additional groundwater is not proposed to be pumped from the Alluvial Aquifer for use by the Specific Plan;

- The Alluvial Aquifer is not characterized by thick layers of clay that are likely to compress significantly; and
- The Alluvial Aquifer is currently extensively developed, and the resulting fluctuations in groundwater levels have not resulted in known occurrences of subsidence.

As indicated in the *Newhall Ranch Final EIR* and confirmed by the analysis presented above, because the ASR program would not lead to a permanent reduction in groundwater levels, no changes in land surface elevation would occur due to implementation of the Specific Plan or Newhall Ranch WRP. Consequently, such impacts would be less than significant.

(k) Impacts of the Newhall/SWP Water and the Nickel Water on Delivery and Treatment Capacity

The project applicant has entered into an agreements to reserve and ultimately purchase 7,648 AFY of additional SWP Table A water entitlement and 1,607 AFY of Nickel Water, which would be delivered through SWP facilities to CLWA and be available to serve the Specific Plan. The same SWP reliability parameters discussed in **Subsection 2.5.4.4(h)**, entitled "**SWP Reliability**" above for CLWA SWP Table A water would apply to the Newhall/SWP water; however, the Nickel Water is not affected by those reliability parameters (as indicated above, the Nickel Water is 100 percent reliable). The following information presents a general overview of the potential environmental impacts on water delivery and treatment capacity through the use of the Newhall/SWP water and the Nickel Water.

(1) Water Delivery/Capacity – Newhall/SWP Water

As part of a water purchase to be approved by DWR, CLWA would acquire associated transportation and capacity rights to SWP facilities necessary to deliver this water to CLWA, including capacity in the Aqueduct and pumping plants. Under existing conditions, Article 12 of CLWA's long-term contract with DWR provides for a maximum monthly delivery of 11 percent (or in some cases 8.33 percent) of the annual entitlement and an instantaneous maximum delivery rate. Therefore, CLWA can deliver under their existing contract with DWR 9,038 AF per month. At the present time, CLWA's peak month to date has been 3,754 AF, which occurred in August 1999.

CLWA capacity to deliver water will increase if additional SWP entitlement, such as the Newhall/SWP water, is acquired. In addition, the CLWA contract has provisions for storage of up to 4,684 AF behind the Castaic Dam that could be used if needed in any given year. Based on CLWA's demand projections and seasonal demand pattern, additional monthly peaking capacity is not needed to accommodate additional SWP entitlement. Any future agreements transferring SWP entitlement to CLWA would also

set forth specific facilities along the Aqueduct where CLWA would be entitled to receive water. CLWA's contract with DWR would also be amended to approve the transfer of entitlement, and to establish the additional capacity, if any, required by DWR as a result of the transfer in SWP entitlement. However, based on prior transfers of SWP entitlement to CLWA, additional capacity has not been required by DWR. Therefore, it is not likely that DWR would require additional capacity for the Newhall/SWP entitlement.

Finally, in a broader context, there is annually unused capacity in the California Aqueduct. In addition, there is increased ability through the Monterey Agreement for CLWA to utilize storage facilities outside of its service area. Under the Monterey Agreement, CLWA may also now exercise greater control over the operations of Castaic Lake. These factors enhance CLWA's transportation and storage capacity for the transfer of any additional SWP entitlement.

(2) Water Delivery/Capacity – Nickel Water

As stated above, the project applicant has acquired 1,607 AFY of water from Nickel Water Family LLC. Prior to acquiring the Nickel Water, a report was prepared by Provost & Pritchard Engineering Group, Inc. (see **Appendix 2.5**) to evaluate the ability of the existing California Aqueduct and associated facilities to convey the 1,607 AFY from areas in Kern County (Aqueduct Reach 10A) to CLWA at Castaic Lake (Aqueduct Reach 30) through the year 2035. As stated in the report, sufficient capacity exists in the California Aqueduct to convey an additional 1,607 AFY of water from Kern County (Reach 10A) to Castaic Lake (Reach 30). For further information regarding this capacity issue, please refer to **Appendix 2.5.**

(3) Water Treatment – Newhall/SWP Water and Nickel Water

Imported SWP water is treated at two water treatment plants owned and operated by CLWA, including the Earl Schmidt Filtration Plant, with a current water capacity of 28 million gallons per day ("mgd"), and the Rio Vista Water Treatment Plant, with a water capacity of 30 mgd. The two plants have a current capacity to treat a total of 58 mgd. These plants were designed to accommodate expansion as required. CLWA is currently in the process of expanding the Earl Schmidt plant to increase the plant's treatment capacity from 28 mgd to a total of 50 mgd. The expanded Schmidt plant is scheduled to be available for use by late-2003. As part of CLWA's Capital Improvement Plan ("CIP", herein incorporated by reference), the treatment plants are planned to treat approximately 180 mgd at Valley buildout. CLWA treats the SWP water at its two water filtration plants and then distributes the water to the local retail water purveyors in the Santa Clarita Valley. From CLWA's two existing plants, the treated SWP water is

delivered by gravity to the retail water purveyors through CLWA's distribution network of pipelines and turnouts.

Based on CLWA's capabilities, there are no expected significant impacts associated with the delivery and treatment of the Newhall/SWP water or the Nickel Water.

2.5.7 MITIGATION MEASURES

2.5.7.1 Preface

The trial court directed the County to "shall consider this analysis and adopt such mitigation measures, alternatives, and/or additional or revised findings as may be necessary to comply with CEQA and this writ." In compliance with the court's writ and decision, this section presents the measures proposed by the County to mitigate potential significant water-related impacts to less than significant levels.

This section presents the water-related mitigation measures previously adopted by the County for the Newhall Ranch Specific Plan (termed "Existing EIR Mitigation Measures"). Also presented are proposed revisions to the previously adopted mitigation measures as well as new additional mitigation measures proposed in response to the analysis presented above. For consistency, the numbering used for each mitigation measure is the same as the numbering used in the partially certified *Newhall Ranch Specific Plan and Water Reclamation Plant Final EIR.*

2.5.7.2 Existing EIR Specific Plan Mitigation Measures

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.

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

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

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

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.

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.

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).

2.5.7.3 Revised EIR Specific Plan Mitigation Measures

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, ~~Prior to recordation of any final subdivision map that allows construction,~~ 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 ~~subdivision~~ to obtain written confirmation from the retail water agency ~~that a~~ identifying the source(s) of water ~~source is~~ available to ~~supply~~ serve the map ~~subdivision~~ concurrent with need. If the applicant of such map ~~the subdivision~~ cannot obtain confirmation that a water source(s) is available for buildout of the ~~subdivision~~ map, the ~~subdivision~~ map shall be phased with the timing of an available water source(s), consistent with the County's DMS requirements.

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 ~~Company~~ Division of CLWA and the Valencia Water Company, prepare an annual water report that will discuss the status of groundwater ~~levels~~ 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 ~~does~~ not prepare such a report, the applicant at ~~his~~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 ~~may~~will ~~use~~ consider the report as part of ~~the~~ 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.)

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.

~~4.11-10 In conjunction with the submittal of applications for and prior to approval of tentative tract and parcel maps which permit construction, a letter from the retail water provider will be submitted to the County identifying the source(s) of supply of water for the land uses within that tentative tract or parcel map. The source(s) of water identified shall not result in the net use of groundwater over that which is planned for the Santa Clarita water basin, which is identified as the "annual safe perennial yield" of the Alluvial Aquifer and the "annual recharge rate" of the Saugus Aquifer in the Final EIR for the Newhall Ranch Specific Plan or subsequent environmental documentation.~~ (See, Mitigation Measure 4.11-14, below.)

2.5.7.4 Additional Specific Plan Mitigation Measures

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.

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.

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.")

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.

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.

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.

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.

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.

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.[68] 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 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."

4.11-20 The Specific Plan applicant, or its successors, shall assign its acquired Nickel Water rights to the Valencia Water Company, and the Valencia Water Company 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.

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68 *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].

2.5.8 UNAVOIDABLE SIGNIFICANT IMPACTS

This analysis indicates that adequate water supplies are available for build-out of the Newhall Ranch Specific Plan and that the proposed Saugus Groundwater Banking/ASR program is feasible. In addition, the Specific Plan can be provided with water supplies without creating significant water-related impacts onsite, in the Santa Clarita Valley and downstream in Ventura County. As a result of the above information and the mitigation measures identified above, the magnitude of all water-related impacts are considered to be less than significant. Based on these findings and the information presented above, the Newhall Ranch Specific Plan is also consistent with the County's General Plan DMS requirements.

Because the Specific Plan applicant has secured water supplies that more than meet the water demands of the Specific Plan, implementation of the Specific Plan will not contribute to a decline in regional water supplies; therefore, implementation of the Specific Plan will not result in a significant cumulative water availability impact. In addition, cumulative water supplies exceed cumulative water demand; therefore, cumulative development (including the proposed Newhall Ranch Specific Plan) would not result in unavoidable significant cumulative impacts on Santa Clarita Valley water resources. As a result, cumulative mitigation measures are not required. However, to ensure sufficient long-term water supplies for all cumulative development (including the proposed Specific Plan), the County's General Plan Development Monitoring System (DMS) requires tentative map applications to show that water supplies are adequate to meet demand.

2.6 SPINEFLOWER AND OTHER SENSITIVE PLANT SPECIES

2.6.1 INTRODUCTION

This section summarizes the pertinent history and background relating to an endangered plant called the San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*; "spineflower") and other sensitive plant species on Newhall Ranch, including surveys conducted by the applicant and the California Department of Fish and Game (CDFG). Based on this information, the County determined that the Newhall Ranch Draft Additional Analysis should be revised and recirculated with respect to the spineflower and other issues.

In addition, this section identifies the applicable significance criteria that is used in assessing project impacts on the spineflower and other sensitive plant species, consistent with CEQA. The section includes an analysis of direct, indirect and cumulative impacts on the spineflower and other sensitive plant species due to development of the Newhall Ranch Specific Plan and WRP. While such an analysis is typically completed at the time subdivision maps allowing construction are proposed, this document addresses potential impacts to spineflower and other sensitive plants at the program level. The section also sets forth a comprehensive set of mitigation measures as part of a program to, in combination with the mitigation measures already presented in the Revised Draft EIR for the Newhall Ranch Specific Plan and WRP, avoid or minimize impacts to the spineflower and other sensitive plant species that may be found on the site. Environmental documents to be prepared for future subdivision maps will also present measures and/or programs necessary to mitigate potential impacts to spineflower and other sensitive plants.

2.6.2 BACKGROUND

2.6.2.1 Prior Newhall Ranch EIR and Board Approval

The Revised Draft EIR for the Newhall Ranch Specific Plan and WRP (March 8, 1999) (Final EIR) described the sensitive biological resources present, or likely to be present, on the 11,963-acre Newhall Ranch Specific Plan site. On March 23, 1999, the County's Board of Supervisors certified the Final EIR and approved the Newhall Ranch Specific Plan and WRP.

The Final EIR determined that the proposed Specific Plan would preserve approximately 6,831 acres (or 57 percent) of the Newhall Ranch site; however, portions of the development areas would occur in sensitive upland and riparian habitats. The Final EIR also identified unavoidable, significant impacts to

sensitive biological resources that would occur as a result of development of the Specific Plan and WRP. Issues of particular concern in the EIR included the conversion of approximately 5,132 acres of habitat for fish, wildlife and plants with implementation of the Specific Plan and WRP.

The spineflower was not observed onsite when biological field surveys were completed for Newhall Ranch in 1995 and 1996. However, the Final EIR identified the habitat, local distribution and the on-site occurrence potential of the spineflower. See, Final EIR, **Table 4.6-2**, pp. 4.6-15 (this table is also presented in **Appendix 2.6** of this document). The EIR also stated that spineflower habitat consists of coastal sage scrub and other sandy places and that the historic distribution of the spineflower included the Specific Plan area. The EIR found that the spineflower had low potential for occurrence on the Specific Plan site because it had not been found, and because it was a plant presumed to be extinct.

The Final EIR described the Specific Plan's impact on the spineflower as the potential loss of individual spineflower (if present). See, Final EIR, pp. 4.6-58. The EIR concluded that the Specific Plan's potential impacts on the spineflower would be significant, absent the identified mitigation measures. With implementation of the mitigation measures, however, the EIR found that the impact potential on the spineflower would not be significant.

The Final EIR also addressed other sensitive plant species, including, Peirson's morning glory, slender mariposa lily, many-stemmed dudleya, and short-leaved beavertail cactus. See Final EIR, pp. 4.6-50, 56, 60, 61. The Final EIR concluded that impacts to these species would not be significant assuming implementation of mitigation measures 4.6-27, 4.6-34, 4.6-35 and 4.6-53 identified in the EIR. These and other sensitive plant species are addressed in further detail below.

The mitigation measures in the Final EIR (see, Mitigation Measures 4.6-53 and 4.6-59) require updated sensitive plant and animal surveys to be conducted onsite at the time Newhall Ranch subdivision maps are filed. As discussed below, by requiring focused surveys at the subdivision map submittal stage, the monitoring and mitigation for sensitive plant and animal species continues as the buildout of Newhall Ranch proceeds. It also continues with current, up-to-date survey data. With the listing of sensitive plant and animal species in a continual state of flux (i.e., with the number of plant and animal listings increasing in recent years), the most accurate surveys will be those prepared in conjunction with the processing of each Newhall Ranch subdivision map. This approach will also allow for further formulation of mitigation measures at the project level.

2.6.2.2 The Newhall Ranch Litigation

In April 1999, project opponents filed lawsuits challenging both the Specific Plan and the adequacy of the Final EIR under CEQA, including claims that the EIR improperly deferred both the analysis and mitigation of the Specific Plan's impacts on sensitive biological resources.

The lawsuits challenging the Specific Plan and EIR were transferred to a neutral county at the request of the parties, and were heard by the Kern County Superior Court (the Honorable Roger D. Randall, presiding). After the hearing in March 2000, the Court took the matter under consideration.

On May 31, 2000, the Court issued a tentative decision. Thereafter, in August 2000, the Court issued a final Statement of Decision, Writ of Mandate and Judgment in the Newhall Ranch litigation. In the writ, the Court determined that the vast majority of the County's environmental determinations on Newhall Ranch had been lawfully made and declined to set aside the entire EIR and the entire project approvals.[1] With respect to the six issues described in the writ, the Court ordered the County's Board of Supervisors to partially set aside the Newhall Ranch project approvals, and to partially decertify the Final EIR.

The Court found that the Final EIR's analysis of the Specific Plan's biological impacts, including potential impacts to sensitive plant species, was adequate under CEQA with the exception of potential impacts to the Santa Clara River floodway.[2] In addition, the Court rejected challenges to the adequacy of the EIR's biological mitigation program, by finding that the mitigation measures were adequate under CEQA, in that the County had "meaningful information that justified an expectation of compliance" and the EIR included "performance standards that can be utilized to hold the Respondents to compliance with the EIR."[3]

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1 For further information regarding the Newhall Ranch litigation, please refer to the Newhall Ranch Draft Additional Analysis (Draft Additional Analysis), Volume II, **Appendix 1.0(a)** and the Final Additional Analysis (FAA), Volume II, **Appendix A**.

2 *See*, Newhall Ranch FAA, Volume II, **Appendix A** [Court's Statement of Decision, pp. 16-17].

3 *See*, Newhall Ranch FAA, Volume II, **Appendix A** [Court's Statement of Decision, pp. 16].

2.6.2.3 Newhall Ranch Draft Additional Analysis

(a) Scope of the DAA

The Newhall Ranch Draft Additional Analysis (DAA; April 2001) was prepared to address the six specific issues raised by the Court in the Newhall Ranch litigation. For further information regarding the analysis of the six issues, please refer to the Draft Additional Analysis, Executive Summary and Section 1.0.

(b) DAA Analysis Of Spineflower And Approach To Surveys

One of the six issues to be addressed in the DAA was an additional analysis of the WRP alternatives, including an alternative of siting the Specific Plan's WRP off-river. This analysis also assessed the biological impacts of that siting.

A project-specific analysis was conducted for the WRP alternatives in response to the Court's direction, and because the applicant was seeking construction-level approvals for the WRP portion of the Specific Plan. The DAA included biological survey data on the WRP site and based on the survey data, it was determined that neither the spineflower nor any other sensitive species were present on the WRP site.

In addition, the DAA discussed the spineflower on the Newhall Ranch Specific Plan site. Specifically, the DAA described the spineflower's historical range and habitat requirements, and confirmed the presence of spineflower on the Grapevine Mesa location of Newhall Ranch. See, DAA, Section 3.4, pp. 3.0-13-3.0-14. The DAA's appendix materials also included the petition to list the spineflower as an endangered plant species under the California Endangered Species Act. A copy of the petition, dated December 1, 1999, was provided in the DAA, Appendix 3.0(e).

After public circulation of the Newhall Ranch DAA in April 2001, the DAA's responses to comments were prepared. The responses noted the Fish and Game Commission's August 23, 2001, determination that the listing of the spineflower as an endangered species was warranted. Thereafter, the Commission published a proposed rule change on November 13, 2001. This rule change was finalized, and the regulations regarding the listing of spineflower under the California Endangered Species Act became effective, as of September 8, 2002.

As to the presence of the spineflower found on the Specific Plan site, both the Newhall Ranch Final EIR and the DAA state that site-specific surveys would be conducted within the Specific Plan areas where the spineflower, and other sensitive plant species, have the potential to occur. These surveys were to be

completed in conjunction with the filing of a subdivision map with the County (Final EIR Mitigation Measures 4.6-53 and 4.6-59). The purpose of the Newhall Ranch mitigation program for sensitive plant and animal species (e.g., EIR Mitigation Measures 4.6-53, 4.6-59) is to require site-specific surveys at the subdivision map filing level, which is the time when project-specific impacts can be identified, since the precise location of the residential lots, the specific internal street alignments within each tract, open area lots and other facilities and infrastructure is known at that time.

In contrast to the subdivision map level, the DAA found that, at the Specific Plan and program EIR level, for long-term development plans that do not allow for construction, it was too early in the land use planning process for detailed, project-level biological surveys, and, even if performed, the surveys would be out-dated by the time subdivision maps were submitted for processing. Therefore, as stated in the DAA, the "better practice" is to require site-specific plant and animal surveys at the subdivision map submittal phase, so that current, up-to-date data regarding the species is obtained prior to subdivision project approvals and actual disturbance of the species or its habitat.

(c) The DAA's Mitigation Relating To Spineflower/Sensitive Species

As previously stated in the Final EIR, potential project impacts to the spineflower include the potential loss of individual spineflower due to development. This impact was considered significant, absent implementation of the identified mitigation measures. However, with appropriate mitigation in place (e.g., Mitigation Measure 4.6-53, 4.6-59), these impacts were considered to be reduced to below a level of significance.[4] Two of the applicable mitigation measures were then revised to further strengthen the overall mitigation program for the spineflower and other sensitive animal or plant species. The revised measures are found in the DAA, Mitigation Measures 4.6-53 and 4.6-59, which are discussed further below.

With implementation of the two revised mitigation measures, the Newhall Ranch DAA found that potential impacts to sensitive, threatened and endangered plant or animal species occurring, or likely to occur, on Newhall Ranch were reduced to below a level of significance.

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4 *See,* Newhall Ranch Revised Draft Additional Analysis, pp. 3.0-14, for the revised text regarding the spineflower.

2.6.3 PROJECT-LEVEL PLANNING ACTIVITIES AND PLANT SURVEYS

2.6.3.1 Background Regarding Post-EIR Approval/Initial Plant Surveys

After the County's certification of the Final EIR and project approvals in March 1999, the applicant began to implement the Newhall Ranch tentative map process, and to coordinate the preparation of a "river management plan" with CDFG and other agencies. The proposed River Management Plan was intended to address project-specific activities on Newhall Ranch, which require federal and state permitting.

As part of these project-level planning activities, the applicant hired URS Corporation in spring 2000 to conduct rare plant surveys on the Newhall Ranch site to support the River Management Plan and future Newhall Ranch tentative map submittals. In late April 2000, URS began conducting sensitive plant surveys over portions of Newhall Ranch. In May 2000, URS botanists identified the presence of what they believed to be the spineflower one-half mile south of the Santa Clara River near Grapevine Mesa (the Grapevine Mesa location). To verify the species as spineflower, Impact Sciences, Inc. submitted a specimen to the University of California, Berkeley (UCB). In late May 2000, UCB provided verification that the specimen was the San Fernando Valley spineflower. Thereafter, the applicant notified CDFG and other agencies of the presence of spineflower at the Grapevine Mesa location, and erected posts to protect the plant species. URS botanists continued to survey other portions of Newhall Ranch for sensitive plants through the end of May 2000, and the botanists noted unconfirmed spineflower locations on other portions of Newhall Ranch.

On May 31, 2000, the Court issued its ruling in the Newhall Ranch litigation. The Court's ruling upheld approval of the EIR and the project in most respects; however, the Court ordered the County to provide additional environmental analysis relating to the six specific issues. In light of the Court's ruling, the applicant suspended plant surveys and a number of other project-specific planning activities relating to Newhall Ranch. The applicant then focused on the steps required to comply with the six issues raised in the Court's decision. Thereafter, the applicant also advised CDFG and other agencies of its decision to withdraw from consideration the proposed River Management Plan until the Court's six issues were addressed in an additional environmental analysis.

In connection with preparation of this Revised DAA, in November 2002, the applicant requested that URS prepare a memorandum documenting its prior 2000 field surveys. Attached to the URS memorandum are maps, also prepared in 2002, which reflect where URS observed sensitive plant species in the spring of

2000. The URS memorandum, and mapping, are included in Appendix 2.6 **of this document. 2.6.3.2 Other Plant Surveys**

(a) On-Site Surveys

After circulation of the Newhall Ranch DAA, the applicant reinitiated sensitive plant surveys on portions of Newhall Ranch in May 2001, in order to support processing of future Newhall Ranch tentative map submittals. Those field surveys were completed on Newhall Ranch in May and June 2001 by the consulting firm FLx. The surveys took place on Newhall Ranch in River Village, Long Canyon, San Martinez, and Salt Canyon. As part of those surveys, spineflower was observed at the San Martinez location, but not found in any of the other surveyed areas (FLx 2002; **Appendix 2.6**). In early May 2002, the applicant hired FLx to conduct sensitive plant surveys on a portion of the Airport Mesa. FLx observed spineflower at the Airport Mesa location (FLx 2002). The FLx report identifies the specific survey locations within the Newhall Ranch site, including mapping of the spineflower locations, and provides estimates of spineflower population sizes.

The FLx report (**Appendix 2.6**) also documents the presence of other sensitive plant species within the survey areas, including characterization of the other sensitive plant species, the mapping of their locations, and plant estimates. The other sensitive plant species noted in the FLx report are Peirson's morning glory (*Calystegia peirsonii*), southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), and southern California black walnut (*Juglans californica* var. *californica*), all CNPS List 4 species.

In May 2002, the applicant hired Dudek & Associates (DUDEK) to begin sensitive plant surveys on the Mesas Village portion of Newhall Ranch. In late May 2002, CDFG obtained a warrant and conducted spineflower surveys covering approximately 800 acres of Newhall Ranch. The warrant alleged a possible "take" of the spineflower. The CDFG surveys took place in agricultural activity areas on Newhall Ranch. In its surveys, CDFG confirmed the presence of spineflower in locations on the Grapevine Mesa and Airport Mesa portions of Newhall Ranch.

DUDEK's survey efforts were temporarily stopped in late May 2002, due to CDFG's spineflower surveys. At that time, the applicant requested that DUDEK document the CDFG areas that were surveyed and flagged. The County also directed that the applicant have DUDEK expand its survey work to include all developable areas on the Specific Plan site (DUDEK 2002; **Appendix 2.6**).

The DUDEK surveys were conducted from May through early September 2002. The DUDEK surveys confirmed the presence of spineflower at Grapevine and Airport Mesas and identified spineflower at the

San Martinez Canyon location (DUDEK 2002). The DUDEK report identifies where the spineflower was observed, includes mapping of the spineflower locations, and provides estimates of spineflower population sizes.

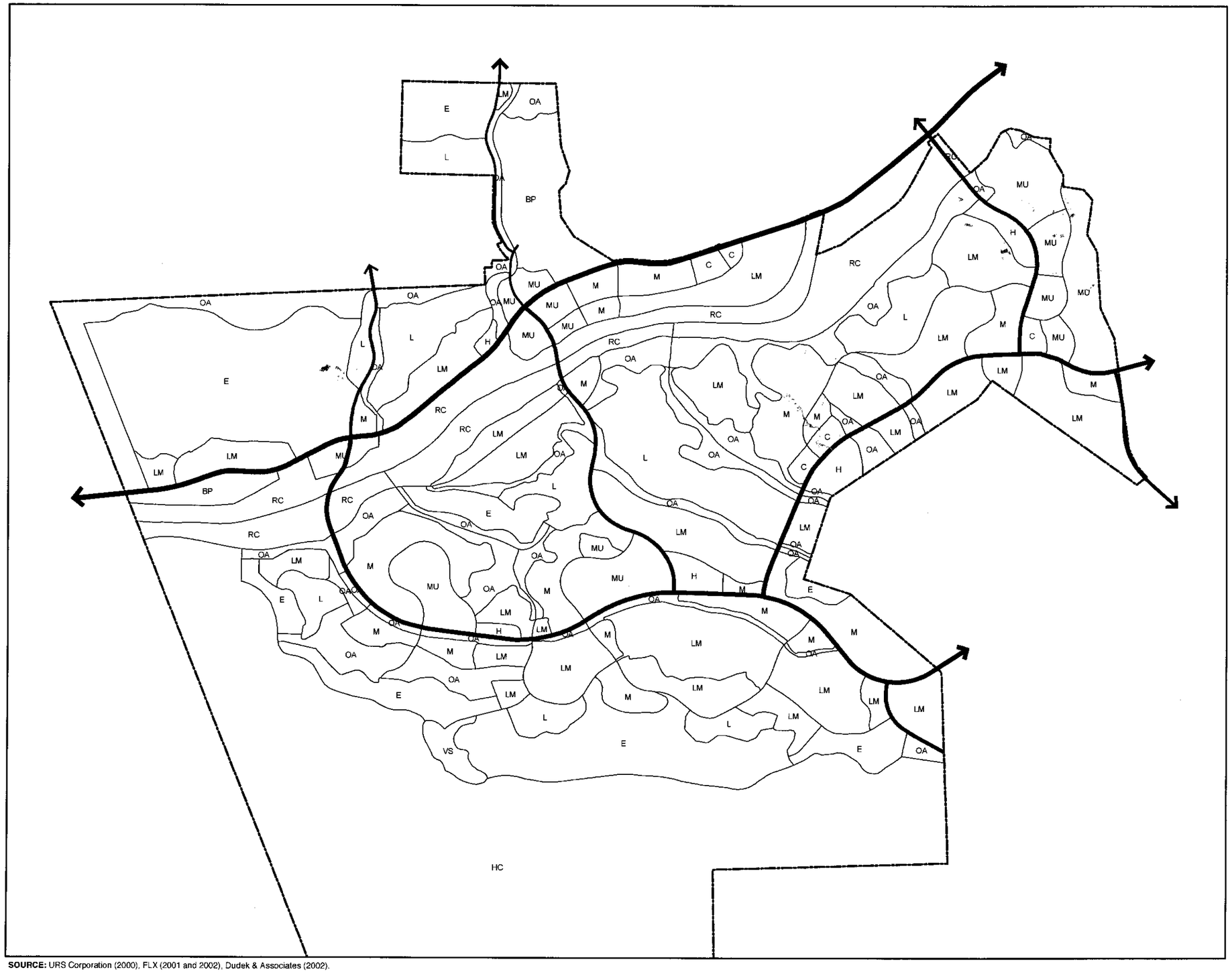
The DUDEK surveys also confirm the presence of other sensitive plant species within the areas surveyed. Species characterizations and locations are documented in the DUDEK report (**Appendix 2.6**). The other sensitive plant species documented by DUDEK include *Dudleya* spp. (possibly *D. cymosa* ssp. *marcescens*); island mountain mahogany (*Cercocarpus betuloides* var. *blancheae*); short-joint beavertail (*Opuntia basilaris* var. *brachyclada*); possibly the Los Angeles sunflower (*Helianthus nuttallii* ssp. *Parishii)*; as documented in the DUDEK report, further taxonomic work on this observation is ongoing; club-haired mariposa lily (*Calochortus clavatus* var. undetermined); and Southern California black walnut (*Juglans californica* var. *californica*).

Based on the surveys discussed above, **Figure 2.6-1** illustrates the locations of where the spineflower was observed on the Newhall Ranch Specific Plan site. **Figure 2.6-2** depicts the names and locations of sensitive plant species observed on the Specific Plan site. **Appendix 2.6** contains a list of all plants observed on Newhall Ranch since circulation of the original Draft Additional Analysis. This table is entitled "Plants Observed, May 2000 to Present, Newhall Ranch."

Table 2.6-1 presents the population estimates for the spineflower, based on surveys conducted on the Newhall Ranch Specific Plan site.

Table 2.6-1
Population Estimates for the Spineflower

Survey Area	Survey/Plant Year	Total Plants
Airport Mesa		
- FL*x*	2001	14,750
- Dudek	Pre-2002	19,716
- Dudek	2002	31,856
Grapevine Mesa		
- Dudek	Pre-2002	503,870
- Dudek	2002	12,082
San Martinez Grande Canyon		
- FL*x*	2001	769
- Dudek	Pre-2002	2,350,700
- Dudek	2002	125



NEWHALL RANCH

L E G E N D

- LOS ANGELES SUNFLOWER
- SPINEFLOWER LOCATION

LAND USE CATEGORIES

- E — ESTATE RESIDENTIAL
- L — LOW DENSITY RESIDENTIAL
- LM — LOW-MEDIUM DENSITY RESIDENTIAL
- M — MEDIUM DENSITY RESIDENTIAL
- H — HIGH DENSITY RESIDENTIAL
- C — COMMERCIAL
- BP — BUSINESS PARK
- MU — MIXED USE
- VS — VISITOR SERVING
- OA — OPEN AREA
- RC — RIVER CORRIDOR
- HC — HIGH COUNTRY
- ROADS

FORMA

NORTH

Feet: 0 375 750 1,500

Meters: 0 150 300 600

100 ACRES 400 ACRES

Figure 2.6-1

SAN FERNANDO VALLEY SPINEFLOWER LOCATIONS

SOURCE: URS Corporation (2000), FLX (2001 and 2002), Dudek & Associates (2002).

NEWHALL RANCH

L E G E N D

- (BC) Short-Joint Beavertail Cactus (List 1b)
- (DU) Dudleya (List 1b)
- (LA) Los Angeles Sunflower (1A)
- (SF) San Fernando Spineflower (CE)

See Appendix for detailed mapping of rare plants.

FORMA

NORTH

100 ACRES

400 ACRES

Feet: 0 550 1,100 2,200

Meters: 0 150 300 600

Figure 2.6-2

SENSITIVE PLANT LOCATIONS

SOURCE: URS Corporation (2000), FLX (2001 and 2002), Dudek & Associates (2002).

As indicated above, rare plant surveys were completed by FLx in 2001 and Dudek & Associates in 2002. Both firms used specific methods to estimate the size of plant populations, and to determine which plant populations were placed into separate polygons. Dudek used a 4-meter (13.1 feet) rule to separate polygons. It chose this distance based on the topography, vegetation, detectability of the plants, and general accuracy of the global positioning system (GPS) that was used. To obtain plant estimates, Dudek either directly counted all individuals in a polygon or conducted a clumped counting and extrapolation method, which involved counting individual plants in small areas of a polygon, then extrapolating over other areas of the polygon, until a total was obtained. Most of the polygon estimates were conducted by two botanists, independently, then compared for consistency.

Regarding the surveys completed by FLx, when sensitive plants were observed, their locations were mapped and population sizes were estimated. Single plants of a species or small populations were marked on the map with a point; larger populations were indicated with a polygon representing the spatial extent of the plants. The determination of which individual plants were included in a given polygon was based on their distribution or spatial clustering. Each population composed of more than one plant represents a cluster of plants. Clusters were mapped either separately or combined into larger clusters based on applied field judgment regarding the degree of continuity of species cover as well as the scale of the maps used in the field. For example, at the scale of a USGS 7.5 minute quadrangle, the smallest area that can be mapped with a polygon is about 1 acre; on maps at scales of 1 inch=200 feet, or 1 inch=400 feet, such as those used in the field by FLx for the project sites, much smaller areas can be mapped. The population size, when small, was based on counting individual plants. For larger populations, plants were counted in a small representative area, and then an estimate for the entire population was made based on visual extrapolation over the larger area.

(b) Off-Site Surveys

During the 2000 surveys, URS found what was thought to be spineflower at one off-site location in the vicinity of Newhall Ranch. This location, shown generally on **Figure 2.6-3, On and Off-Site San Fernando Valley Spineflower Locations**, is south of the Magic Mountain Theme Park and Magic Mountain Parkway near existing Southern California Edison electrical towers (i.e., "Magic Mountain" location). The applicant also hired FLx in June 2001 to conduct rare plant surveys at another off-site location near the Newhall Ranch Specific Plan site. This off-site location, also shown on **Figure 2.6-3**, is within the Valencia Commerce Center site (i.e., "Commerce Center" location). **Figures 2.6-4** and **2.6-5** depict where the spineflower was specifically observed on both the Commerce Center and Magic Mountain locations.

(c) Additional Spineflower Surveys

Spineflower was found on the Ahmanson Ranch project site, located in Ventura County, in 1999. The proposed development of the Ahmanson Ranch project would result in the direct loss of spineflower and existing spineflower habitat. The impacts to spineflower were considered significant, but mitigated to below levels of significance, if the recommended Ahmanson Ranch mitigation program is adopted. For further information regarding Ahmanson Ranch, please refer to the Draft Supplemental Environmental Impact Report for Ahmanson Ranch Project (SCH No. 89041908), February 2002, which is available for public review at County of Ventura Resource Management Agency, 800 S. Victoria Avenue, Ventura, California 93009, Dennis Hawkins, Senior Planner (805) 654-2492.

In 1999, environmental studies prepared for the Ahmanson Ranch project report that spineflower surveys were conducted at three historic site localities (Chatsworth Park, Little Tujunga Wash, and Lake Elizabeth) and at a larger number of sites that were adjacent to historic localities or that supported potentially suitable spineflower habitat, and that no additional spineflower populations were found as a result of these surveys (Sapphos 2001; GLA 1999).[5] The California Department of Fish and Game also reviewed 91 plant surveys undertaken in Southern California in the process of designating spineflower as a candidate for state listing as endangered, and each of the reviewed reports concluded that spineflower was not present.

In 2000, environmental studies prepared for the Ahmanson Ranch project also report that historic spineflower sites that were accessible and/or extant were visited to determine the presence or potential occurrence of spineflower in these locations; the remaining historic sites were assessed through the use of aerial photographs or other mapping aids (Sapphos 2001). Based on this work, it has been determined that agricultural, residential, flood control, and recreational development have occurred within or in proximity to all of the known historic sites. However, potentially suitable habitat for spineflower remains in the vicinity of seven of the ten historic sites listed by the CNDDB (CDFG 1999). The status of historic spineflower locations is presented in further detail in the Sapphos 2001 report (see, **Appendix 2.6** of this document).

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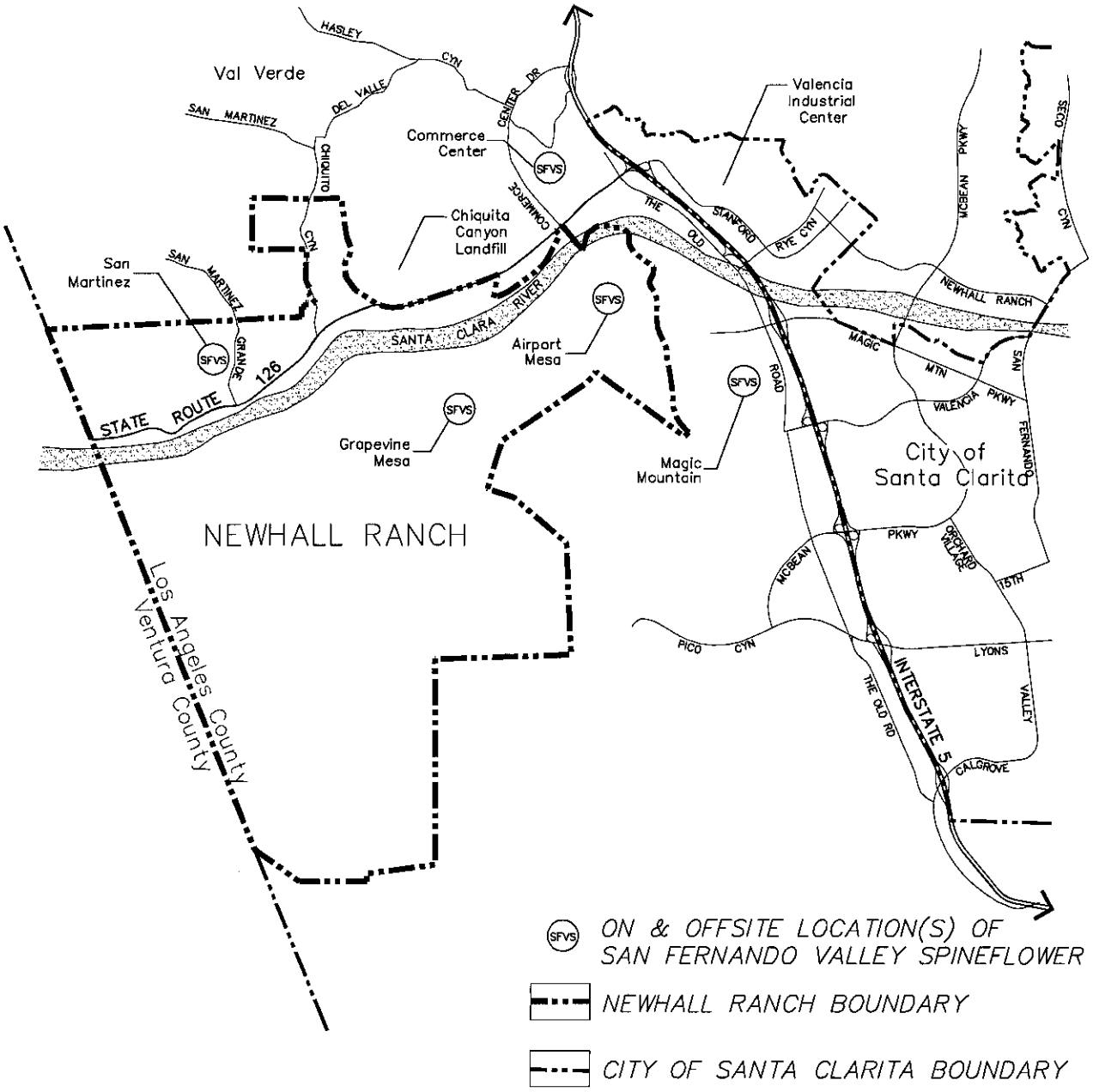
5 A copy of the report entitled, "*An Investigation Of The San Fernando Valley Spineflower For The Ahmanson Land Company*," prepared by Sapphos Environmental, Inc., dated February 27, 2001, is included in **Appendix 2.6** of this document.



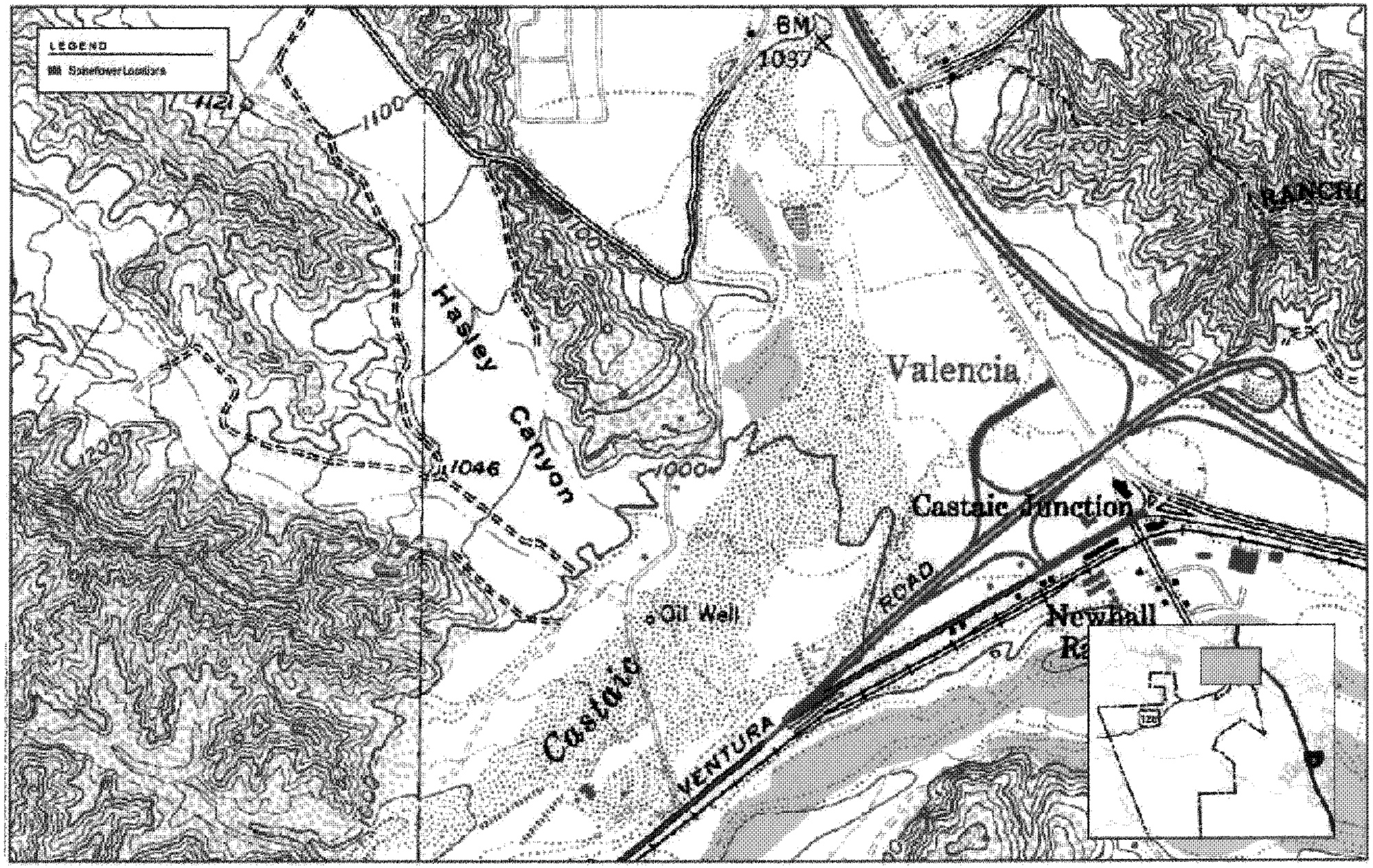
NEWHALL RANCH™
SPECIFIC PLAN

Prepared For: Newhall Ranch Company

Figure 2.6-3
ON & OFFSITE SAN FERNANDO VALLEY SPINEFLOWER LOCATIONS

Computer Mapping by KORMA Systems

OCTOBER 2002
m:\forma3\newhall\arcdata\spineflower\acad\vlcmap.dwg

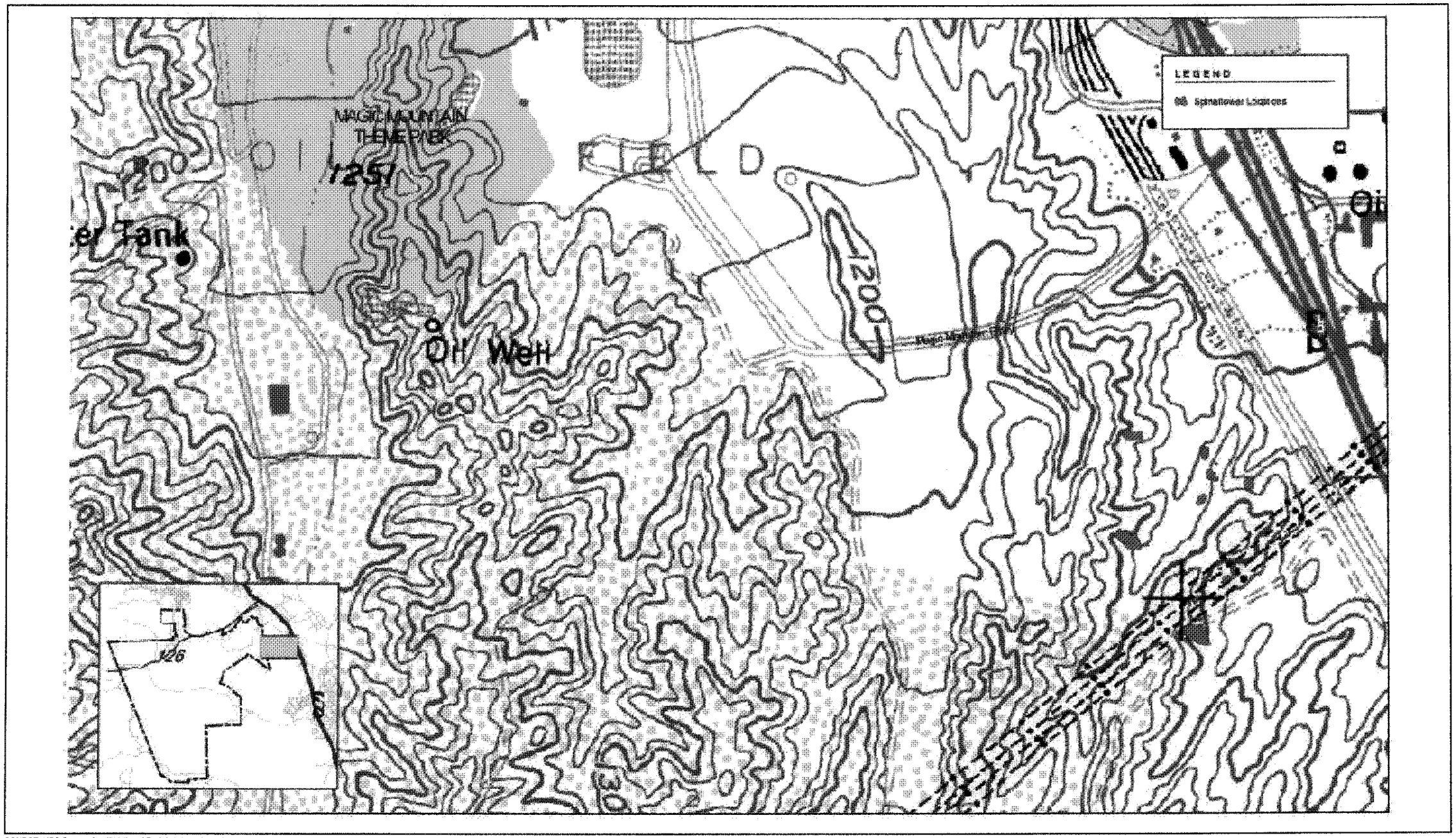


SOURCE: FLX (2001) and Dudek & Associates (2002).

Figure 2.6-4
COMMERCE CENTER SPINEFLOWER LOCATIONS ON USGS TOPOGRAPHY

NEWHALL RANCH

FORMA



SOURCE: URS Corporation (2000) and Dudek & Associates (2002).

Figure 2.6-5
MAGIC MOUNTAIN SPINEFLOWER LOCATIONS ON USGS TOPOGRAPHY

NEWHALL RANCH

0 225 450 Feet

FORMA Nov 2002

2.6.4 EXISTING SETTING

2.6.4.1 Regional Setting

The 11,963-acre Newhall Ranch is an irregularly shaped site located in an unincorporated portion of the Santa Clara River Valley in northwestern Los Angeles County. The proposed Specific Plan site is within the County's Santa Clarita Valley Planning Area. For further information regarding the Specific Plan's regional setting, please refer to the Final EIR (March 8, 1999), Section 2.2(a) and Figures 1.0-1 and 1.0-2.

2.6.4.2 Local Setting

The Newhall Ranch site is generally located between the Magic Mountain Theme Park on the east and the Los Angeles County/Ventura County line on the west. The site is one-half mile west of the I-5 and the City of Santa Clarita, and is largely southwest of the junction of I-5 and State Route 126 (SR-126). Both the Santa Clara River and SR-126 transect the northern portion of the site. For further information on the local setting of the Newhall Ranch site, please refer to the Final EIR (March 8, 1999), Section 2.2(b).

2.6.4.3 Ongoing Uses and Operations

Historically, the Newhall Ranch property has represented a majority of the farmland in the Santa Clarita Valley. In fact, much of the Newhall Ranch site is zoned for Heavy Agriculture (A-2), with a small portion of the site zoned for Manufacturing (M-1.5). The permitted uses in the A-2 zone include, among others, dog kennels, feed mills, hogs, livestock sales yards, mushroom farms, riding and hiking trails, oil wells, crops, dairies, greenhouses, the raising of horses, cattle, sheep, goats and other similar animals, and fruit and vegetable packaging plants. See, Final EIR, Section 8.0, Table 8.0-2.

The Newhall Ranch site has been cultivated by the applicant with row crops, alfalfa, pasture, dryland crops and walnuts. In addition, the land has been leased over the years for the cultivation of corn, mixed vegetable crops (onions, parsley, cilantro, turnips, herbs, spinach, kale, red beets, radish and cucumber), alfalfa and barley. In 2001, approximately 1,825 acres of the Newhall Ranch site were under cultivation, with approximately 800 acres irrigated and the remaining acres dry farmed. The irrigated land was used for the production of carrots, spinach, cilantro, turnips, red beets, onion, sudan grass, and other crops. The remaining acres were dry farmed for the production of crops, such as barley.

In that same year, the remaining acreage on the Newhall Ranch site was under agricultural production as cattle grazing land (i.e., over 10,000 acres), consistent with historic uses. Although the amount of acreage

that is grazed varies from year-to-year depending upon the lease agreement(s) between the applicant and its tenant(s), the agricultural acreage used for grazing on Newhall Ranch is part of the County's rangeland.

Portions of the Newhall Ranch site are also leased for oil and natural gas production operations and for filmmaking. Medallion is an oil company with oil and natural gas operations on leased Newhall Ranch sites totaling approximately 1,270 acres. Several other oil companies lease smaller areas of land for oil and natural gas operations along the northern edge of the Newhall Ranch site. However, the oil and gas operations are slowly phasing out due to decreases in production.

The motion picture and television industries also use Newhall Ranch for purposes of filming movies and television productions.

2.6.4.4 Geology, Soils and Topography Characteristics

The Newhall Ranch site is part of the Ventura Basin of southern California, which is a westerly-plunging depositional basin produced by tectonic downwarping initiated during the early Miocene period (thirteen to twenty-five million years before the present). East-west and northwest trending primary ridges, and generally north and south trending secondary ridges dominate the site's topography. Slope gradients vary from moderate to steep in the hills, and very gentle in the Santa Clara floodplains, tributary canyons, and on the uplifted terrace (mesa) surfaces above the river. For further information regarding the geologic, soil and topographic characteristics of the Newhall Ranch site, please refer to the Final EIR (March 8, 1999), Section 4.1.3.

A geologic evaluation has been prepared by Allan E. Seward Engineering Geology, Inc., a geological and geotechnical consulting firm. The evaluation summarized the results of research and field observations that were conducted to assess the geologic and geomorphic conditions of the three general locations where spineflower is known to occur on Newhall Ranch. The three locations are generally referred to as Airport Mesa, Grapevine Mesa and San Martinez.

The evaluation described the pertinent geologic conditions at the three on-site spineflower locations. Based on this data, there are a number of similar geologic and geomorphic conditions at each site. The similarities are summarized below.

1. Nearly all of the spineflower plants at Grapevine Mesa and Airport Mesa occur on granular, nonmarine terrace deposits or lithologically similar portions of the upper

member of the Saugus Formation. A few spineflower plants germinated on artificial fill or alluvium derived from adjacent terrace deposits. The spineflower plants at the San Martinez location occur primarily on old landslide debris.

2. Nearly all of the spineflower plants at the three sites occur on soils mapped by the USDA (1969) as slightly eroded to eroded Castaic-Balcom silty clay loam (30 to 50 percent slopes) or Terrace escarpments. Most of the spineflower plants at Grapevine Mesa and some at Airport Mesa are down slope of terrace surfaces capped by Zamora clay loam (2 to 9 percent slopes).

3. The vast majority of observed spineflower are growing on silty sand surface soils (SM per USCS classification). The percentage of sand ranges from approximately 40 to 80 percent, with the remaining percentage being primarily silt with minor clay and variable concentrations of gravel.

4. The dry Munsell color of the surface soils is typically brown, but it varies from dark grayish-brown to pale brown at the three site locations.

5. With rare exceptions, the spineflower is generally observed on south-facing slopes with bearings ranging from S89W to S78E at Grapevine Mesa and Airport Mesa, and extending to N78E on ridgelines at the San Martinez location.

6. With rare exceptions, the overall (macro) slope gradients range from 5° to 38°. Local (micro) slope gradients at individual plant locations are typically shallower (1° to 28°), but sometimes occur on steeper slope segments. The spineflower plants observed on north-facing slopes at the Airport Mesa location were on disturbed areas with slope gradients of less than 3°.

7. All of the observed spineflower occur within an elevation range between 1,040 feet and 1,290 feet above sea level.

8. Spineflower was observed on both undisturbed and recently disturbed ground. However, the 2002 plants were most common and robust in the disturbed areas at the Airport Mesa location (subareas 2 and 3).

9. In undisturbed areas, the spineflower consistently occurs in sparsely vegetated areas consisting of barren ground, small annual grasses, and scattered bushes of buckwheat and sage with essentially no organic (O) soil horizon.

For further information, please refer to the Seward report, dated October 2002, which is included in **Appendix 2.6** of this document.

2.6.4.5 Regulatory Setting

As stated, the spineflower was recently listed as endangered by the state Fish and Game Commission. Although not listed under the federal Endangered Species Act (ESA), it is designated as a candidate species at the federal level. The state and federal Endangered Species Acts have their own specific requirements regarding listed plant species.

(a) California ESA/Native Plant Protection Act

The California ESA provides for the establishment of lists of threatened and endangered species, including plants.[6] Section 2080 prohibits the "take" of threatened and endangered plant species within the state, and identifies exceptions to the take prohibitions. Section 2080 provides in part: "No person shall . . . take . . . any species, or any part or product thereof, that the commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided in this chapter [and] the Native Plant Protection Act. . . ".

The Native Plant Protection Act, Section 1913(c), exempts "agricultural operations or management practices, including the clearing of land for agricultural practices or fire control measures." [7] Fish and Game regulations (Title 14, Section 786.1) broadly define agricultural activities to include: "all activities undertaken on a farm or ranch for the purpose of producing or marketing any plant or animal product for commercial purposes, including any such activities recognized as *compatible uses* pursuant to the Williamson Act (Govt. Code Sections 51200, et seq.) provided the activities are consistent with the economics of agricultural operations. . . ". (*Emphasis added.*) Government Code Section 51201(b) and (c) (from the Williamson Act) broadly defines the term "compatible use" to include "agricultural use." "Agricultural use" is defined to mean "use of land for the purpose of producing an agricultural commodity for commercial purposes."

The protection afforded to listed plants under the agricultural exemption provided by the Native Plant Protection Act (Section 1913(a)) is a 10-day notice requirement to enable CDFG to "salvage" plants if CDFG has notified the landowner that a listed plant is growing on the property. During the 10-day advance notice period, CDFG may enter the property and "salvage" the plant.

Under existing conditions, the applicant may continue with its farming and cattle grazing operations. Those agricultural operations could legally intensify over significant portions of Newhall Ranch. For example, the occupied spineflower habitat on Newhall Ranch could be converted legally to row crops or dry farming. Similarly, the occupied spineflower habitat could continue to be subject to ongoing cattle grazing. On Newhall Ranch, the known spineflower populations occur in agricultural production areas, including farming and cattle grazing.

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6 The California ESA is found in the Fish and Game Code, beginning at Fish and Game Code Section 2050. The listing provisions referenced above are found in Fish and Game Code Section 2070, and Title 14, California Code of Regulations, Section 670.2.

7 The Native Plant Protection Act is found in the Fish and Game Code, Section 1900-1913.

The California ESA contains applicable regulations relating to the "incidental take" of listed plant species. Fish and Game Code Section 2081 discusses these incidental take requirements. CDFG Code of Regulations, Section 783.4, also address the take requirements. In summary, the incidental take provisions require the following:

1. The take is incidental to an otherwise lawful activity.

2. The applicant will minimize and fully mitigate the impacts of the authorized take. Measures to meet this obligation are to be roughly proportional to the extent of the authorized take. Where various measures are available, measures shall maintain the applicant's objectives to the greatest extent possible. All required measures shall be capable of successful implementation.

3. The applicant is to ensure adequate funding to implement the measures and to monitor compliance with, and effectiveness of, the measures.

4. No incidental take permit shall be issued if such issuance would jeopardize the continued existence of the species.

Implementation of the Newhall Ranch Specific Plan would involve an "incidental take" of the San Fernando Valley spineflower. CDFG would serve as a responsible agency for the "incidental take" permit that would be required under Fish and Game Code Section 2081.

(b) Federal ESA

The federal government does not list spineflower as an endangered species; however, it is designated a federal candidate species. Section 9(a)(2) of the federal ESA contains the prohibitions against the take of listed plant species. Nevertheless, the restrictions that would apply if spineflower were a federally listed species are limited. For example, Section 9(a)(2) states that federal control over a change in habitat for plants extends only to areas within federal jurisdiction, or where plants are removed in knowing violation of state law. Because the occupied spineflower habitat on Newhall Ranch is not within federal jurisdiction, agricultural changes to land uses would be allowed under federal law.

2.6.5 SETTING REGARDING SENSITIVE PLANT SPECIES

2.6.5.1 Sensitive Flora

The Final EIR (March 8, 1999) listed the sensitive plant species occurring, or with a potential for occurring, on Newhall Ranch. The sensitive plant species were included in EIR Table 4.6-2 (Sensitive

Plant Species Observed or with the Potential for Occurrence on Newhall Ranch). This table is presented again in **Appendix 2.6** of this document. Maps illustrating the location of sensitive plants on Newhall Ranch were provided in Appendix N of the EIR Biota Report. The Biota Report was provided in Appendix 4.6 of the EIR.

Appendix 2.6 of this document also contains a list of all plants observed on Newhall Ranch since circulation of the original Draft Additional Analysis. This table is entitled "Plants Observed, May 2000 to Present, Newhall Ranch." A list of sensitive plants observed on Newhall Ranch during this period is provided below in **Table 2.6-2, Sensitive Plants Observed, May 2000 to Present, Newhall Ranch.**

A total of 10 sensitive plants have been observed on the Newhall Ranch site. Of those10, four are unconfirmed at the time of this writing due to seasonal limitations or ongoing discussion among botanical experts. The six confirmed sensitive plants include: Peirson's morning-glory, Island mountain-mahogany, San Fernando Valley spineflower, Southern California black walnut, Southwestern spiny rush, and Short-joint beavertail. Of these, the only plant on the state's endangered species list is the spineflower. The four unconfirmed sensitive plants include: Club-haired mariposa lily, Slender mariposa lily, Marcescent dudleya (*Dudleya cymosa* ssp. *marcescens*) or Santa Monica Mountains dudleya (*Dudleya cymosa* ssp. *ovatifolia*), and Los Angeles sunflower. Three unconfirmed plants will require current year flowers to positively identify. Because of the similarity of morphological characteristics between several species and subspecies of sunflower potentially occurring in this region, the specific taxonomic identify of observed sunflower has not been confirmed at this time. If confirmed, it is a plant that was thought to be extinct. The listing status of each of the plants is identified in **Table 2.6-2**.

Table 2.6-2
Sensitive Plants Observed, May 2000 to Present, Newhall Ranch,

Scientific Name	Common Name	Family	Status* Federal/State/CNPS
Calochortus clavatus var. *clavatus* ??	Club-haired mariposa lily	Liliaceae	-/-/4
Calochortus clavatus var. *gracilis* ??	Slender mariposa lily	Liliaceae	FSC/-/1B
Calystegia peirsonii	Peirson's morning-glory	Convolvulaceae	FSC/-/4
Cercocarpus betuloides var. *blancheae*	Island mountain-mahogany	Rosaceae	-/-/4
Chorizanthe parryi var. *fernandina*	San Fernando Valley spineflower	Polygonaceae	FC/SE/1B
Dudleya cymosa ssp. *marcescens* ?? or ssp. *ovatifolia* ??	Marcescent dudleya or Santa Monica Mountains dudleya	Crassulaceae	FT/SR/1B or FT/-/1B
Helianthus nuttallii ssp. *parishii* ??	Los Angeles sunflower	Asteraceae	-/-/1A
Juglans californica var. *californica*	Southern California black walnut	Juglandaceae	-/-/4
Juncus acutus ssp. *leopoldii*	Southwestern spiny rush	Juncaceae	-/-/4
Opuntia basilaris var. *brachyclada*	Short-joint beavertail	Cactaceae	FSC/-/1B

*Key: FE = Federal endangered; FC = Federal candidate; FSC = Federal species of concern (unofficial designation); SE = State/California endangered; SR = State/California rare; 1A = CNPS List 1A, plants presumed to be extinct in California and elsewhere; 1B = CNPS List 1B, rare or endangered in California and elsewhere; 2 = CNPS List 2, rare or endangered in California, more common elsewhere; 4 = CNPS List 4, plants of limited distribution.
?? = Unconfirmed, need current year flowers or additional analysis to determine.

2.6.5.2 San Fernando Valley Spineflower/Description and Taxonomy

The San Fernando Valley spineflower is a small, prostrate annual plant in the buckwheat family (Polygonaceae). It grows low to the ground, with several stems branching out from the base and spreading horizontally, reaching a height of up to 12 inches (30 cm) and measuring 2-16 inches (5-40 cm) across. The basal leaves are oblanceolate to oblong, 0.2 to 1.6 inches (5-40 mm) long, alternate, entire, and covered with stiff, straight, appressed hairs. Lower bracts are entire and leaf-like, while upper bracts are reduced (CDFG 2001, pp. 2; Sapphos 2001, pp. 3-1).[8]

Spineflower typically blooms from April to June. The flowers are white, six-parted, 0.1 to 0.12 inches (2.5 to 3 cm) long, have unequal sepals and are subtended by spine-tipped involucres. The six, straight involucre teeth are unequal; there are three long outer ones and three inner, shorter ones. The involucre teeth are never hooked, thus distinguishing it from its closest relative, Parry's spineflower (*Chorizanthe parryi* var. *parryi*) (CDFG 2001, pp. 2; Sapphos 2001, pp. 3-1). **Figure 2.6-6, San Fernando Valley Spineflower Illustration and Photograph**, shows a diagram of the spineflower, taken from *The Jepson Manual: Higher Plants of California*, and a photograph depicting the spineflower found on Newhall Ranch.

The spineflower belongs to the genus *Chorizanthe*, and was first described as *Chorizanthe fernandina* in 1880, based on a specimen collected in 1879, from the San Fernando Cañon in Los Angeles County. It was reclassified as *Chorizanthe parryi* var. *fernandina* in 1925, and has been recognized as a distinct taxon since that time (CDFG 2001, pp. 3-4; Sapphos 2001, pp. 3-1, Figure 3.1-1, 3-2).

8 Copies of the "Report to the Fish and Game Commission on the Status of San Fernando Valley Spineflower (*Chorizanthe parryi* var. *fernandina*)," prepared by CDFG, Status Report 2001-1, and the report entitled, "*An Investigation Of The San Fernando Valley Spineflower For The Ahmanson Land Company*," prepared by Sapphos Environmental, Inc., dated February 27, 2001, are included in **Appendix 2.6**.

2.6.5.3 Spineflower Ecological Requirements

(a) Historic Habitat Requirements

Historically, spineflower was documented as occurring in washes, riverbeds and upland sites in the San Fernando Valley around the base of the San Gabriel Mountains, Santa Susanna Mountains and the Simi Hills, in the Santa Clarita Valley and surrounding hillsides. However, little habitat condition information

was documented with these historic collections. It appears that these spineflower collections were found in "sandy" locations, possibly in deep, low nutrient soils, amongst coastal sage scrub or native grasslands (CDFG 2001, pp. 4, 5; CBI 2000, pp. 2; Sapphos 2001, pp. 3-2, Figure 3.3-1, 3-3 - 3-5).

(b) Existing Habitat

Spineflower was presumed to be extinct for 70 years, since it had not been documented since April 27, 1929, near Castaic in Los Angeles County. However, it was rediscovered on May 1, 1999, in southeastern Ventura County, on the Ahmanson Ranch project site. A second location was confirmed in the spring of 2000, in Los Angeles County, on the Newhall Ranch Specific Plan site (CDFG 2001, pp. 2).

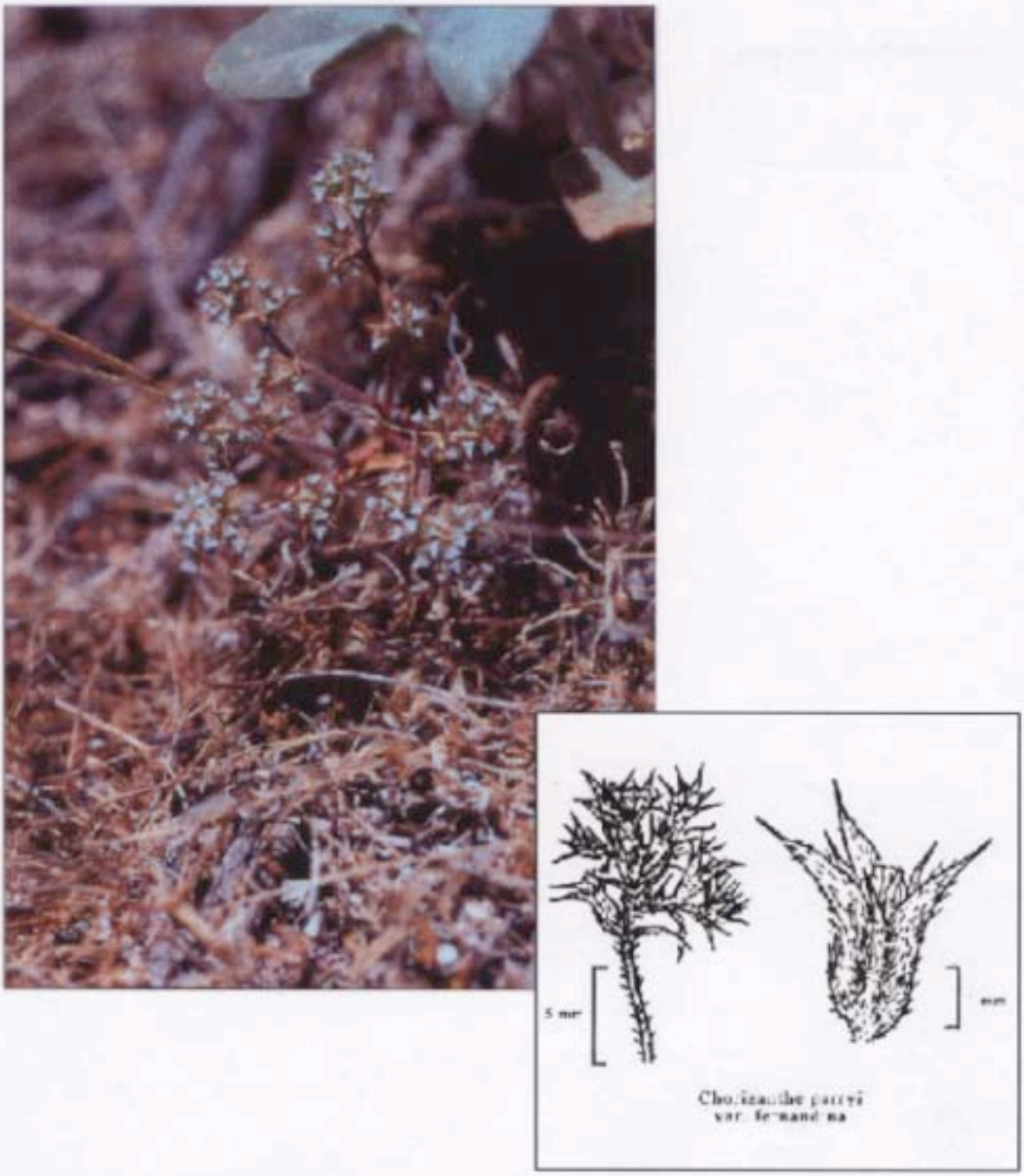
(c) Phenology, Seed Production and Seed Bank Dynamics

Spineflower is typical of many winter-spring native annuals that occur in the Mediterranean climate of California. The seeds germinate following fall and winter rains, forming a small basal rosette of leaves, and then mature, bolt and produce multiple branches. The spineflower blooms between April and May/June, and then dies during the dry summer months. The spineflower produces a single, one-seeded flower within each involucre; but it is estimated that an individual plant can produce between 60 and 300 involucres. Its seeds remain within the spiny involucres after flowering, but unlike other native California annuals, the spineflowers do not break up and the involucres do not fall to the ground right away, instead the central branches and involucral clusters remain intact for many months after flowering (CDFG 2001, pp. 8; Sapphos 2001, pp. 3-5 - 3-7).

The spineflower most likely forms a persistent seed bank in the soil, as is characteristic of ephemeral plants in unpredictable environments. The spineflower's seed bank is believed to consist of multiple genotypes (the genetic make-up of an individual), which are potentially capable of germinating under specific suitable climactic conditions (CDFG 2001, pp. 10; CBI 2000, 2). For further information regarding the soil seed bank, please refer to Sapphos 2001 (**Appendix 2.6**).

(d) Plant Size and Vigor

An individual spineflower plant can range in size from about the size of a dime, to a larger, more vigorous plant several inches or more in diameter. Plants growing in thin or compacted soil appear to be smaller than those that grow in deep or loose soil. Smaller plants tend to produce more empty involucres and thus fewer viable seeds. Based on the field observations of spineflowers on Ahmanson Ranch, plant size seems to vary depending on the growing season (CDFG 2001, pp. 11).



NEWHALL RANCH.
SPECIFIC PLAN

Prepared For: Newhall Ranch Company

FIGURE 2.6-6
SAN FERNANDO VALLEY SPINEFLOWER
ILLUSTRATION AND PHOTOGRAPH

OCTOBER 2002

(e) Breeding Systems and Pollination

The spineflower appears to be protandrous, which means that the stamens of an individual's flowers ripen before the stigma is receptive. This tends to reduce the chances of self-fertilization, however, the spineflower does exhibit some characteristics common to plants able to both cross-pollinate, and self-fertilize. A wide variety of insects were seen on spineflowers during field surveys on Ahmanson Ranch. Specifically, high densities of ants were observed, leading to the conclusion that ants play a role, although likely incidental (secondary), in pollination of the spineflower (CDFG 2000, pp. 11; CBI 2000, pp. 2, 3). For further information regarding the reproductive biology of the spineflower, please refer to Sapphos 2001, pp. 3-5 - 3-6 (**Appendix 2.6**).

(f) Seed Dispersal, Germination and Viability

The spineflower's involucre is believed to play a role in seed dispersal. Each involucre carries one seed, about 2-3 mm in length. The straight spines of the involucre may assist in seed dispersal. The involucre is believed to remain intact and protect the seed, even after falling to the ground. Fall rains likely soften the involucre, causing it to loosen and release its seed. Insects have been observed chewing off the spineflower's involucres and carrying them to their nests, often dropping some along the way, aiding in the dispersal of the spineflower (CDFG 2001, pp. 11, 12).

Seed germination and viability data are available for other, related plants, and is being developed for the spineflower based on the Ahmanson Ranch samples. The results of these tests suggest that the spineflower may produce two types of seeds, those that germinate readily and those that remain dormant until the proper conditions are reached and then germinate (Sapphos 2000, pp. 22, 23; CBI 2000, pp. 3; CDFG 2001, pp. 12). For further information regarding seed dispersal, dispersal agents, germination and viability of the spineflower, please refer to Sapphos 2001, pp. 3-5 - 3-7 and 4-13 - 4-17 (**Appendix 2.6**).

2.6.5.4 Range, Distribution and Abundance

Spineflower has been limited to a narrow range in southern California. Historically, spineflower was found scattered across Los Angeles, Ventura and Orange counties, often in what is now highly urbanized locales. Only twelve recorded occurrences are known. In the late nineteenth and early twentieth centuries, spineflower was found in washes, sandy areas, in hills and on mesas, generally around the foothills of the San Gabriel Mountains and near Santa Ana, Orange County. Some of the historic Los Angeles sites, although greatly modified, may still support suitable habitat for spineflower, including Mt. Lowe, San Fernando (Pacoima, Little and Big Tujunga Washes), Elizabeth Lake and Chatsworth Park.

The Orange county site was only categorized as "hills near Santa Ana," and the Ventura county site is the Ahmanson Ranch location.[9] All twelve of the spineflower occurrences are mapped within 70 miles of each other; the two current locations (Ahmanson Ranch and Newhall Ranch) are approximately 17 miles apart (Sapphos 2000, pp. 8; CDFG 2001, pp. 12-15). For further information regarding the range, distribution and abundance of the spineflower, please refer to Sapphos 2001, pp. 2-2 - 2-4; 3-2; Figure 3.3-1; and pp. 3-3 - 3-4 (**Appendix 2.6**).

2.6.5.5 Habitat Characterization

Habitat characterization studies performed for Ahmanson Ranch show distinct similarities between geomorphic and soil characteristics for the known spineflower sites, and verified the tendency of this species to occur in sparsely vegetated areas on-site, often in association with bare soil, rock outcroppings, and exposed bedrock. In the Ahmanson Ranch project area, this taxon is found primarily on south-to-west and south-to-east facing slopes; on the Newhall Ranch site, this taxon is generally found on south-facing slopes (Seward 2002; **Appendix 2.6**).

Substrate. Sapphos Environmental conducted a review of geologic maps and found that historic and extant spineflower sites are frequently found at locations within the watershed at which geomorphic processes are not conducive to the development of soils. These sites occur in association with two generic conditions: (a) alluvial deposits of riverine systems; and (b) contact points between exposed bedding planes at which the parent material is exposed at the surface (Sapphos 2001).

The spineflower appears to exploit locations that have thin, highly mineralized soils. Historic locations often occur in association with surficial sediments (Qa), older dissected surficial sediments (Qoa), or alluvium (Qal) of riverine or alluvial systems at which the parent material typically consists of alluvial gravels and sand with a fine clay or silt component (Sapphos 2001). In upland locations, historic sites frequently occur at contacts between two similar layers of parent material at which the contact is exposed at the surface in relation to a syncline. As with the riverine or alluvial sites, these upland sites are located on parent materials that contain distinct beds of fine-grained materials, such as the Saugus Formation (Tsr), Monterey Shale (Tm, Tmss), and unnamed shale and sandstone (Tust, Tush). Geomorphic information is summarized in the Sapphos 2001 report, (Table 5.2.1.1-1).

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9 Collections from San Diego and San Bernardino counties were later found to be mislabeled or misidentified (CDFG 2001, 14).

The geologic evaluation prepared for the Newhall Ranch applicant focused on the geologic and geomorphic conditions of the three locations where spineflower was observed on Newhall Ranch. Based on the Seward report (**Appendix 2.6**), nearly all of the spineflower plants at Grapevine and Airport Mesas occur on granular, nonmarine terrace deposits or lithologically similar portions of the upper member of the Saugus Formation. The spineflowers plants at the San Martinez location occur primarily on old landslide debris.

Soils. According to environmental reports, the spineflower populations at the Ahmanson Ranch development site occurred in association with three USDA mapping units: Zamora clay loam, San Andreas sandy loam, and Santa Lucia shaly silty clay loam (GLA 1999; Sapphos 2001). Site observations in 2000 on Ahmanson Ranch indicated that occupied habitat was frequently characterized by a lack of soils (plants growing on exposed bedrock) or poorly developed soils (lacking true soil horizons). While occupied habitat frequently occurred in the vicinity of the three identified mapping units, spineflower appeared to grow most frequently in exposed bedding planes of the parent material.

On Newhall Ranch, nearly all of the spineflower plants at the three onsite locations occur on soils mapped as slightly eroded to eroded Castaic-Balcom silty clay loam or Terrace escarpments. Most of the spineflower plants at Grapevine Mesa and some at Airport Mesa are down slope of Terrace surfaces capped by Zamora clay loam. In addition, the vast majority of observed spineflower on Newhall Ranch grow on silty sand surface soils.

Soil conditions at historic sites were also reviewed and determined to be highly variable (Sapphos 2001). No other historic site was found to be characterized by Zamora loam, San Andreas sandy loam, or Santa Lucia shaly silty clay loam; however, certain consistent parameters were observed among the 2 extant sites and the 10 known historic sites. Of particular interest was the propensity for the plant to occur in locations with highly mineralized, poorly developed soils (or lack of soils). These conditions were created by two very different geomorphic processes. Several sites were located where bedding planes were exposed at the surface in association with a syncline (rock layers upturned by the movement of the underlying tectonic plate) of drainages characterized by alluvia deposits consisting of large granitic material.

General Site Observations. Field observations on both Ahmanson Ranch and Newhall Ranch indicated that spineflower occurs in areas of relatively low vegetative cover (e.g., open ground, bare areas) regardless of the surrounding plant community. Open ground occurs within coastal sage scrub or as a result of rock outcroppings or soil surface disturbance. Spineflower plants were found growing at the edge of scrub habitat, on and adjacent to rock outcroppings or exposed bedrock, and in disturbed soils.

Open ground has become the visual signature for potential spineflower habitat because of the taxon's apparent preference for it (Sapphos 2001; Seward 2002).

Soil Physical Properties. Soil analyses conducted on the Ahmanson Ranch site indicated that areas characterized by a dense cover of grasses generally had better soil physical properties and higher nutrient levels (with the exception of nitrogen, which was low in all samples) than adjacent areas that supported spineflower and a sparse vegetative cover (Sapphos 2001). Based on this data, it appears that spineflower favors (or is restricted to) soils with poorly developed physical properties (i.e., friable soils), which would align with assumptions that spineflower may have an affinity for poorly developed soils (Sapphos 2001).

Soil Compaction. Environmental studies also suggest that spineflower tolerates compacted soils. The ability of spineflower to exploit compacted soils is demonstrated by its affinity for roads or trails that run through otherwise undisturbed locations (Sapphos 2001). Spineflower may not be able to compete with non-native grasses in better-developed and less compacted soils that have higher moisture and nutrient contents and higher levels of soils aeration (Sapphos 2001).

Elevation and Aspect. Of the 10 historic spineflower localities listed by the CNDDB (CDFG 1999), 7 lie between 500 and 1,500 feet above msl. Two historic sites (North Hollywood and Ballona) were recorded at lower elevations, and one historic site (Lake Elizabeth) was recorded at a higher elevation (CDFG 1999).

On Ahmanson Ranch, an analysis of elevation and aspect determined that spineflower polygons occur at elevations ranging from 1,220 to 1,406 feet (Sapphos 2001). In addition, spineflower polygons occur primarily on south-to-west and south-to-east facing aspects, with slopes ranging from 0 feet to 0.47 feet. For further information regarding Ahmanson Ranch populations, please refer to Sapphos 2001 report, Figure 5.2.1.3-1 and Table 5.2.1.3-1 **(Appendix 2.6)**.

In addition, the relationship of plants to drainages and subdrainages has been evaluated (Sapphos 2001). The location of plants within the watershed helps to explain the lack of soil development and associated lack of competition from plants requiring better-developed soils found in spineflower areas, for soils are typically relocated from the top of the watershed to lower elevations by water movement (Sapphos 2001).

On Newhall Ranch, all of the observed spineflower occur within an elevation range of between 1,040 feet and 1,290 feet above sea level (Seward 2002). With rare exceptions, the spineflower populations on Newhall Ranch are generally observed on south-facing slopes at Grapevine and Airport Mesas. The

spineflower populations on the San Martinez location generally occur on elevated slopes and along rounded ridges facing to the south or east.

Vegetation. Historic site records describe spineflower as occurring in scrub habitats, historic localities in association with sandy washes would mostly likely characterized as Riversidean alluvial fan sage scrub (Holland 1986), whereas upland localities would likely be characterized as coastal sage scrub (Sapphos 2001). Within the Ahmanson Ranch area, the spineflower occurs primarily on slopes, in transitional scrub-grassland habitat. Plants also occur in openings of coastal sage scrub habitat, or at the margins of dense grassland on Laskey Mesa. Within these habitats, spineflower was observed in natural and disturbed openings that were sparsely vegetated, such as the interface between non-native grassland and scrub communities, exposed bedrock, roads, abandoned stock pens, trails, gopher mounds and fox burrows. These conditions of thin, compacted, and disturbed soils, characteristic of spineflower, appear to limit competition from other vegetation and allow spineflower to exploit those conditions.

On Newhall Ranch, the vast majority of observed spineflower existed on silty sand soils. Spineflower populations were also observed on both disturbed and undisturbed ground. In undisturbed areas, the spineflower consistently occurred in sparsely vegetated areas consisting of barren ground, small annual grasses, and scattered bushes of buckwheat and sage scrub (Seward 2002).

Climate. Both timing and amount of precipitation may be important factors in germination and survival of the spineflower. For general information regarding climatic conditions, please refer to the Sapphos 2001 report (**Appendix 2.6**). In addition, the Newhall Ranch survey reports prepared by DUDEK and FLx provide that low rainfall in calendar year 2002 contributed to lower counts of observed spineflower and other sensitive plant species (see, **Appendix 2.6**).

2.6.6 IMPACT ANALYSIS

The Newhall Ranch Revised Draft EIR (March 8, 1999) contained an extensive analysis of potential impacts to biological resources, including potential impacts to sensitive plants and wildlife. Project opponents challenged the adequacy of the analysis and the mitigation measures proposed in the EIR through the court process. The Court found that the biological analysis and mitigation program were adequate and complete under CEQA. This section of the Revised Draft Additional Analysis is, in part, intended to set forth additional biological information, discuss potential impacts to sensitive plants found on the Specific Plan site, and augment the prior mitigation program with additional performance standards to mitigate potential impacts to plants found on Newhall Ranch and any that may be found in the future.

2.6.6.1 Criteria for Determining Impact Significance

To assess the significance of Specific Plan impacts on sensitive plant species, this document utilized the criteria found in CEQA and the CEQA Guidelines. For example, both Section 15065(a) of the CEQA Guidelines and the CEQA Environmental Checklist (Appendix G of the CEQA Guidelines) contain applicable significance criteria.

Section 15065(a) states, in pertinent part, that a project may have a significant effect on the environment if it has the potential "to substantially degrade the quality of the environment, . . . threaten to eliminate a plant or animal community, [or] reduce the number or restrict the range of an endangered, rare or threatened species. . . ". In addition, the CEQA Environmental Checklist (Appendix G) states, in pertinent part, that a proposed project would result in a potentially significant impact if it would have a "substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service."

Impacts to specific biota may be determined to be significant even if a project does not directly affect formally listed endangered or threatened species, as indicated in the CEQA provisions cited above. Other "sensitive" species may be classified as such and considered under the CEQA Guidelines because of local rarity or declining populations. For example, CDFG and other local governmental agencies may also use listings developed by groups such as the California Native Plant Society (CNPS) to determine the thresholds of significance. CNPS List 1 and List 2 species are included in this impact analysis because the criteria for plant species to be placed on List 1 or List 2 are similar to criteria that CDFG uses for species considered as candidates for listing or that are already listed as threatened or endangered. In addition, for purposes of this analysis, the significance thresholds include an assessment of whether implementation of the Newhall Ranch Specific Plan will substantially diminish habitat for endangered, rare, threatened or sensitive plant species, or substantially affect such plant species, as stated in the Revised Draft EIR (March 8, 1999).

2.6.6.2 Impact Assessment Methodology

As previously discussed, construction-level subdivision maps are not yet proposed at this Specific Plan and program EIR level, with the exception of the water reclamation plant. The Specific Plan designates only the zoning and land use designations for various development polygons indicated on the land use plan. As future projects within the Specific Plan are designed and engineered, a more accurate placement, size, and type of development will become known. At that time and consistent with CEQA,

project-level surveys for sensitive plant species will be conducted and potential impacts on these species can be more specifically identified and mitigated. As was reported in the Newhall Ranch DAA (April 2001), no sensitive plants were found on the water reclamation plant site. Consequently, no further analysis of that site is provided in this document.

The three locations where spineflower was found to be present on Newhall Ranch are shown in **Figure 2.6-7a, San Fernando Valley Spineflower Locations - Grapevine and Airport Mesas**, and **Figure 2.7b, San Fernando Valley Spineflower Locations - San Martinez.** To determine areas of possible impact on the spineflower at the Specific Plan level, the proposed land uses for the Newhall Ranch Specific Plan were overlain on a map of all known locations of spineflower within Newhall Ranch (see **Figure 2.6-1, San Fernando Valley Spineflower Locations,** above). Given the programmatic nature of the proposed Specific Plan, it was assumed that grading or ground disturbances would occur throughout the entire area of any land use polygon proposed for development on the Specific Plan Land Use Plan (see, Newhall Ranch DAA, Ex. 1.0-3). Such grading or disturbance would impact sensitive plants and their habitat. By taking this "worst-case" methodology, impacts to the spineflower are treated as significant at the Specific Plan level, absent implementation of the Newhall Ranch mitigation program (described below). However, with implementation of the mitigation program, each construction-level subdivision map(s) would be designed to accommodate the mitigation program and the specific mitigation measures necessary. At that stage, the Newhall Ranch subdivision map(s) would be accompanied by detailed, project-specific grading plans to be submitted to the County for processing. Under the Newhall Ranch mitigation program, each subdivision map, and the accompanying project-specific grading plans, would be required to avoid or adequately mitigate impacts to the spineflower and other sensitive plants. The analysis of each subdivision map, and the accompanying project-specific grading plans, would occur in the context of the EIR requirement imposed on the Newhall Ranch Specific Plan (see, Mitigation Measure 4.11-17).

It should be noted that approval of the Specific Plan does not authorize construction of any component of the Specific Plan (with the exception of the WRP site). In addition, Specific Plan approval does not approve any grading plans, nor authorize any grading or land disturbance within the Specific Plan boundaries (with the exception of the WRP site).

Conversely, the above-methodology assumed that impacts to spineflower and other sensitive plants observed within the four areas identified for conservation in the Newhall Ranch Specific Plan would be avoided. These areas include the Santa Clara River Corridor SMA; the large block of relatively undisturbed habitat in the higher elevations of the Santa Susana Mountains (the "High Country SMA"); all Open Areas; and the Salt Creek corridor.

The significance of direct and indirect impacts on spineflower and other sensitive plants takes into consideration the number of plants potentially affected, currently available information regarding the

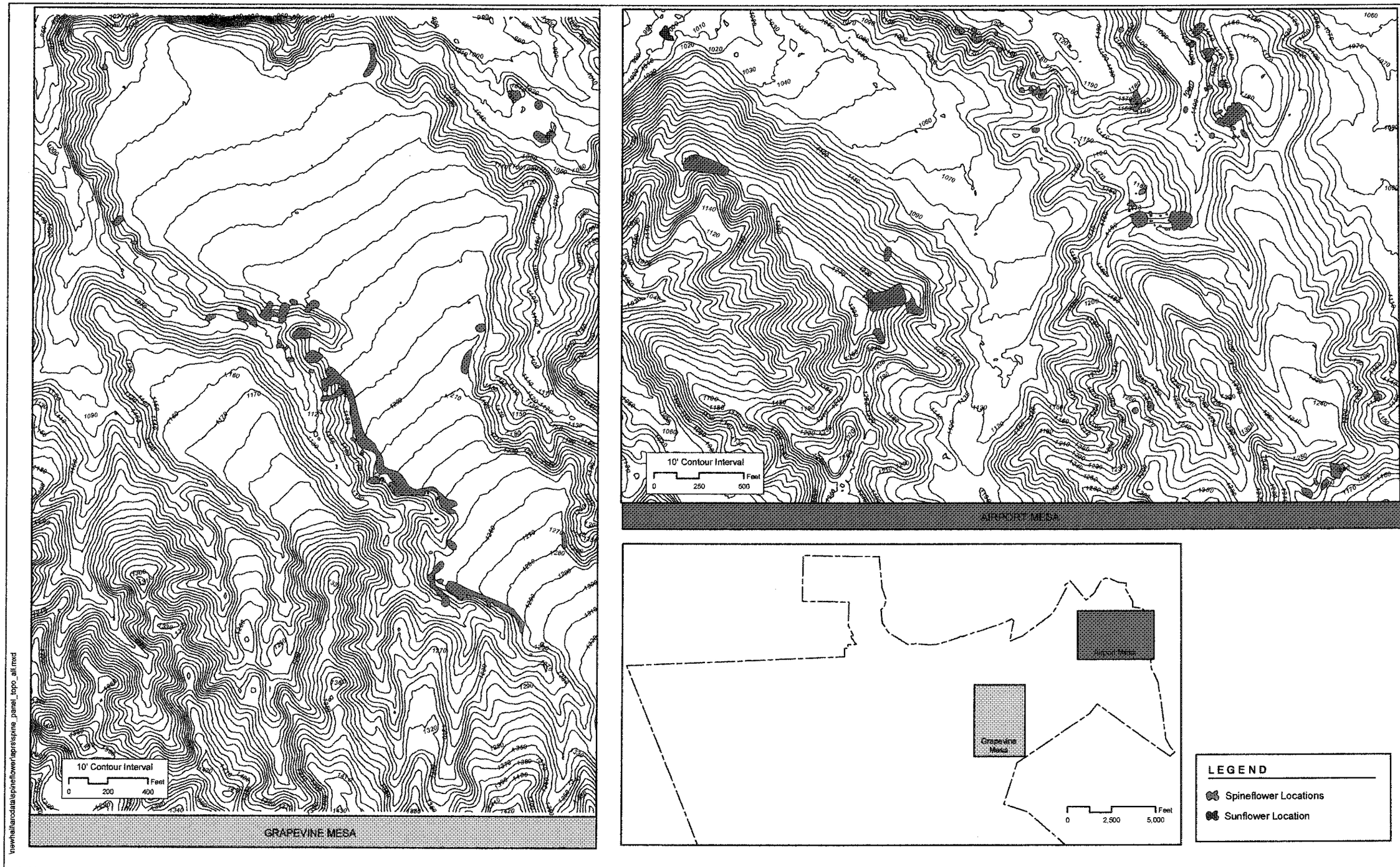
presence and distribution of spineflower and other sensitive plants on Newhall Ranch, how common or uncommon the plant species are on both the Specific Plan site and from a regional or state-wide perspective, and the sensitivity status of the plant species. These factors are typically evaluated based on the results of on-site biological surveys and studies, literature and database reviews, and discussions with biological experts. Potential impacts are then evaluated with respect to the CEQA significance threshold criteria described above.

2.6.6.3 Direct Impacts of the Specific Plan

Sensitive plants observed on Newhall Ranch during the course of the surveys on Newhall Ranch are summarized in **Table 2.6-2**, above. San Fernando Valley spineflower was observed in three general locations within the Specific Plan area: Airport Mesa, Grapevine Mesa, and San Martinez. Some populations of the spineflower are in locations that could be directly or indirectly affected by development associated with Specific Plan implementation, while other populations are located within areas that will be protected as open space. Based on field survey estimates, the approximately 6.1 acres (or 0.05 percent of the 11,963-acre Newhall Ranch) of habitat supporting spineflower plants are located within a development-related land use area; and 0.18 acres of habitat supporting spineflower plants are located in proposed open space areas in the Grapevine Mesa area. As previously stated, until more detailed project-level subdivision maps and plans are prepared, it is assumed that all land within an area zoned for development will be converted. Therefore, any spineflower populations within these areas have been determined at this time to be directly impacted (i.e., removed from the site) by buildout of the Specific Plan.

As noted in **Table 2.6-2**, the short-joint beavertail cactus, a CNPS List 1B plant species, was also observed during the surveys. Two plant taxa were observed during the 2002 field surveys that, due to the dry field conditions during 2002, did not permit definitive identification of these taxa to the species level. As indicated in **Table 2.6-2**, these taxa include *Calochortus* and *Dudleya*. Both the *Calochortus* and *Dudleya* observations occurred in areas proposed for development under the Specific Plan. Surveys would need to be conducted during next year's blooming season to confirm the exact species of these taxa.

A population of *Helianthus* was also discovered in a wetland area along the Santa Clara River. Because of the similarity of morphological characteristics between several species and subspecies of *Helianthus* potentially occurring in this region, the specific taxonomic identify of this single population of plants is not yet confirmed at this time. However, impacts to *Helianthus* are not considered significant because the population is located within an Open Area, which would prohibit development in that area.



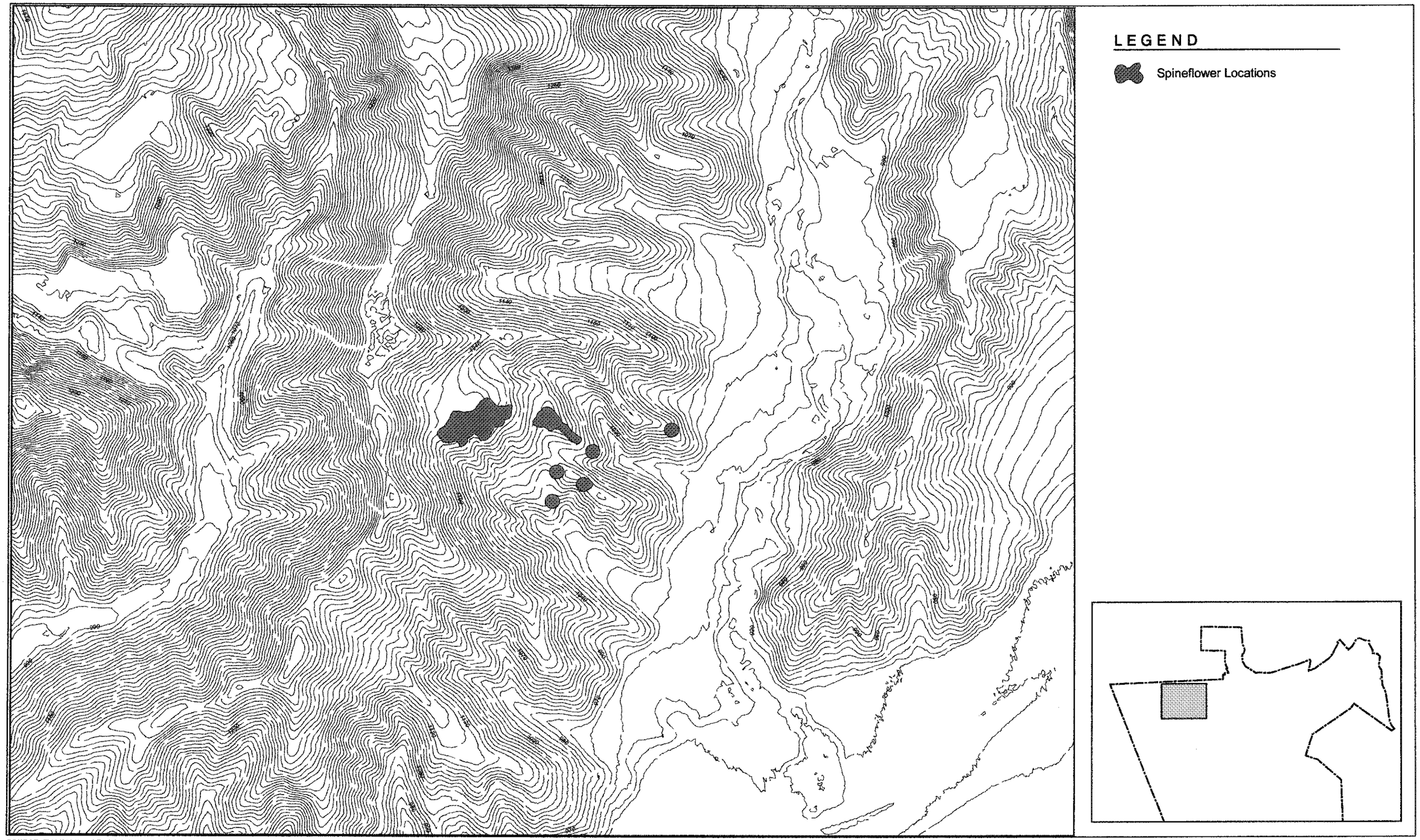
SOURCE: URS Corporation (2000), FLX (2001 and 2002), Dudek & Associates (2002).

Figure 2.6-7a

NEWHALL RANCH

RARE PLANT LOCATIONS–GRAPEVINE AND AIRPORT MESAS

FORMA
October 2002



SOURCE: FLX (2001) and Dudek & Associates (2002).

Figure 2.6-7b

RARE PLANT LOCATIONS–SAN MARTINEZ

NEWHALL RANCH

0 400 800 Feet

FORMA October 2002

An additional seven plant species that are state- or federally-listed as threatened or endangered, and 10 species listed by the CNPS as a List 1 or List 2 species, were not observed but were determined to have at least a moderate potential to occur within the Specific Plan area (DUDEK 2002). As previously noted, the focus of the 2002 plant surveys was to identify and map populations of the spineflower and other sensitive plants within the Specific Plan area. Focused surveys for other sensitive plant species potentially occurring in all suitable habitat within the Specific Plan area were not conducted at this time as the majority of these species have been addressed in the Specific Plan EIR (March 1999); and focused surveys for these plant species will be conducted during future project-level environmental review. However, the locations of any other plant species observed during the course of the spineflower surveys were mapped as illustrated in **Appendix 2.6**.

Impacts to any plants located within the Specific Plan area that are state- or federally-listed as threatened or endangered (e.g., the spineflower) or listed as CNPS List 1 or List 2 plant species (e.g., the cactus), are regarded as significant impacts under CEQA. Impacts to remaining plants are not considered significant if they are not expected to occur onsite, have a low potential of occurring, or are of a relatively low sensitivity. If future surveys confirm the *Calochortus* species to be one of the CNPS List 1B plants potentially occurring in the area, or the *Dudleya* to be one of the federally-listed threatened species known to occur in the region, the loss of occupied habitat of either of these species, directly or indirectly, would be considered a significant impact.

2.6.6.4 Indirect Impacts of the Specific Plan

Indirect impacts to sensitive plants would occur to those habitat areas adjacent to or within proposed development areas, after implementation of theproject-specific subdivision maps and associated grading plans. Indirect impacts associated with such proposed development are not quantifiable at the Specific Plan level, but are reasonably foreseeable. Specifically, the spineflower and other sensitive plant species are vulnerable to certain indirect effects associated with proposed development of Newhall Ranch. Because the character of the property will be altered from its current grazing and agricultural uses to a master planned community, the viability of the spineflower and other sensitive plant species depends upon an understanding of the indirect effects of proposed development in the vicinity of known sensitive plant populations. As such, the discussion that follows addresses the indirect impacts associated with development on the Newhall Ranch site.

In 2000, the Conservation Biology Institute (CBI) prepared a report that assessed the potential indirect impacts to the San Fernando Valley spineflower from proposed adjacent development on the Ahmanson Ranch project site in Ventura County.[10] The CBI report is based on the current knowledge of spineflower biology and a review of the available scientific literature on indirect impacts or edge effects (i.e., the adverse effects of development on adjacent sensitive biological resources), or the adverse changes to natural resource communities as a result of their proximity to developed or modified areas. The report focused on potential "risk factors" on edge effects to sensitive plants, particularly those factors that may adversely affect the spineflower, based on current knowledge of the spineflower's biology. The report identified seven overlapping risk factors or edge effects, which threaten the spineflower. These factors include:

(a) Non-native invasive plant species;

(b) Non-native invasive animal species;

(c) Vegetation clearing for fuel management or creation of roads and trails;

(d) Trampling;

(e) Changes in hydrological conditions (i.e., increases in water supply due to urban irrigation and runoff);

(f) Chemical pollutants (e.g., herbicides, pesticides, fertilizers); and

(g) Increased fire frequency.

The CBI report acknowledged that the use of buffers as an element of preserve design was important in ameliorating the effects of certain indirect impacts or risk factors/edge effects. The report analyzed five buffer widths ranging from 15 feet to 300 feet. The report then evaluated the Ahmanson Ranch (a development proposed in Ventura County) spineflower preserve design in relation to those risk factors, and management actions and alternative preserve design scenarios were then proposed that would minimize or eliminate the potential indirect impacts or risk factors/edge effects.

Each of the seven indirect impacts addressed in the CBI report are discussed further below.

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10 The CBI report entitled, "*Review of Potential Edge Effects on the San Fernando Valley Spineflower*," January 19, 2000, is included in **Appendix 2.6**.

(a) Non-Native Invasive Plant Species

Non-native plant species pose a threat to the spineflower. The conversion of open-soil habitats to exotic grassland appears to be the primary threat to spineflower at this time. Non-natives compete for light, water, and nutrients, and they can create a thatch that blocks the sun from reaching shade-intolerant plants like the spineflower, thus depleting the plant's seed bank. The successful invasion of exotic species may alter habitats and displace native species over time, leading to extirpation or extinction of natives like the spineflower (CBI 2000, Sapphos 2000, CDFG 2001, Sapphos 2001).

Development could negatively impact known spineflower populations because non-natives have been found to invade and become established after repeated burnings, disking or clearing of vegetation for fire protection, or following periods of drought and overgrazing, possible side effects of nearby human habitation. Non-natives may alter hydrological and biochemical cycles, disrupt natural fire regimes, and alter soil fertility within and adjacent to proposed development. Proposed development also threatens to fragment known spineflower populations, which could increase the likelihood of invasion by exotics. In light of these potential indirect effects, it has been determined that non-native invasive plant species pose a serious threat to the spineflower (CBI 2000, Sapphos 2000, CDFG 2001, Sapphos 2001).

(b) Non-Native Invasive Animal Species

An increase in domestic dogs and cats from adjacent development could indirectly affect the spineflower, because these non-native domestic predators could decrease the native rodent populations that may act as spineflower seed dispersal agents. In addition, introduction of the Argentine ant could adversely affect spineflower located near proposed development. These ants have the potential to negatively impact native ant populations, which may be secondary pollinators and seed dispersers of the spineflower. Argentine ants also rapidly invade disturbed areas, and sometimes even undisturbed areas, within stands of native habitat that are adjacent to development. Proposed development could introduce this exotic species into spineflower habitat, thus posing a threat to the continued viability of the plant. Therefore, it has been determined that non-native invasive animals have a potential to adversely affect known spineflower populations (CBI 2000, Sapphos 2000, CDFG 2001, Sapphos 2001).

(c) Vegetation Clearing

When native vegetation is cleared for fire protection along the boundary between proposed development and known spineflower populations, or for the creation of roads or trails, non-native plant species may be provided an opportunity to colonize gaps or bare areas. When vegetation is removed and soil is scraped,

non-natives are given the opportunity to become established. As discussed above, non-natives often out-compete native species like spineflower. This risk factor is considered relatively high because of its relationship to invasive plants and the uncertainty of controlling this factor. (CBI 2000, CDFG 2001).

(d) Trampling

Human trampling can damage individual spineflower plants and alter the spineflower's ecosystem. Trampling associated with proposed development can create gaps in vegetation and thus allow exotic, non-native species to become established; it can cause an increase in soil compaction; and it can lead to soil erosion. The recovery of spineflower, once trampled, is hard to predict. Some effects, like soil compaction or erosion, can be difficult and time-consuming to reverse. This edge effect, therefore, represents a threat to the spineflower (CBI 2000).

(e) Changes in Hydrological Conditions

Spineflower can be adversely impacted by changes in surface and subsurface hydrological conditions (i.e., increased irrigation and runoff). Proposed development can remove native vegetation, increase runoff from roads and other paved surfaces, and result in an increase in ornamental landscaping and lawns which eventually lead to an increase in irrigation. These consequences can result in increased erosion and transport of particulate matter into known spineflower populations. Altered erosion, increased surface flows, and increased underground seepage can allow for the establishment of weedy non-native species and the invasion of Argentine ants. Changed hydrological conditions can alter seed bank characteristics and modify habitat for ground-dwelling fauna. Consequently, this risk factor poses a threat to the known spineflower populations (CBI 2000).

(f) Chemical Pollutants

The use of chemical pollutants during the development stage and by the residents of new development can decrease the number of plant pollinators; increase the existence of non-natives; and cause damage to, or the destruction of, native plants. Herbicide use can cause fragmentation of known spineflower populations, and insecticide use can result in pollution drift that can kill known spineflower populations. Fertilizers, especially nitrogen rich fertilizers, can promote the growth of non-native species, to the detriment of native species not adapted to high nitrogen environments. Thus, the use of chemicals near known spineflower populations can have an adverse indirect impact (CBI 2000, Sapphos 2000, Sapphos 2001).

(g) Increased Fire Frequency

Development near known spineflower populations can increase the possibility of fire because of human-related activities. Arson, or sparks from construction or utility maintenance activities, could lead to an increase in fires which indirectly may threaten the spineflower. The effect of fire on the spineflower is not yet known; however, under certain conditions a fire could damage a percentage of individual spineflower plants, or it could destroy an entire population. Direct scorching can create open areas, which are then susceptible to non-native plant and animal invasion. Colonization of an area by non-native grasses provides the fuel needed to start and maintain fires, increasing their frequency, extent, and intensity. Non-native plants tend to recover more quickly than native species, leading to their domination over natives like the spineflower. Consequently, this risk factor poses a threat to known spineflower populations (CBI 2000, Sapphos 2000, CDFG 2001, Sapphos 2001).

(h) Summary

The CBI report noted that these edge effects, or indirect impacts, pose various degrees of threat to spineflower plants depending on the distance of the plants to the edge of development. The report stated that literature on invasive non-native animals indicated that most adverse effects on spineflower as a result of these two factors are concentrated within 100-325 feet of the development edge. Literature reviewed on invasive non-native plants (as a result of vegetation clearing, increased fire frequency, or other disturbances) indicated that most impacts would occur within the first 80-100 feet, with a gradual decline in invasive species beyond 100 feet. Changes in hydrological regimes resulting in increased surface and subsurface runoff may have a zone of influence that extends up to 200 feet. The majority of pesticide drift from chemicals will extend less than 35 feet from the source while fertilizers, though typically localized, can be more widely dispersed through surface runoff or seepage. The effects of trampling are generally direct and limited to the area of impact.

The CBI report concluded that the ability of buffer areas to be effective in minimizing edge effects depends upon the width of the buffer between the development edge and spineflower populations. For chemicals, buffers need to be from 30-50 feet in width to be moderately effective; for invasive plants, vegetation clearing, hydrological changes, and trampling, buffers need to be at least 80-100 feet to be moderately effective; and buffers need to be at least 200 feet in width to be moderately effective for invasive animals and increased fire frequency.

However, the CBI report also concluded that a number of other biological and geomorphological factors can influence the overall ability of buffers at varying widths to minimize indirect impacts of development

on spineflower populations. These factors included the size and juxtaposition of spineflower preserves to developed areas; the degree of fragmentation or continuity between preserved spineflower populations and to open space areas; the percentage of non-native vegetation to native vegetation in proposed buffer and preserve areas; soil chemistry and type; and the disturbance history of proposed buffers and preserves. In addition, the implementation of various short-term and long-term management actions to buffers and the development edge can result in buffers being more effective at shorter widths, up to a point, than if the actions were not taken. Depending on the degree to which other factors discussed above are present, and to the extent management actions are implemented, buffers can be effective at widths of 80 to 200 feet.

Based on this analysis of indirect impacts to spineflower and other sensitive plants, all seven indirect impacts/edge effects are considered significant in connection with the proposed development of Newhall Ranch, absent implementation of the Newhall Ranch mitigation program described below.

2.6.6.5 Cumulative Impacts

The San Fernando Valley spineflower is known to exist on several locations within Ahmanson Ranch, in Ventura County, and on several locations within the applicant's property holdings. Those property holdings consist of three locations within the Newhall Ranch Specific Plan site, namely, Grapevine Mesa, Airport Mesa and San Martinez, and two off-site locations known as the Commerce Center and Magic Mountain (see **Figure 2.6-3, above**). Given the distance of these sites from each other (i.e., Ahmanson Ranch, Newhall Ranch, Commerce Center, and Magic Mountain site), potential impacts created by human disturbance on one of the sites is not expected to impact spineflower populations on any other site. However, because the spineflower's range is limited, significant impacts to individual spineflower populations due to development are considered cumulatively significant if unmitigated.

2.6.7 MITIGATION MEASURES

2.6.7.1 Introduction

This section sets forth mitigation measures that the County and applicant propose to undertake to conserve the state-listed San Fernando Valley spineflower, in conjunction with the mitigation of other sensitive plant species. This mitigation program consists of:

(a) The existing Specific Plan EIR mitigation measures, which were adopted by the County's Board of Supervisors on March 23, 1999, and which were found by the Court to be adequate under CEQA in the Newhall Ranch litigation;

(b) The revised Specific Plan EIR mitigation measures contained in the Newhall Ranch Final Additional Analysis (October 2001); and

(c) The additional Specific Plan EIR mitigation measures, which the applicant has agreed to be imposed in the event that the Newhall Ranch Specific Plan is re-approved.

This mitigation program also includes a County-imposed mitigation measure requiring preparation of a tiered project-level EIR in conjunction with each project-specific tentative tract map for the Newhall Ranch Specific Plan (see, Specific Plan EIR Mitigation Measure 4.11-17). While this measure was imposed by the County to ensure that water needed for each proposed subdivision map is confirmed as part of the County's subdivision map application process, the measure applies with equal force to all potentially significant environmental effects, including project-specific impacts on sensitive biological resources. For example, for residential projects undertaken pursuant to a specific plan where an EIR has been prepared, CEQA Guidelines §15182 provides a partial exemption to the preparation of any further EIRs or negative declarations if the proposed project conforms with that specific plan and if it meets other specified requirements. However, notwithstanding the Section 15182 specific plan partial exemption, EIRs will be required for each Newhall Ranch tentative tract map application (see, Mitigation Measure 4.11-17).

It is also anticipated that each project-specific EIR for the Newhall Ranch Specific Plan will impose conditions and mitigation measures that are beyond those identified in the Newhall Ranch Final EIR and the Newhall Ranch Final Additional Analysis. For that reason, it is further anticipated that the standards set forth below are *minimum* standards subject to change or increase after completion of each project-specific EIR, including the required, updated sensitive plant and animal surveys for each subdivision map, and the consultation and project-level permitting requirements imposed by federal and state agencies, as appropriate (see, revised Specific Plan EIR Mitigation Measure 4.6-53, 4.6-59).

2.6.7.2 Existing Specific Plan EIR Mitigation Measures

It should be noted that the Court in the Newhall Ranch litigation rejected claims that the Newhall Ranch Final EIR "improperly deferred" the analysis and mitigation of the Specific Plan's biological impacts. Instead, the Court found that the mitigation requirements discussed in the Final EIR "include performance standards that can be utilized to hold [the County] to compliance with the EIR, and that adequately inform the public of the nature of the proposed mitigation designed to reduce the significant impacts on biological resources . . . during the development of the [Specific Plan]."[11] The Court also

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11 *See*, Court's Statement of Decision, filed August 3, 2000, pp. 14, 16.

found that the Specific Plan's "environmental consequences . . . to biological resources on site have been explored . . . and mitigation measures adopted with performance standards specific enough to demonstrate the feasibility of the mitigation that is proposed."[12] Based on the review conducted, and the Court's findings regarding of the adequacy of the existing Specific Plan EIR mitigation measures relating to sensitive biological resources, the County finds that the existing mitigation measures remain valid, feasible, enforceable and beyond further legal challenge. However, as discussed below, two mitigation measures were revised in conjunction with the Newhall Ranch Final Additional Analysis (October 2001), because that document identified the presence of the spineflower at the Grapevine location on the Specific Plan site.

2.6.7.3 Revised Specific Plan EIR Mitigation Measures

This section highlights the two revised EIR mitigation measures, which were previously identified in the Newhall Ranch Final Additional Analysis (October 2001), and which were revised to strengthen the Newhall Ranch mitigation program for rare, threatened or endangered animal or plant species, including the spineflower. The project applicant agreed to revise the two EIR mitigation measures because of the presence of spineflower on Newhall Ranch, and in response to County staff recommendations and public comments. The revised mitigation measures are shown below (revisions are shown in ~~strikeout~~ and **bold** text). In addition, revised Mitigation Measure 4.6-59 has been replaced by a new revised Mitigation Measure 4.6-59, which imposes additional consultation requirements beyond those specified in the prior measure.

Updated Survey Requirements at the Subdivision Map Level

"4.6-53 If, at the time **any** subdivisions **map** proposing construction ~~are~~ **is** ~~processed~~submitted, the County determines through an Initial Study, **or otherwise,** that there may be rare, threatened or endangered, **plant or animal** species on the property ~~being~~ **to be** subdivided, then, **in addition to the prior surveys conducted on the Specific Plan site to define the presence or absence of sensitive habitat and associated species, ~~a~~current, updated** site-specific surveys **for all such animal or plant species** shall be conducted in accordance with the consultation requirements set forth in Mitigation Measure 4.6-59 **within those areas of the Specific Plan where such animal or plant species occur or are likely to occur.**

The site-specific surveys shall include the unarmored three-spine stickleback, the arroyo toad, the Southwestern pond turtle, the California red-legged frog, the southwestern willow flycatcher, the least Bell's vireo, the San Fernando Valley spineflower and any other rare, sensitive, threatened, or endangered plant or animal species occurring, or likely to occur, on the property to be subdivided. All site-specific surveys shall be conducted during appropriate seasons by qualified botanists or qualified wildlife biologists in a

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12 *See*, Court's Statement of Decision, filed August 3, 2000, pp. 17.

manner that will locate any rare, sensitive, threatened, or endangered animal or plant species that may be present. To the extent there are applicable protocols published by either the United States Fish and Wildlife Service or the California Department of Fish and Game, all such protocols shall be followed in preparing the updated site-specific surveys.

All site-specific survey work shall be documented in a separate report containing at least the following information: (a) project description, including a detailed map of the project location and study area; (b) a description of the biological setting, including references to the nomenclature used and updated vegetation mapping; (c) detailed description of survey methodologies; (d) dates of field surveys and total person-hours spent on the field surveys; (e) results of field surveys, including detailed maps and location data; (f) an assessment of potential impacts; (g) discussion of the significance of the rare, threatened or endangered animal or plant populations found in the project area, with consideration given to nearby populations and species distribution; (h) mitigation measures, including avoiding impacts altogether, minimizing or reducing impacts, rectifying or reducing impacts through habitat restoration, replacement or enhancement, or compensating for impacts by replacing or providing substitute resources or environments, consistent with CEQA (Guidelines §15370); (i) references cited and persons contacted; and (j) other pertinent information, which is designed to disclose impacts and mitigate for such impacts." ~~**to define the presence or absence of such species and any necessary mitigation measures shall be determined and applied."**~~

Agency Consultation/Permit Requirements and Imposition of Additional Mitigation

4.6-59 Consultation shall occur with **the County of Los Angeles ("County") and California Department of Fish and Game ("CDFG") at each of the following milestones:**

1) **Before Surveys.** Prior to conducting sensitive plant or animal surveys at the Newhall Ranch subdivision map level, the applicant, or its designee, shall consult with the County and CDFG for purposes of establishing and/or confirming the appropriate survey methodology to be used.

2) **After Surveys.** After completion of sensitive plant or animal surveys at the subdivision map level, draft survey results shall be made available to the County and CDFG within sixty (60) calendar days after completion of the field survey work.

3) **Subdivision Map Submittal**. Within thirty (30) calendar days after the applicant, or its designee, submits its application to the County for processing of a subdivision map in the Mesas Village or Riverwood Village, a copy of the submittal shall be provided to CDFG. In addition, the applicant, or its designee, shall schedule a consultation meeting with the County and CDFG for purposes of obtaining comments and input on the proposed subdivision map submittal. The consultation meeting shall take place at least thirty (30) days prior to the submittal of the proposed subdivision map to the County.

4) **Development/Disturbance and Further Mitigation**. Prior to any development within, or disturbance to, habitat occupied by rare, threatened, or endangered plant or animal species, or to any portion of the Spineflower Mitigation Area Overlay, as defined below, all required permits shall be obtained from both USFWS and CDFG, as applicable. It is further anticipated that the federal and state permits will impose conditions and mitigation measures required by federal and state law that are beyond those identified in the Newhall Ranch Final EIR (March 1999), the Newhall Ranch DAA (April 2001) and the Newhall Ranch Revised DAA (2002). It is also anticipated that conditions and mitigation measures required by federal and state law for project-related impacts on endangered,

rare or threatened species and their habitat will likely require changes and revisions to Specific Plan development footprints, roadway alignments, and the limits, patterns and techniques associated with project-specific grading at the subdivision map level.

2.6.7.4 Additional Specific Plan EIR Mitigation Measures

Additional mitigation measures have been identified to ensure the conservation of the spineflower on Newhall Ranch. The project applicant has agreed to these additional mitigation measures in the event that the County re-approves the Specific Plan.

The mitigation measures, identified below, follow the same numbering used for the "Biota" mitigation measures set forth in the Newhall Ranch Final EIR, Final Additional Analysis and the revised Newhall Ranch Mitigation Monitoring Program for the Specific Plan.

Spineflower Mitigation Area Overlay

4.6-65 In order to facilitate the conservation of the spineflower on the Newhall Ranch Specific Plan site, the applicant, or its designee, shall, concurrent with Specific Plan approval, agree to the identified special study areas shown below in **Figure 2.6-8, Spineflower Mitigation Area Overlay**. The applicant, or its designee, further acknowledges that, within and around the Spineflower Mitigation Area Overlay (**Figure 2.6-8**), changes will likely occur to Specific Plan development footprints, roadway alignments, and the limits, patterns and techniques associated with project-specific grading at the subdivision map level. The applicant, or its designee, shall design subdivision maps that are responsive to the characteristics of the spineflower and all other endangered plant species that may be found on the Specific Plan site.

Spineflower Preserves

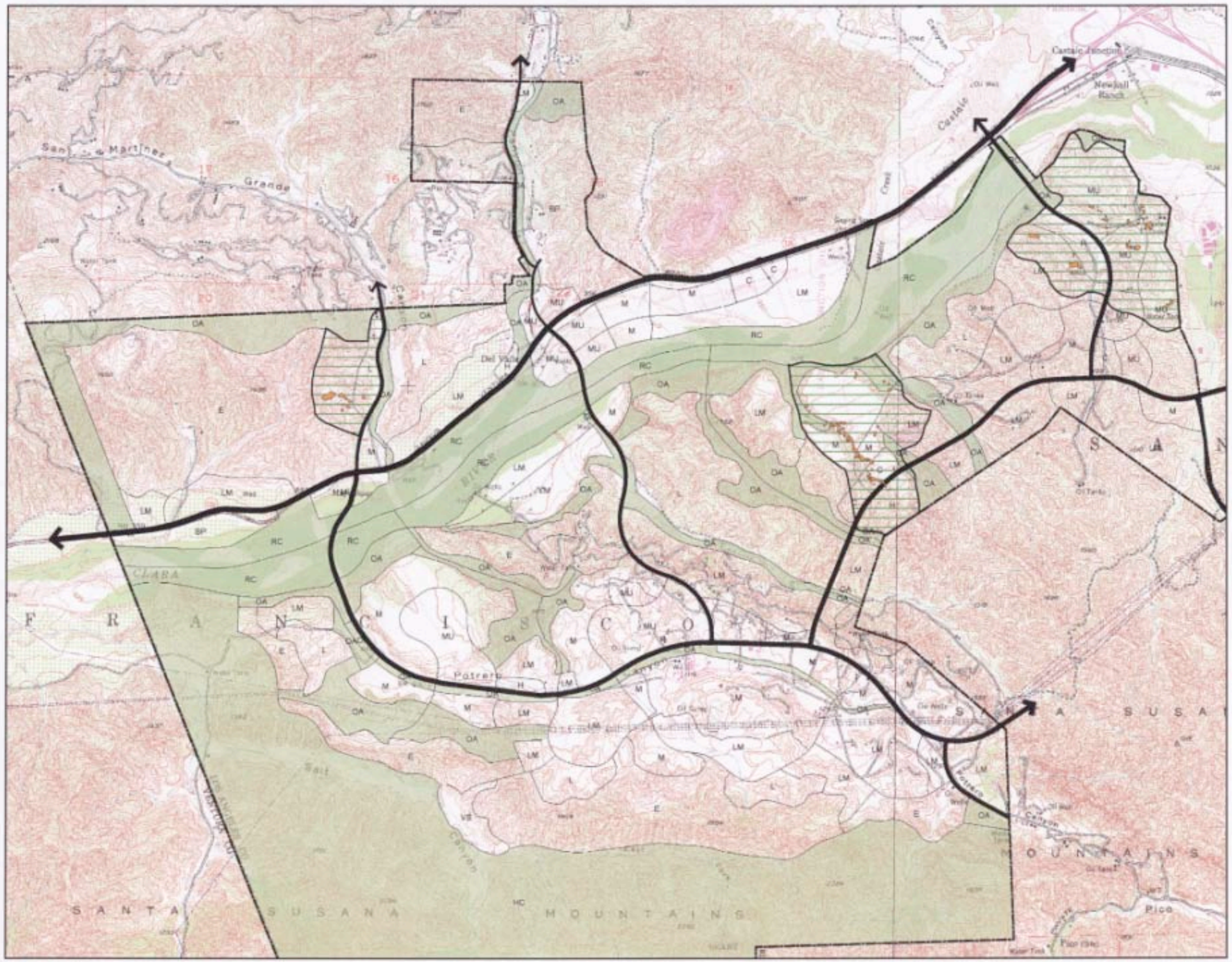
4.6-66 Direct impacts to known spineflower populations within the Newhall Ranch Specific Plan area shall be avoided or minimized through the establishment of one or more on-site preserves that are configured to ensure the continued existence of the species in perpetuity. Preserve(s) shall be delineated in consultation with the County and CDFG, and will likely require changes and revisions to Specific Plan development footprints for lands within and around the Spineflower Mitigation Area Overlay (**Figure 2.6-8**).

Delineation of the boundaries of Newhall Ranch spineflower preserve(s) for the entire Specific Plan area shall be completed in conjunction with approval of the first Newhall Ranch subdivision map filed in either the Mesas Village, or that portion of Riverwood Village in which the San Martinez spineflower population occurs.

A sufficient number of known spineflower populations shall be included within the Newhall Ranch spineflower preserve(s) in order to ensure the continued existence of the species in perpetuity. The conservation of known spineflower populations shall be established in consultation with the County and CDFG, and as consistent with standards governing issuance of an incidental take permit for spineflower pursuant to Fish and Game Code section 2081, subdivision (b).

In addition to conservation of known populations, spineflower shall be introduced in appropriate habitat and soils in the Newhall Ranch preserve(s). The creation of introduced populations shall require seed collection and/or top soil at impacted spineflower locations and nursery propagation to increase seed and sowing of seed. The seed collection activities, and the maintenance of the bulk seed repository, shall be approved in advance by the County and CDFG.

Once the boundaries of the Newhall Ranch spineflower preserve(s) are delineated, the project applicant, or its designee, shall be responsible for conducting a spineflower population census within the Newhall Ranch spineflower preserve(s) annually for 10 years. (These census surveys shall be in addition to the surveys required by Mitigation Measure 4.6-53, above.) The yearly spineflower population census documentation shall be submitted to the County and CDFG, and maintained by the project applicant, or its designee. If there are any persistent population declines documented in the annual population census reports, the project applicant, or its designee, shall be responsible for conducting an assessment of the ecological factor(s) that are likely responsible for the decline, and implement management activity or



NEWHALL RANCH

LEGEND

- LOS ANGELES SUNFLOWER
- SPINEFLOWER LOCATION
- SPECIAL STUDY MITIGATION OVERLAY

LAND USE CATEGORIES

- E — ESTATE RESIDENTIAL
- L — LOW DENSITY RESIDENTIAL
- LM — LOW-MEDIUM DENSITY RESIDENTIAL
- M — MEDIUM DENSITY RESIDENTIAL
- H — HIGH DENSITY RESIDENTIAL
- C — COMMERCIAL
- BP — BUSINESS PARK
- MU — MIXED USE
- VS — VISITOR SERVING
- OA — OPEN AREA
- RC — RIVER CORRIDOR
- HC — HIGH COUNTRY
- ROADS

FORMA

NORTH

Feet: 0 625 1,250 2,500

Meters: 0 140 280 560

Figure 2.6-8

SPINEFLOWER MITIGATION AREA OVERLAY

activities to address these factors where feasible. In no event, however, shall project-related activities jeopardize the continued existence of the Newhall Ranch spineflower populations. If a persistent population decline is documented, such as a trend in steady population decline that persists for a period of 5 consecutive years, or a substantial drop in population is detected over a 10-year period, spineflower may be introduced in consultation with CDFG in appropriate habitat and soils in the Newhall Ranch preserve(s), utilizing the bulk spineflower seed repository, together with other required management activity or activities. These activities shall be undertaken by a qualified botanist/biologist, subject to approval by the County and CDFG. The project applicant, or its designee, shall be responsible for the funding and implementation of the necessary management activity or activities, including monitoring, as approved by the County and CDFG.

Annual viability reports shall be submitted to the County and CDFG for 10 years following delineation of the Newhall Ranch spineflower preserve(s) to ensure long-term documentation of the spineflower population status within the Newhall Ranch preserve(s). In the event annual status reports indicate the spineflower population within the Newhall Ranch preserve(s) is not stable and viable 10 years following delineation of the spineflower preserve(s), the project applicant, or its designee, shall continue to submit annual status reports to the County and CDFG for a period of no less than an additional 5 years.

Connectivity, Reserve Design and Buffers

4.6-67 Indirect impacts associated with the interface between the preserved spineflower populations and planned development within the Newhall Ranch Specific Plan shall be avoided or minimized by establishing open space connections with Open Area, River Corridor, or High Country land use designations. In addition, buffers (i.e., setbacks from developed, landscaped or other use areas) shall be established around portions of the delineated preserve(s) not connected to Open Area, the River Corridor or the High Country land use designations. The open space connections and buffer configurations shall take into account local hydrology, soils, existing and proposed adjacent land uses, the presence of non-native invasive plant species, and seed dispersal vectors.

Open space connections shall be configured such that the spineflower preserves are connected to Open Area, River Corridor, or High Country land use designations to the extent practicable. Open space connections shall be of adequate size and configuration to achieve a moderate to high likelihood of effectiveness in avoiding or minimizing indirect impacts (e.g., invasive plants, increased fire frequency, trampling, chemicals, etc.) to the spineflower preserve(s). Open space connections for the spineflower preserve(s) shall be configured in consultation with the County and CDFG. Open space connections for the spineflower preserve(s) shall be established for the entire Specific Plan area in conjunction with approval of the first Newhall Ranch subdivision map filed in either the Mesa Village, or that portion of the Riverwood Village in which the San Martinez spineflower location occurs.

For preserves and/or those portions of preserves not connected to Open Area, River Corridor, or High Country land use designations, buffers shall be established at variable distances of between 80 and 200 feet from the edge of development to achieve a moderate to high likelihood of effectiveness in avoiding or minimizing indirect impacts (e.g., invasive plants, increased fire frequency, trampling, chemicals, etc.) to the spineflower preserve(s). The buffer size/configuration shall be guided by the analysis set forth in the "*Review of Potential Edge Effects on the San Fernando Valley Spineflower*," prepared by Conservation Biology Institute, January 19, 2000, and other sources of scientific information and analysis, which are available at the time the preserve(s) and buffers are established. Buffers for the spineflower preserve(s) shall be configured in consultation with the County and CDFG for the entire Specific Plan area. Buffers for the spineflower preserve(s) shall be established in conjunction with approval of the first Newhall Ranch subdivision map filed in either the Mesa Village, or that portion of the Riverwood Village in which the San Martinez spineflower location occurs.

Buffer configurations may include the width of any adjacent roadway system or associated rights-of-way, because roadways and rights-of-way can afford some protection to the spineflower preserve(s) and contribute to the effectiveness of the buffers by further avoiding or minimizing the potential indirect impacts of future development. In designing buffers that include roads, the design shall take into account edge effects from the roads by assessing, among other factors, the likelihood of disturbance based upon topography, road runoff and adjacent vegetation types.

The project applicant, or its designee, shall be responsible for revegetating open space connections and buffer areas of the Newhall Ranch spineflower preserve(s) to mitigate temporary impacts due to grading that will occur within portions of those open space connections and buffer areas. The impacted areas shall be reseeded with a native seed mix to prevent erosion, reduce the potential for invasive non-native plants, and maintain functioning habitat areas within the buffer area. Revegetation seed mix shall be reviewed and approved by the County and CDFG.

Preserve Protection/Fencing

4.6-68 To protect the preserved Newhall Ranch spineflower populations, and to further reduce potential impacts to such populations due to unrestricted access, the project applicant, or its designee, shall erect and maintain temporary orange fencing and prohibitive signage around the Newhall Ranch preserve(s), open space connections and buffer areas, which are adjacent to areas impacted by proposed development prior to and during all phases of construction. The areas behind the temporary fencing shall not be used for the storage of any equipment, materials, construction debris or anything associated with construction activities.

Following the final phase of construction of any Newhall Ranch subdivision map adjacent to the Newhall Ranch spineflower preserve(s), the project applicant, or its designee, shall install and maintain permanent fencing along the subdivision tract bordering the preserve(s). Permanent signage shall be installed on the fencing along the preservation boundary to indicate that the fenced area is a biological preserve, which contains protected species and habitat, that access is restricted, and that trespassing and fuel modification are prohibited within the area. The permanent fencing shall be designed to allow wildlife movement.

The plans and specifications for the permanent fencing and signage shall be approved by the County and CDFG prior to the final phase of construction of any Newhall Ranch subdivision map adjacent to a Newhall Ranch spineflower preserve(s).

Preserve Protection/Hydrological Alterations

4.6-69 Indirect impacts resulting from changes to hydrology (i.e., increased water runoff from surrounding development) at the interface between spineflower preserve(s) and planned development within the Newhall Ranch Specific Plan shall be avoided or mitigated to below a level of significance.

Achievement of this standard will be met through the documented demonstration by the project applicant, or its designee, that the storm drain system achieves pre-development hydrological conditions for the Newhall Ranch spineflower preserve(s). To document such a condition, the project applicant, or its designee, shall prepare a study of the pre- and post-development hydrology, in conjunction with Newhall Ranch subdivision maps adjacent to spineflower preserve(s). The study shall be used in the design and engineering of a storm drain system that achieves pre-development hydrological conditions. The study must conclude that proposed grade changes in development areas beyond the buffers will maintain pre-development hydrology conditions within the preserve(s). The study shall be approved by the Planning Director of the County, and the resulting conditions confirmed by CDFG.

The storm drain system for Newhall Ranch subdivision maps adjacent to any spineflower preserves must be approved by the County prior to the initiation of any grading activities.

Road Construction Measures

4.6-70 Consistent with the Spineflower Mitigation Area Overlay reflected in Mitigation Measure 4.6-65, direct and indirect impacts to known Newhall Ranch spineflower populations associated with proposed road construction or modifications to existing roadways shall be further assessed for proposed road construction at the Newhall Ranch subdivision map level, in conjunction with the tiered EIR required for each subdivision map. To avoid or substantially lessen impacts to known spineflower populations, Specific Plan roadways shall be redesigned or realigned, to the extent practicable, to achieve the spineflower preserve and connectivity/preserve design/buffer standards set forth in Mitigation Measures 4.6-66 and 4.6-67. The project applicant, or its designee, acknowledges that that road redesign and re-alignment is a feasible means to avoid or substantially lessen potentially significant impacts on the now known Newhall Ranch spineflower populations. Road redesign or alignments to be considered at the subdivision map level include:

(a) Commerce Center Drive;

(b) Magic Mountain Parkway;

(c) Chiquito Canyon Road;

(d) Long Canyon Road;

(e) San Martinez Grande Road;

(f) Potrero Valley Road;

(g) Valencia Boulevard; and

(h) Any other or additional roadways that have the potential to result in significant impacts to known Newhall Ranch spineflower populations.

Engineering, Design and Grading Modifications

4.6-71 Consistent with the Spineflower Mitigation Area Overlay reflected in Mitigation Measure 4.6-65, direct and indirect impacts to known Newhall Ranch spineflower populations shall be further assessed at the Newhall Ranch subdivision map level, in conjunction with the required tiered EIR process. To avoid or substantially lessen impacts to known spineflower populations at the subdivision map level, the project applicant, or its designee, may be required to adjust Specific Plan development footprints, roadway alignments, and the limits, patterns and techniques associated with project-specific grading to achieve the spineflower preserve and connectivity/preserve design/buffer standards set forth in Mitigation Measures 4.6-66 and 4.6-67 for all future Newhall Ranch subdivision maps that encompass identified spineflower populations.

Fire Management Plan

4.6-72 A Fire Management Plan shall be developed, in accordance with the adopted Newhall Ranch Resource Management Plan (RMP), to protect and manage the Newhall Ranch spineflower preserve(s) and buffers.

The Fire Management Plan shall be completed by the project applicant, or its designee, in conjunction with approval of any Newhall Ranch subdivision map adjacent to a spineflower preserve.
The final Fire Management Plan shall be approved by the County of Los Angeles Fire Department through the processing of subdivision maps.

Under the final Fire Management Plan, limited fuel modification activities within the spineflower preserves will be restricted to selective thinning with hand tools to allow the maximum preservation of Newhall Ranch spineflower populations. No other fuel modification or clearance activities shall be allowed in the Newhall Ranch spineflower preserve(s). Controlled burning may be allowed in the future within the Newhall Ranch preserve(s) and buffers, provided that it is based upon a burn plan approved by the County of Los Angeles Fire Department and CDFG. The project applicant, or its designee, shall also be responsible for annual maintenance of fuel modification zones, including, but not limited to, removal of undesirable non-native plants, revegetation with acceptable locally indigenous plants and clearing of trash and other debris in accordance with the County of Los Angeles Fire Department.

Water Flow Diversion and Management

4.6-73 At the subdivision map level, the project applicant, or its designee, shall design and implement project-specific design measures to minimize changes in surface water flows to the Newhall Ranch spineflower preserve(s) for all Newhall Ranch subdivision maps adjacent to the preserve(s) and buffers. Prior to issuance of a grading permit for each such subdivision map, the project applicant, or its designee, shall submit for approval to the County plans and specifications that ensure implementation of the following design measures:

(a) During construction activities, drainage ditches, piping or other approaches will be put in place to convey excess storm water and other surface water flows away from the Newhall Ranch spineflower preserve(s) and connectivity/preserve design/buffers, identified in Mitigation Measures 4.6-66 and 4.6-67;

(b) Final grading and drainage design will be developed that does not change the current surface and subsurface hydrological conditions within the preserve(s);

(c) French drains will be installed along the edge of any roadways and fill slopes that drain toward the preserve(s);

(d) Roadways will be constructed with slopes that convey water flows within the roadway easements and away from the preserve(s);

(e) Where manufactured slopes drain toward the preserve(s), a temporary irrigation system would be installed to the satisfaction of the County in order to establish the vegetation on the slope area(s). This system shall continue only until the slope vegetation is established and self-sustaining;

(f) Underground utilities will not be located within or through the preserve(s). Drainage pipes installed within the preserve(s) away from spineflower populations to convey surface or subsurface water away from the populations will be aligned to avoid the preserve(s) to the maximum extent practicable; and

(g) Fencing or other structural type barriers that will be installed to reduce intrusion of people or domestic animals into the preserve(s) shall incorporate footing designs that minimize moisture collection.

Biological Monitor

4.6-74 A knowledgeable, experienced botanist/biologist, subject to approval by the County and CDFG, shall be required to monitor the grading and fence/utility installation activities that involve earth movement adjacent to the Newhall Ranch spineflower preserve(s) to avoid the incidental take of conserved plant species, and to avoid disturbance of the preserve(s). The biological monitor will conduct bi-weekly inspections of the project site during such grading activities to ensure that the mitigation measures provided in the adopted Newhall Ranch Mitigation Monitoring Program (Biota section) are implemented and adhered to.

Monthly monitoring reports, as needed, shall be submitted to the County verifying compliance with the mitigation measures specified in the adopted Newhall Ranch Mitigation Monitoring Program (Biota section).

The biological monitor will have authority to immediately stop any such grading activity that is not in compliance with the adopted Newhall Ranch Mitigation Monitoring Program (Biota section), and to take reasonable steps to avoid the take of, and minimize the disturbance to, spineflower populations within the preserve(s).

Construction Impact Avoidance Measures

4.6-75 The following measures shall be implemented to avoid and minimize impacts to Newhall Ranch spineflower populations during all phases of project construction:

(a) **Water Control.** Watering of the grading areas would be controlled to prevent discharge of construction water into the Newhall Ranch preserve(s) or on ground sloping toward the preserve(s). Prior to the initiation of grading operations, the project applicant, or its designee, shall submit for approval to the County an irrigation plan describing watering control procedures necessary to prevent discharge of construction water into the Newhall Ranch preserve(s) and on ground sloping toward the preserve(s).

(b) **Storm Water Flow Redirection.** Diversion ditches would be constructed to redirect storm water flows from graded areas away from the Newhall Ranch preserve(s). To the extent practicable, grading of areas adjacent to the preserve(s) would be limited to spring and summer months (May through September) when the probability of rainfall is lower. Prior to the initiation of grading operations, the project applicant, or its designee, would submit for approval to the County a storm water flow redirection plan that demonstrates the flow of storm water away from the Newhall Ranch spineflower preserve(s).

(c) **Treatment of Exposed Graded Slopes.** Graded slope areas would be trimmed and finished as grading proceeds. Slopes would be treated with soil stabilization measures to minimize erosion. Such measures may include seeding and planting, mulching, use of geotextiles and use of stabilization mats. Prior to the initiation of grading operations, the project applicant, or its designee, would submit for approval to the County the

treatments to be applied to exposed graded slopes that would ensure minimization of erosion.

Reassessment Requirement

4.6-76 In conjunction with submission of the first Newhall Ranch subdivision map in either Mesas Village or that portion of Riverwood Village in which the San Martinez spineflower location occurs, the project applicant, or its designee, shall reassess project impacts to the spineflower populations using subdivision mapping data, baseline data from the Newhall Ranch Final EIR and data from the updated plant surveys (see, Specific Plan EIR Mitigation Measure 4.6-53).

This reassessment shall take place during preparation of the required tiered EIR for each subdivision map. If the reassessment results in the identification of new or additional impacts to Newhall Ranch spineflower populations, which were not previously known or identified, the mitigation measures set forth in this program, or a Fish and Game Code section 2081 permit(s) issued by CDFG, shall be required, along with any additional mitigation required at that time.

Newhall Ranch Monitoring and Management

4.6-77 Impacts to the preserved Newhall Ranch spineflower populations shall require a monitoring and management plan, subject to the approval of the County. The applicant shall consult with CDFG with respect to preparation of the Newhall Ranch spineflower monitoring/management plan. This plan shall be in place when the preserve(s) and connectivity/preserve design/buffers are established (see Mitigation Measures 4.6-66 and 4.6-67). The criteria set forth below shall be included in the plan.

Monitoring. The purpose of the monitoring component of the plan is to track the viability of the Newhall Ranch spineflower preserve(s) and its populations, and to ensure compliance with the adopted Newhall Ranch Mitigation Monitoring Program (Biota section).
The monitoring component of the plan shall investigate and monitor factors such as population size, growth or decline, general condition, new impacts, changes in associated vegetation species, pollinators, seed dispersal vectors and seasonal responses. Necessary management measures will be identified. The report results will be sent annually to the County, along with photo documentation of the assessed site conditions.

The project applicant, or its designee, shall contract with a qualified botanist/biologist, approved by the County, with the concurrence of CDFG, to conduct quantitative monitoring over the life of the Newhall Ranch Specific Plan. The botanist/biologist shall have a minimum of three years experience with established monitoring techniques and familiarity with southern California flora and target taxa. Field surveys of the Newhall Ranch spineflower preserve(s) will be conducted each spring. Information to be obtained will include: (a) an estimate of the numbers of spineflowers in each population within the preserve(s); (b) a map of the extent of occupied habitat at each population; (c) establishment of photo monitoring points to aid in documenting long-term trends in habitat; (d) aerial photographs of the preserved areas at five-year intervals; (e) identification of significant impacts that may have occurred or problems that need attention, including invasive plant problems, weed problems and fencing or signage repair; and (f) overall compliance with the adopted mitigation measures.

For a period of three years from Specific Plan re-approval, all areas of potential habitat on the Newhall Ranch site will be surveyed annually in the spring with the goal of identifying previously unrecorded spineflower populations. Because population size and distribution

limits are known to vary depending on rainfall, annual surveys shall be conducted for those areas proposed for development in order to establish a database appropriate for analysis at the project-specific subdivision map level (rather than waiting to survey immediately prior to proceeding with the project-specific subdivision map process). In this way, survey results gathered over time (across years of varying rainfall) will provide information on ranges in population size and occupation. New populations, if they are found, will be mapped and assessed for inclusion in the preserve program to avoid impacts to the species.

Monitoring/Reporting. An annual report will be submitted to the County and CDFG by December 31st of each year. The report will include a description of the monitoring methods, an analysis of the findings, effectiveness of the mitigation program, site photographs and adoptive management measures, based on the findings. Any significant adverse impacts, signage, fencing or compliance problems identified during monitoring visits will be reported to the County and CDFG for corrective action by the project applicant, or its designee.

Management. Based on the outcome of ongoing monitoring and additional project-specific surveys addressing the status and habitat requirements of the spineflower, active management of the Newhall Ranch spineflower preserve(s) will be required in perpetuity. Active management activities will be triggered by a downward population decline over 5 consecutive years, or a substantial drop in population over a 10-year period following County re-approval of the Specific Plan. Examples of management issues that may need to be addressed in the future include, but are not limited to, control of exotic competitive non-native plant species, herbivory predation, weed control, periodic controlled burns or fuel modification compliance.

After any population decline documented in the annual populations census following County re-approval of the Specific Plan, the project applicant, or its designee, shall be responsible for conducting an assessment of the ecological factor(s) that are likely responsible for the decline, and implement management activity or activities to address these factors where feasible. If a persistent population decline is documented, such as a trend in steady population decline persistent for a period of 5 consecutive years, or a substantial drop in population detected over a 10-year period, spineflower may be introduced in appropriate habitat and soils in the Newhall Ranch preserve(s), utilizing the bulk spineflower seed repository, together with other required management activity or activities. These activities shall be undertaken by a qualified botanist/biologist, subject to approval by the County with the concurrence of CDFG. The project applicant, or its designee, shall be responsible for the funding and implementation of the necessary management activity or activities, as approved by the County and CDFG.

The length of the active management components set forth above shall be governed by attainment of successful management criteria set forth in the plan rather than by a set number of years.

Translocation/Reintroduction Program

4.6-78 To the extent project-related direct and indirect significant impacts on spineflower cannot be avoided or substantially lessened through establishment of the Newhall Ranch spineflower preserve(s), and other avoidance, minimization, or other compensatory mitigation measures, a translocation and reintroduction program may be implemented in consultation with CDFG to further mitigate such impacts. Direct impacts (i.e., take) to occupied spineflower areas shall be fully mitigated at a 4:1 ratio. Impacts to occupied spineflower areas caused by significant indirect effects shall be mitigated at a 1:1 ratio.

Introduction of new spineflower areas will be achieved through a combination of direct seeding and translocation of the existing soil seed bank that would be impacted by grading. Prior to any development within, or disturbance to, spineflower populations, on-site and off-site mitigation areas shall be identified and seed and top soil shall be collected. One-third of the collected seed shall be sent to the Rancho Santa Ana Botanical Garden for storage. One third of the seed shall be sent to the USDA National Seed Storage Lab in Fort Collins, Colorado for storage. One third shall be used for direct seeding of the on-site and off-site mitigation areas.

Direct seeding. Prior to the initiation of grading, the project applicant, or its designee, shall submit to the County a program for the reintroduction of spineflower on Newhall Ranch. The reintroduction program shall include, among other information: (a) location map with scale; (b) size of each introduction polygon; (c) plans and specifications for site preparation, including selective clearing of competing vegetation; (d) site characteristics; (e) protocol for seed collection and application; and (f) monitoring and reporting. The program shall be submitted to CDFG for input and coordination. The project applicant, or its designee, shall implement the reintroduction program prior to the initiation of grading. At least two candidate spineflower reintroduction areas will be created within Newhall Ranch and one candidate spineflower reintroduction area will be identified offsite. Both on-site and off-site reintroduction areas will be suitable for the spineflower in both plant community and soils, and be located within the historic range of the taxon. Success criteria shall be included in the monitoring/management plan, with criteria for the germination, growth, and production of viable seeds of individual plants for a specified period.

Although the reintroduction program is experimental at this stage, the County considers such a program to be a feasible form of mitigation at this juncture based upon available studies. Botanists/biologists familiar with the ecology and biology of the spineflower would prepare and oversee the reintroduction program.

Translocation. Prior to the initiation of grading, the project applicant, or its designee, shall submit to the County a translocation program for the spineflower. Translocation would salvage the topsoil of spineflower areas to be impacted due to grading. Salvaged spineflower soil seed bank would be translocated to the candidate spineflower reintroduction areas. The translocation program shall include, among other information: (a) location map with scale; (b) size of each translocation polygon; (c) plans and specifications for site preparation, including selective clearing of competing vegetation; (d) site characteristics; (e) protocol for topsoil collection and application; and (f) monitoring and reporting. The translocation program shall be submitted to CDFG for input and coordination. Translocation shall occur within the candidate spineflower reintroduction areas onsite and offsite. Successful criteria for each site shall be included in the monitoring/management plan/with criteria for the germination and growth to reproduction of individual plants for the first year a specified period.

Although the translocation program is experimental at this stage, the County considers such a program to be a feasible form of mitigation at this juncture based upon available studies. Botanists/biologists familiar with the ecology and biology of the spineflower would prepare and oversee the translocation program.

Ongoing Agricultural Activities

4.6-79 The project applicant, or its designee, shall engage in regular and ongoing consultation with the County and CDFG in connection with its ongoing agricultural operations in order to avoid or minimize significant impacts to the spineflower.

In addition, the project applicant, or its designee, shall provide 30 days advance written notice to the County and CDFG of the proposed conversion of its ongoing rangeland operations on Newhall Ranch to more intensive agricultural uses. The purpose of the advance notice requirement is to allow the applicant, or its designee, to coordinate with the County and CDFG to avoid or minimize significant impacts to the spineflower prior to the applicant's proposed conversion of its ongoing rangeland operations to more intensive agricultural uses. This conversion shall not include ordinary pasture maintenance and renovation or dry land farming operations consistent with rangeland management.

2.6.8 CUMULATIVE MITIGATION MEASURES

No cumulative measures are proposed beyond the mitigation measures that would be implemented on a project-by-project basis. No such measures are proposed, because the project mitigation program specified above sufficiently mitigates the direct and indirect impacts of the proposed Specific Plan. As to Ahmanson Ranch, the impacts to the spineflower and other sensitive plant species are reported to be mitigated to below a level of significance as well. Finally, all proposed development in the region, which impacts the spineflower, or other listed plant species, must obtain an incidental take permit under Section 2081 of the California ESA. The take permit cannot be issued unless the impacts are fully mitigated and CDFG makes a "no jeopardy" finding as to the project impacts.

2.6.9 UNAVOIDABLE SIGNIFICANT IMPACTS ANALYSIS

The Newhall Ranch Specific Plan would result in the direct loss of San Fernando Valley spineflower and its habitat, would potentially cause indirect impacts due to development edge effects, and would contribute to significant cumulative impacts. These impacts are considered significant; however, because actions are to be taken that would be sufficient to minimize the take of the spineflower, fully mitigate the loss, and create additional spineflower populations, both onsite and offsite, the impacts to the spineflower are considered significant, but mitigable under CEQA and the CEQA Guidelines. This finding nevertheless requires the project applicant to obtain an incidental take permit(s) from CDFG after project approval, and the take permit(s) will not be issued unless CDFG makes findings of "no jeopardy" regarding the spineflower.

2.6.10 REFERENCES

The reference materials listed below were considered in preparing this section. These reference materials are incorporated by this reference and will be made available for public review by contacting: County of Los Angeles Department of Regional Planning, 320 West Temple Street, 13th Floor, Los Angeles, California 90012, Contact Lee Stark.

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2.7 ADDITIONAL ALTERNATIVES

2.7.1 PURPOSE

According to the CEQA Guidelines Section 15126.6, the purpose of the Project Alternatives section is to assess a range of reasonable alternatives to the Specific Plan, or to the location of the Specific Plan, which would feasibly attain most of the basic objectives of the Specific Plan, but which would avoid or substantially lessen any of the previously-identified significant effects of the Specific Plan. Specific Plan objectives are presented in Section 1.0, Project Description, of the Newhall Ranch Specific Plan and Water Reclamation Plan Revised Draft EIR (March 1999). The EIR is available for review at the Los Angeles County Department of Regional Planning, 320 West Temple Street, 13th Floor, Los Angeles, California. According to the CEQA Guidelines, the discussion of each alternative should be sufficient "to allow meaningful evaluation, analysis, and comparison with the proposed project." Therefore, the significant effects of each alternative will be discussed in less detail than those of the Specific Plan, but in enough detail to foster informed decision-making and public participation.

2.7.2 *INTRODUCTION*

As indicated in the Newhall Ranch Draft Additional Analysis (April 2001), and Chapter 2.6 of this revised Draft Additional Analysis, a rare plant species commonly known as the San Fernando Valley spineflower (Chorizanthe parryi var. *fernandina; "spineflower") has been found on the Specific Plan site at three general locations, and at two offsite locations in the vicinity of Newhall Ranch. See* ***Section 2.6*** *for a complete description of the characteristics and locations of the spineflower populations. In addressing potential significant impacts of the Specific Plan on various environmental topics, including sensitive biological resources, the original Draft EIR presented an analysis of a wide range of on- and off-site alternatives to the Specific Plan. Several of these alternatives focused specifically on reducing or eliminating the potential significant impacts of the Specific Plan on sensitive biological resources found on the Specific Plan site. During the litigation on the Newhall Ranch Final EIR, the project opponents argued that the analysis of alternatives presented in the EIR was inadequate. The trial court did not agree and found that the alternatives analysis was legally adequate and complete under CEQA and the CEQA Guidelines.*

2.7.3 EXISTING SPECIFIC PLAN ALTERNATIVES

As indicated above, several of the EIR's on-site alternatives already addressed potentially significant impacts to sensitive biological resources. A brief summary of these on-site alternatives is presented below (see Section 8.0, Project Alternatives, of the Revised Draft EIR (March 1999) for the full presentation of these alternatives).

- Alternative 1, The No Project Alternative. This alternative is required by the CEQA Guidelines, and it compares the impacts, which might occur if the site is left in its present condition with those that would be generated by the proposed Specific Plan. Leaving the site in its present condition may not preclude impacts to on-site spineflower populations, as described further below in the "No Project Alternative" subsection;

- Alternative 2, Site Buildout under the Santa Clarita Valley Area Plan. The purpose of this alternative is to describe the impacts of developing the site as allowed by the Santa Clarita Valley Area Plan and to compare such impacts with those generated by the Specific Plan. Under this alternative, approximately 2,070 dwelling units and 47,372 square feet of commercial space could be constructed on the Specific Plan site. Given that a substantially lesser amount of grading and its associated ground and habitat disturbance would occur with Alternative 2, and given that there would be a substantial reduction in site population with Alternative 2, the direct and indirect biological impact of Alternative 2 would be less than that of the Specific Plan. Development under Alternative 2 could occur within designated SEAs 20 and 23, but to a lesser degree and intensity than with the Specific Plan. However, grazing activities would continue with Alternative 2 in both SEAs. Also, the applicant has indicated that the Open Areas of the Specific Plan site, including the High Country and the River Corridor Special Management Areas, would not be dedicated to the public in perpetuity, but would remain in private ownership with no provision for public access. With regard to the spineflower specifically, direct disturbance due to development to known spineflower populations could be avoided under this alternative, thereby lessening potentially significant impacts to this plant species. However, as indicated above, cattle grazing would continue in areas containing the spineflower;

- Alternative 3, The Clustered Alternative (Same Amount of Development as Specific Plan, Smaller Footprint). The primary purpose of this alternative is to minimize or avoid potentially significant biological impacts by reducing the development footprint of the Specific Plan. In doing so, many other impacts which could occur as a result of land surface disturbance (e.g., impacts to cultural

resources, geotechnical resources, fugitive dust impacts generated by grading, etc.) might also be reduced in magnitude by a reduction in the development footprint of the Specific Plan. Also, the reduction in Specific Plan footprint could also result in the avoidance, in whole or in part, of populations of spineflower, thereby lessening potentially significant impacts to that plant species;

- Alternative 4, The 19,750 Unit Alternative (20 Percent Reduction in Development, Same Footprint). The primary purpose of this alternative is to minimize or avoid potentially significant traffic, air quality, noise, indirect biological, utility (e.g., water demand, wastewater generation), and public service (e.g., fire department, sheriff department) impacts by generally decreasing the amount of development on the site. Given that a lesser amount of grading and its associated ground and habitat disturbance would occur, and given that there would be a reduction in site population with Alternative 7, the biological impact of Alternative 7 would be less than that of the Specific Plan. This would include a reduction in the amount of direct ground disturbance to areas containing spineflower populations, thereby lessening potentially significant impacts to that plant species;

- Alternative 5, The 15,000 Unit Alternative (39 Percent Reduction in Development, Smaller Footprint). The primary purpose of this alternative is to avoid or minimize the potentially significant direct and indirect biological impacts created by the Specific Plan by reducing the amount of development and by reducing the footprint upon which such development would occur. In doing so, many other impacts which could occur as a result of site development, including impacts to spineflower populations, might also be reduced in magnitude. Given that a lesser amount of grading and its associated ground and habitat disturbance would occur, and given that there would be a substantial reduction in site population with Alternative 5, the biological impact of Alternative 5, including impacts to spineflower populations, would be less than that of the Specific Plan; and

- Alternative 6, The 8,000 Unit Alternative (68 Percent Reduction in Development, Smaller Footprint). The primary purpose of this alternative is to avoid or minimize the potentially significant visual and biological impacts created by the Specific Plan. In doing so, many other impacts which could occur as a result of site development might also be reduced in magnitude. With the exception of the water reclamation plant, development under Alternative 6 would not occur within designated SEAs 20 and 23. Given that a substantially lesser amount of grading and its associated ground and habitat disturbance would occur, and given that there would be a substantial reduction in site population with Alternative 6, the biological impact of Alternative 6 would be less than that of the Specific Plan. With regard to the spineflower populations, potentially significant impacts created by development-related ground disturbance would be lessened.

In addition to the on-site alternatives, the EIR addressed several off-site alternatives to the Specific Plan. While it is not known whether or not the off-site alternative locations contain spineflower populations, it is certainly possible, given the presence of land suitable for its growth. Under such conditions, development of the Newhall Ranch Specific Plan on another site may simply be transferring potentially significant impacts to the spineflower to other locations, thereby not avoiding or lessening impacts to the species. If, on the other hand, off-site alternative locations do not maintain spineflower populations, significant impacts to the species caused by development on Newhall Ranch could be avoided by moving the proposed Specific Plan to another location. See Revised Draft EIR Section 8.0.4, Off-site Alternatives to the Specific Plan, for a complete discussion of off-site alternatives.

2.7.4 ADDITIONAL SPECIFIC PLAN ALTERNATIVES

In keeping with CEQA's requirement that an EIR assess a range of reasonable alternatives to a project, and given the information regarding the spineflower located on the Specific Plan site and the potential for significant impacts to the plant, this Revised Draft Additional Analysis identifies an expanded analysis of "Alternative 1 - No Project Alternative," and provides three additional alternatives to the Specific Plan that are intended to further address potentially significant impacts to the spineflower. These alternatives are referred to as "Alternative 7 – Spineflower Translocation Alternative", "Alternative 8 – Spineflower Avoidance Alternative I" and "Alternative 9 – Spineflower Avoidance Alternative II." Please note that Alternatives 2 through 6 were already adequately analyzed in the Newhall Ranch Revised Draft EIR (March 1999).

2.7.4.1 Alternative 1 – No Project Alternative

The No Project Alternative is required by the CEQA Guidelines, and it compares the impacts which might occur if the site is left in its present condition with those that would be generated by the proposed Specific Plan. The Specific Plan site is in a partially disturbed condition as a result of existing oil and natural gas operations, grazing, and ongoing farming activities (see, refer to Newhall Ranch Revised Draft EIR, Section 2.0, Environmental and Regulatory Setting, for a detailed discussion of existing site conditions). Under the No Project Alternative, the Specific Plan site would remain as vacant land with ongoing oil and natural gas operations; agricultural activities would remain along the Santa Clara River Corridor, on the mesas overlooking the River, and in the wider canyon bottoms; and cattle grazing would remain in Potrero Canyon, along the River, and in other upland and mountainous portions of the Specific Plan site. In addition, Southern California Edison Company and Southern

California Gas Company would retain their on-site facilities and the site would continue to be used for motion picture filming.

Although nothing would change within the Specific Plan boundaries under this scenario, the disturbance associated with retaining existing uses on the site would continue. For instance, grazing and ongoing farming activities onsite would continue to disturb the soil surface and existing onsite vegetation. While such disturbances would continue with the No Project Alternative, they would be of lesser magnitude than the Specific Plan, although some areas that would be protected under the Specific Plan would continue to be disturbed under the No Project Alternative.

In addition, under the No Project Alternative, the applicant would continue with its farming/agricultural, grazing and oil and gas operations. The continuation of farming/agricultural operations could also legally intensify over most portions of Newhall Ranch. In particular, the spineflower population areas existing on Newhall Ranch could be converted legally to row crops or dry farming. Similarly, spineflower population areas could continue to be subject to ongoing cattle grazing. On Newhall Ranch, the known spineflower populations occur in agricultural production areas, including farming and cattle grazing. In short, without implementation of the Specific Plan, including its revised mitigation program relating to the spineflower and other sensitive plant species, the onsite spineflower populations could be lawfully damaged or otherwise destroyed in connection with existing and ongoing agricultural/farming/grazing operations.

Based solely on environmental criteria, however, the No Project Alternative would be considered environmentally superior to the Specific Plan because the potential Specific Plan-related impacts described in Section 4.0 of Newhall Ranch Revised Draft EIR (March 1999) would not occur. However, by retaining the Specific Plan site under existing conditions, most of the applicant's Specific Plan objectives would not be met and, if development does not occur on the site, the anticipated future demand for housing[1] and commercial services would likely stimulate development elsewhere in the Santa Clarita Valley, including development in less accessible areas of the Valley with environmental resources that may be comparable to or of greater value than those found on the Specific Plan site.

The applicant has also indicated that, if the Specific Plan is not implemented as proposed and this alternative is implemented instead, the following would result:

- Neither the River Corridor (813 acres) nor the High Country (3,949.9 acres) would be preserved as Special Management Areas available for public use;

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1 See Southern California Association of Government population projections for project census tracts, Newhall Ranch Revised Draft EIR, Section 4.21, Population, Housing and Employment.

- Cattle grazing would continue in both the River Corridor and High Country; no trails would be constructed on the Specific Plan site, including the County-proposed River trail and the trail network proposed by the applicant as part of the Specific Plan;
- No additional restrictions would be placed on the public use of the River Corridor; the County Master Plan of Highways alignment of Commerce Center Drive would not be extended south to link with Magic Mountain Parkway by the applicant;
- Conservation of the Asistencia (San Fernando Mission Annex) site would not occur;
- No Metrolink rail right-of-way would be reserved through the site;
- No park-and-ride lot/Metrolink station site along SR-126 would be available on the site;
- No fire station would be constructed off Chiquito Canyon Road near the community of Val Verde;
- No golf course would be available;
- No recreational lake would be available for public use; and
- No additional tax revenue would be generated from the site.

Because implementation of this alternative would not meet the applicant's objectives for the site and would likely just divert urban development from this site to another, the alternative is not considered acceptable.

2.7.4.2 Alternative 7 – Spineflower Translocation Alternative (Same Amount of Development, Spineflower Populations Translocated On-site)

The primary purpose of Alternative 7 is to avoid significant impacts to the on-site spineflower populations by actively translocating all known spineflower plants and seed bank to a location on the Specific Plan site suitable for spineflower growth, including the collection of top soils containing spineflower plants and seed bank, so that the top soil could be relocated to the same relocation area(s) as the translocated spineflower plants.

The basis for this alternative is found in the California Native Plant Protection Act (Fish and Game Code, Sections 1900-1913). The legal protection afforded to listed plant species under the agricultural exemption provided by the Native Plant Protection Act (Section 1913(a)) is a 10-day notice requirement to enable CDFG to "salvage" plants if CDFG has notified the landowner that a listed plant is growing on the property. During the 10-day advance notice period, CDFG may enter the property and salvage the plant through transplantation or translocation activities. Consistent with the legal protections afford by the Native Plant Protection Act, this alternative would protect all known onsite spineflower populations for ten days until CDFG salvages the plants through transplantation or translocation activities within the Specific Plan site.

Under Alternative 7, the Specific Plan site would be developed consistent with the Specific Plan Land Use Plan; the same amount of residential, commercial, industrial and other proposed land uses would occur on the site. However, as part of this alternative, several potential translocation areas are designated on the Specific Plan site as shown on **Figure 2.7-1**. The spineflower potentially impacted by implementation of the Specific Plan, without mitigation, presently occupy over 6 acres of land area. While the amount of land set aside for this purpose has not been quantified, given the overall size of the Newhall Ranch area, at least 24 acres of relocation area could be readily found in onsite locations suitable for this species (24 acres allows for a 4:1 replacement ratio).

Given that Alternative 7 would result in the same amount of development as the proposed Specific Plan, the direct and indirect impacts of Alternative 7 would be the same as the Specific Plan with the exception of potential impacts to the spineflower and other resources that may be located within the translocation area. Other features of Alternative 7 include:

- The translocation areas would be completely fenced to preclude direct intrusion impacts;
- The costs associated with the translocation alternative would be borne by the Specific Plan applicant;
- The land replacement area ratio of approximately 4:1 would allow enough setback space from development to minimize indirect impacts to the plant according to the study prepared by the Conservation Biology Institute (January 2000);
- The translocation process would be conducted under the direction of the project biologist, as approved by Los Angeles County, and under the supervision of Los Angeles County and with input and coordination from CDFG; and
- Land uses that would have been developed within the footprint of the translocation areas would be transferred to adjacent development areas consistent with the provisions of the Specific Plan.

If the proposed Specific Plan is not implemented and Alternative 7 is implemented instead, the following would also result:

- Both the River Corridor and the High Country would be preserved as Special Management Areas available for public use;
- Cattle grazing would no longer occur in both the River Corridor and High Country; trails would be constructed on the Specific Plan site, including the County-proposed River trail and the trail network proposed by the applicant as part of the Specific Plan;
- The County Master Plan of Highways alignment of Commerce Center Drive would be extended south to link with Magic Mountain Parkway;
- Potential for the possible conservation of the Asistencia (San Fernando Mission Annex) site would exist;

- A Metrolink rail right-of-way would be reserved through the site;
- A park-and-ride lot/Metrolink station site along SR-126 would be available on the site;
- A fire station would likely be constructed off Chiquito Canyon Road near the community of Val Verde; and
- Approximately the same amount of tax revenue would be generated on the site.

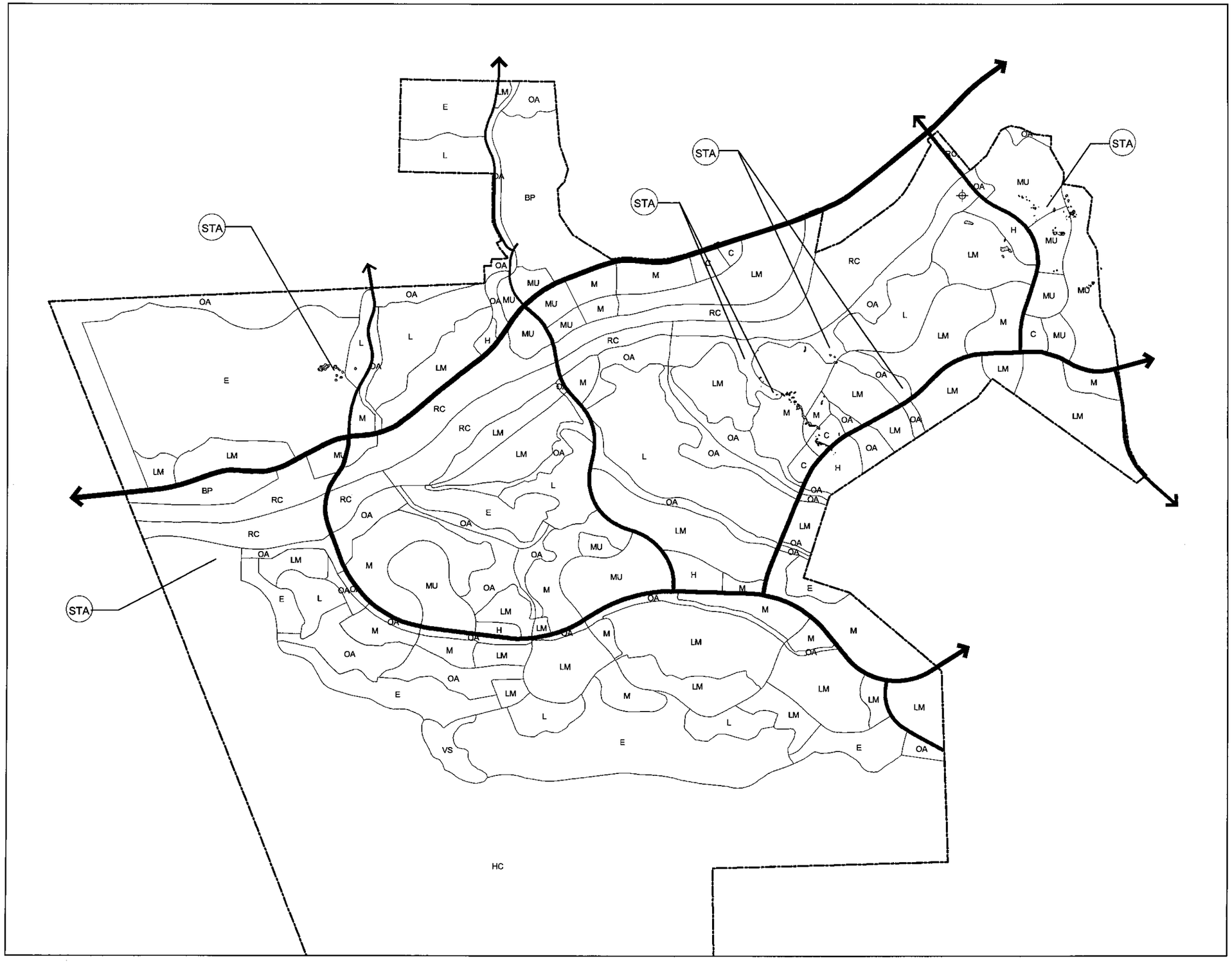
Conclusion

While all the Specific Plan objectives would be met with this alternative, Alternative 7 may not necessarily be considered environmentally superior to the Specific Plan with respect to spineflower impacts. While plants, along with the topsoil, would be salvaged and moved to areas containing spineflower plants collected and placed in translocation areas, temporary disturbance to most of the spineflower populations would occur during this process. In addition, some of the translocation areas would not have the same degree of connectivity to proposed open area that would occur under the Specific Plan. Conversely, the mitigation plan proposed as part of the Specific Plan would result in the direct preservation in place of significantly more of the known spineflower plant area and would result in several more mitigation features (i.e., connectivity, buffering, providing hydrologic protection of spineflower areas, managing water flow, etc.) than would be provided under this Alternative. Consequently, Alternative 7 is not considered as favorable from a rare plant perspective as the Specific Plan.

2.7.4.3 Alternative 8 – Spineflower Avoidance Alternative I (21,182 Units, Four Percent Reduction in Residential Development, 13 Percent Reduction in Non-Residential Development, Smaller Footprint)

The primary purpose of Alternative 8 is to avoid or minimize the potentially significant direct and indirect biological impacts to the spineflower created by the Specific Plan by reducing the amount of development and by reducing the footprint upon which such development would occur. In doing so, many other impacts which could occur as a result of site development might also be reduced in magnitude. Alternative 8 proposes 21,182 Residential units, 5.24 million square feet of Commercial uses, a water reclamation plant, and a golf course (see **Figure 2.7-2, Alternative 8, Spineflower Avoidance Alternative I**). The total number of Residential units under Alternative 8 is four percent less than under the Specific Plan and the total non-residential square footage is 13 percent less. Other characteristics of Alternative 8 include:

- As shown in **Figure 2.7-2**, development would not occur at or near most areas that have known populations of spineflower. This alternative assumes that a minor "take", or impact, would occur to small spineflower populations that are isolated and/or would occur in other areas to allow for the construction of major infrastructure components, such as the extension of Magic Mountain Parkway through the site



NEWHALL RANCH

L E G E N D

- LOS ANGELES SUNFLOWER
- SPINEFLOWER LOCATION
- STA — POTENTIAL SPINEFLOWER TRANSLOCATION AREAS

LAND USE CATEGORIES

- E — ESTATE RESIDENTIAL
- L — LOW DENSITY RESIDENTIAL
- LM — LOW-MEDIUM DENSITY RESIDENTIAL
- M — MEDIUM DENSITY RESIDENTIAL
- H — HIGH DENSITY RESIDENTIAL
- C — COMMERCIAL
- BP — BUSINESS PARK
- MU — MIXED USE
- VS — VISITOR SERVING
- OA — OPEN AREA
- RC — RIVER CORRIDOR
- HC — HIGH COUNTRY
- ROADS

FORMA

NORTH

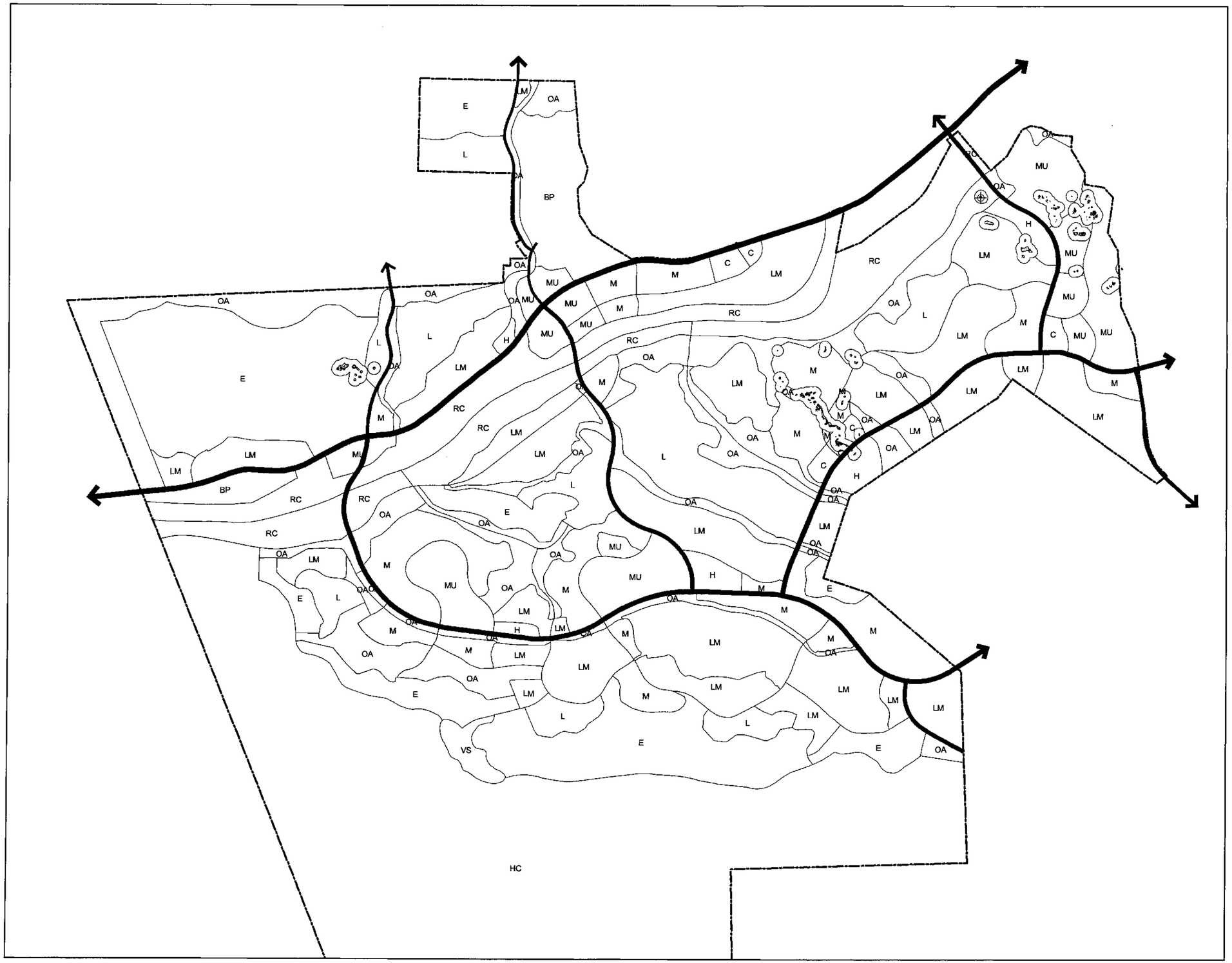
100 ACRES 400 ACRES

Feet 0 375 750 1,500

Meters 0 150 300 600

2.7-1

ALTERNATIVE 7
SPINEFLOWER TRANSLOCATION ALTERNATIVE



NEWHALL RANCH

L E G E N D

- SUNFLOWER LOCATION
- SPINEFLOWER SINGLE PLANT LOCATIONS
- SPINEFLOWER LOCATIONS (w/ 150' Buffer)

LAND USE CATEGORIES

- E — ESTATE RESIDENTIAL
- L — LOW DENSITY RESIDENTIAL
- LM — LOW-MEDIUM DENSITY RESIDENTIAL
- M — MEDIUM DENSITY RESIDENTIAL
- H — HIGH DENSITY RESIDENTIAL
- C — COMMERCIAL
- BP — BUSINESS PARK
- MU — MIXED USE
- VS — VISITOR SERVING
- OA — OPEN AREA
- RC — RIVER CORRIDOR
- HC — HIGH COUNTRY
- ROADS

FORMA
11-06-02

NORTH

100 ACRES
400 ACRES

Feet: 0 375 750 1,500
Meters: 0 150 300 600

FIGURE 2.7-2

ALTERNATIVE 8
SPINEFLOWER AVOIDANCE
ALTERNATIVE I

to future Potrero Canyon Road would impact the spineflower near Grapevine Mesa. In addition, many of the proposed spineflower mitigation measures proposed in **Section 2.6** would not occur (see (f) Biological Resources below);

- Reduction in residential housing units from 22,038 to 21,182 (and associated loss of approximately 86 housing units for low and moderate income families), and reduction in commercial development from 5.72 million square feet to 5.24 million square feet (and associated loss of 1,887 jobs/employment);
- A reduction in development area from approximately 5,826 acres to 5,698 acres, resulting in an increase of Open Area from approximately 6,138 acres to 6,265 acres, and
- On-site population would decrease from 59,707 to 57,008.

The applicant has indicated that, if the Specific Plan is not implemented as proposed and Alternative 8 is implemented instead, the following would result:

- The High Country (3,949.9 acres) would not be designated as a Special Management Area;
- The River Corridor (813 acres) would still be dedicated;
- Cattle grazing would continue in the High Country;
- The only features relating to trails would be the provision of pedestrian and bicycle trails on major roadways only (except, however, trails proposed for Commerce Center Drive and Magic Mountain Parkway, which would be eliminated from the Specific Plan);
- No restrictions would be placed on the use of the River Corridor;
- No Metrolink rail right-of-way would be reserved through the site;
- No park-and-ride lot/Metrolink station site along SR-126 would be available on the site;
- No fire station would be constructed off Chiquito Canyon Road near the community of Val Verde;
- No recreational lake would be available for public use; and less tax revenue would be generated on the site; and

Table 2.7-1, Alternative 8, Spineflower Avoidance Alternative I Statistical Summary provides a breakdown of the land uses and intensities proposed for Alternative 8.

Table 2.7-1
Alternative 8
Spineflower Avoidance Alternative I Statistical Summary

Land Uses	Gross Acres	Dwelling Units	Square Footage
Residential:			
Estates	1,314	419	
Second Units		419	
Low	750	668	
Low Medium	1,784	5,957	
Medium	827	7,382	
High	117	2,296	
Subtotal	4,792	17,141	
Mixed-Use and Non-Residential:			
Mixed Use[1]	588	4,041	3,508,223
Commercial	62		438,625
Business Park	245		1,295,000
Water Reclamation Plant	11		
Subtotal	906	4,041	5,241,848
Major Open Areas:	6,265		
Totals	11,963	21,182	5,241,848

Source: FORMA (November2002).
[1]Mixed uses include Commercial and Residential uses.

It is assumed, for the sake of this impact analysis, that units under the Estate, Low, and Low-Medium Residential designation would be single family detached units, and that units under the Mixed Use and Medium designations would be multi-family attached units. The following discussion compares the environmental impacts of Alternative 8 to those of the Specific Plan.

(a) Geotechnical and Soil Resources

Alternative 8 would have a smaller development footprint than the Specific Plan; grading in the eastern and western portion of the Mesas Village, and in Riverwood north of SR-126 that would have occurred under the Specific Plan would not occur under Alternative 8. Development activity subject to the effects of seismic events would occur under Alternative 8. However, because site development under Alternative 8 would require less ground disturbance than the Specific Plan and would require less earth movement, from a geotechnical standpoint, Alternative 8 would be environmentally superior to the Specific Plan.

(b) Flood

Urban runoff that would be generated under Alternative 8 would be conveyed and discharged into the Santa Clara River. Like the Specific Plan, it is expected that implementation of Alternative 8 would also reduce runoff quantities from the Specific Plan site from current runoff conditions by reducing the amount of debris in the runoff. However, because the Specific Plan would have more developed area than Alternative 8, the amount of debris in the runoff from the Specific Plan site would be more under Alternative 8 than under the Specific Plan and, therefore, so would total runoff quantities. Consequently, the Specific Plan is superior to Alternative 8.

With respect to runoff quality, development under Alternative 8 would be required to comply with the same Regional Water Quality Control Board standards as the Specific Plan and no environmentally superior alternative can be identified.

(c) Traffic/Access

Implementation of Alternative 8 would result in a decrease in trips. Specifically, average daily trip generation on the Specific Plan site would decrease from 334,000 trips to approximately 328,010 trips (a two percent decrease). Alternative 8 would decrease traffic impacts on local roadways, would require fewer roadway improvements off the Specific Plan site than the Specific Plan, and would be environmentally superior to the Specific Plan with respect to traffic/access impacts.

(d) Noise

With a reduction in the amount of development on the site and associated trip reduction would be a reduction in noise impacts on and in the vicinity of the site. The analysis presented in the Revised Draft EIR determined that only one off-site location within the vicinity of the Specific Plan site - the Travel Village RV Park - would be significantly impacted by Specific Plan-generated noise. A reduction in the Newhall Ranch traffic volumes of approximately two percent would reduce the noise level increase at the Travel Village RV Park; however, noise would still exceed the off-site mobile source thresholds of significance. Therefore, Alternative 8 would be environmentally superior to the Specific Plan with respect to noise impacts due to the overall reduction in noise levels generated by the Specific Plan.

(e) Air Quality

Because less on-site grading would occur under Alternative 8, the total amount of grading and construction-related air quality impacts would be less than those of the Specific Plan. In addition, Alternative 8 would generate less traffic than the Specific Plan. The effect of this reduction in building space and vehicle trips on air emissions is provided below.

Emissions Source	Emissions in Pounds per Day				
	CO	VOC	NO_x	SO_x	PM_{10}
Proposed Specific Plan	17,575.7	835.6	3,015.6	315.9	43,185.6
Spineflower Avoidance Alternative I	17,260	821	2,962	310	42,412
Recommended SCAQMD Thresholds	550.0	55.0	55.0	150.0	150.0

Source: Impact Sciences, Inc., November2002.

As shown, Alternative 8 would generate fewer air emissions than the Specific Plan. Therefore, it would be environmentally superior to the Specific Plan with respect to air quality. The emissions generated by Alternative 8 would, however, exceed the thresholds recommended by the SCAQMD and, as with the Specific Plan, would be considered significant.

(f) Biological Resources

Table 2.7-2 compares the acreage of habitats impacted by Alternative 8 with that impacted by the Specific Plan. As shown, approximately 57.3 fewer acres of sensitive habitats are impacted by Alternative 8 in non-SEA areas. Impacts to sensitive habitats in SEAs 20 and 23 would remain unchanged. Given that a lesser amount of grading and its associated ground and habitat disturbance would occur, and given that there would be a reduction in site population with Alternative 8, the biological impact of Alternative 8 would generally be less than that of the Specific Plan.

Table 2.7-2
Comparison of Impact on Sensitive Habitats – Alternative 8

	W/Specific Plan (acres)	W/Alternative 8 (acres)	Net Change (acres)
Non-SEA Areas			
• Sensitive Habitats	2,313.3	2,256.0	(57.3)
• Other Habitats	2,970.9	2,925.3	(45.6)
Subtotal	5,284.2	5,181.3	(102.9)

Note: Impacts in SEAs 20 and 23 would remain unchanged under Alternative 8.

However, grazing activities would continue with Alternative 8 in the High Country SMA and in areas not within spineflower preserve boundaries. Also, the applicant has indicated that the Open Areas of the High Country Special Management Area would not be dedicated for public use, but would remain in private ownership with no provision for public access. From a biological standpoint, the reduction in grading and avoidance of most on-site spineflower populations under Alternative 8 could environmentally outweigh the loss to the public of the High Country Special Management Area. However, this alternative also allows a "take", or impact, to occur to small spineflower populations that are isolated and/or in other areas to allow for the construction of major infrastructure components, such as the extension of Magic Mountain Parkway. When compared with the Specific Plan with the proposed mitigation to spineflower impacts presented in **Section 2.6**, the preserved spineflower populations under this alternative would not be connected to proposed open areas as proposed under the Specific Plan. Nor would other proposed mitigation measures occur. Specific measures proposed within this revised Draft Additional Analysis that would not occur with this alternative include:

- the Agency consultation provisions proposed in **Section 2.6**;
- the provision of Spineflower Special Study Mitigation Overlays;
- the creation of managed preserves as described in **Section 2.6**;
- the connectivity and buffer provisions as described in **Section 2.6**;
- the provision for future engineering, design and grading review and modifications;
- the monitoring and management provisions as described in **Section 2.6**; and
- consultation provisions regarding ongoing agricultural activities.

In effect, under Alternative 8 populations of spineflower would essentially be surrounded by proposed development within 150 feet with fencing to prohibit trespass, thereby eliminating any connection to open space areas and the active preserve management and consultation provisions proposed as mitigation in **Section 2.6**. Based on this information, Alternative 8 is not biologically superior to the Specific Plan with respect to impacts to the spineflower.

(g) Visual Qualities

Development intensities in the northeastern corner of the Specific Plan site along SR-126 and Commerce Center Drive would remain comparable to that of the Specific Plan, and visual impacts of this part of the site would remain essentially unchanged from that of the Specific Plan. However, because less

development would be located along small portions of the bluffs south of the Santa Clara River than under the Specific Plan, slightly less development would be visible to travelers along SR-126. Alternative 8 was analyzed as follows based on the viewing location information provided in Section 4.7, Visual Qualities:

1. Viewing Location 1 (west of the site in Ventura County, along SR-126 looking east)

Under Alternative 8, development would appear generally the same from a visual perspective. The changes in the Specific Plan design would not be visible from this viewing location. A water reclamation plant would also be constructed under Alternative 8 in the same location as under the Specific Plan and would have a visual impact comparable to that of the proposed plant. Because generally the same amount of development would be visible from this viewing location under Alternative 8 than under the Specific Plan, Alternative 8 would similar visual impacts than the Specific Plan, and would not be the environmentally superior alternative with respect to visual impacts from Viewing Location 1.

2. Viewing Location 2 (on site, along SR-126 west of San Martinez Grande looking south)

Visual impacts from Viewing Location 2 would be similar under Alternative 8 than under the Specific Plan because the land uses changes shown in this alternative would not be visible from this location. Therefore, Alternative 8 is not environmentally superior to the Specific Plan with respect to visual impacts from Viewing Location 2.

3. Viewing Location 3 (on site, near the SR-126/Chiquito Canyon Road intersection looking south)

Under the Specific Plan and Alternative 8, Low-Medium and Medium Residential development is proposed south of the River and at Long Canyon and would be visible in the foreground of this viewshed. Mid-ground development under Alternative 8 would be visible to the same extent that it would be visible under the Specific Plan. However, the background view to the east of the Grapevine Mesa area in the Mesas Village might appear slightly less intense due to the fact that some land uses would be removed from this portion of the Specific Plan site in order to preserve in place spineflower populations. Therefore, Alternative 8 would have slightly less of a visual impact than the Specific Plan and would be environmentally superior to the Specific Plan with respect to visual impacts from Viewing Location 3.

4. Viewing Location 4 (at the northern site boundary on Chiquito Canyon Road looking south)

Under the Specific Plan, the proposed Business Park, Medium Residential development along Chiquito Canyon Road, and Low-Medium and Low Residential development south of the River would be visible from Viewing Location 4. The Business Park, Residential development along Chiquito Canyon Road, and Low Residential development south of the River would also be visible from this viewing location under Alternative 8. The Low-Medium Residential development proposed south of the River at Long Canyon would also still occur under this development scheme, and the same amount of Residential development south of the River would be visible in the distance under Alternative 8. Due to the extent of development still visible from this location, no noticeable visible change would occur under Alternative 8.

5. Viewing Location 5 (on site, along SR-126 on the west side of Castaic Creek looking south)

Although development would occur within this viewshed under Alternative 8, it would be slightly less intensive than under the Specific Plan. For instance, some of the Medium Residential development proposed in this viewshed south of the Santa Clara River would be replaced with the Open Area land use designation to preserve spineflower populations. To the east south of the river in the Airport Mesa portion of the Mesas Village, some of the Mixed-Use, High Residential and Low-Medium Residential areas would also be replaced with the Open Area land use designation. (see **Figure 2.7-2, Alternative 8, Spineflower Avoidance Alternative**). Because development intensities visible from Viewing Location 5 would be slightly less under Alternative 8 than under the Specific Plan, visual impacts would be less, making Alternative 8 environmentally superior to the Specific Plan with respect to visual impacts from Viewing Location 5.

6. Viewing Location 6 (off site, generally from the SR-126/I-5 Interchange looking west and southwest toward site)

Mixed use development south of the Santa Clara River in the Airport Mesa area would be slightly less visible from Viewing Location 6 under the Specific Plan and under Alternative 8. This is because some of the Mixed Use development would be replaced with the Open Area designation to preserve spineflower populations. The same would be the case further to the west in the Grapevine Mesa area as some visible Medium Residential land uses would be replaced with Open Area Therefore, the degree of visual impact under Alternative 8 would be slightly less than under the Specific Plan, making

Alternative 8 marginally environmentally superior to the Specific Plan with respect to visual impacts from this viewing location.

7. Viewing Locations 7, 8, and 9 (off site, generally from Interstate 5 and points east, looking west and southwest toward site)

Some of the Mixed-Use development at the Airport Mesa area that would appear in the viewshed of Viewing Locations 7, 8, and 9 would be replaced under Alternative 8 with Open Area as spineflower populations are preserved. Therefore, Alternative 8 would be environmentally superior to the Specific Plan with respect to visual impacts from this viewing location.

8. Viewing Location 10 (Off Site, from the Rim of the Valley Trail, looking north toward site)

Views from the Rim of the Valley trail would be visually slightly less intense in appearance under Alternative 8 when compared with the Specific Plan, because any reductions in development at the Airport Mesa and Grapevine Mesa areas would be so slight in appearance (given the distance between the trail and the development area) as to be visually imperceptible.

9. Conclusion of Visual Comparison

Because portions of the Newhall Ranch Specific Plan visible from highly traveled visual corridors would have development replaced with Open Area under Alternative 8, this alternative would be environmentally superior to the Specific Plan.

(h) Cultural/Paleontological Resources

Because less ground disturbance would occur under Alternative 8, potential impacts to cultural and paleontological resources on the Specific Plan site would be less under Alternative 8 than if the Specific Plan were to develop as proposed. Therefore, Alternative 8 is environmentally superior with respect to cultural resources.

(i) Wastewater Disposal

The Specific Plan would generate 6.9 mgd of wastewater, while wastewater generation for Alternative 8 would be approximately 6.5 million gallons per day (mgd), all of which would be treated at an on-site

water reclamation plant. Assuming that the on-site plant would be sized to treat all wastewater from Alternative 8, neither the Specific Plan nor Alternative 8 would have a significant impact relative to the treatment infrastructure. However, Alternative 8 would be environmentally superior to the Specific Plan with respect to wastewater disposal because less treated wastewater would be generated.

(j) Water Resources

Water demand for Alternative 8 would be approximately 16,860 acre-feet per year, including a potable water demand of 8,010 and a non-potable water demand of 8,850 acre-feet per year, respectively. The Specific Plan total water demand would be approximately 17,680 acre-feet per year, including a potable water demand of 8,645 and a non-potable water demand of 9,035 acre-feet per year, respectively. The decrease in residential units and non-residential development would decrease water demand under this alternative by approximately five percent. Because this alternative would consume less water from potable water resources than the Specific Plan, it would be environmentally superior to the Specific Plan with respect to impacts on potable water resources.

(k) Education

Alternative 8 would generate approximately 8,428 students as compared to the 8,780 students that would be generated by the Specific Plan. Therefore, Alternative 8 is environmentally superior to the Specific Plan with respect to school impacts.

(l) Natural Gas/Electricity

Implementation of both the Specific Plan and Alternative 8 would require the use and expenditure of nonrenewable petroleum resources. Alternative 8 would consume approximately four to nine percent less petroleum resources than the Specific Plan. Although these energy resources are commercially available, Alternative 8 would consume less petroleum-based energy resources than the Specific Plan and would be environmentally superior to the Specific Plan.

(m) Police Services

Because less development would occur on the site under Alternative 8 and a smaller on-site population would result, it is expected that Alternative 8 would have less of an impact on the Sheriff's Department than the Specific Plan. For the same reasons, Alternative 8 would also have smaller demands for CHP and emergency services in the area of the Specific Plan site. As a result, Alternative 8 would be environmentally superior to the Specific Plan with respect to police services.

(n) Fire Services and Hazards

Because, Alternative 8 would result in less development and a smaller population on the Specific Plan site than would occur under the Specific Plan, there would be fewer Fire Department calls to the site than under the Specific Plan. Therefore, with respect to providing fire services to the Specific Plan site, Alternative 8 is environmentally superior to the Specific Plan.

(o) Environmental Safety

As discussed in Revised Draft EIR Section 4.5, Environmental Safety, potential impacts may result on the Specific Plan site if development occurs in the following locations:

- adjacent to historic and continuing oil and natural gas operations,
- in close proximity to the Southern California Edison electrical transmission lines,
- in close proximity to the Southern California Gas Company high pressure gas lines,
- adjacent to State Route 126, upon which hazardous wastes are transported,
- in close proximity to Chiquito Canyon Landfill,
- within the Castaic Lake dam inundation area, and
- adjacent to on-going agricultural operations.

The safety conditions under which Alternative 8 would be developed would be similar to those with development of the Specific Plan. The primary difference between development of Alternative 8 would be a reduction in site population, particularly in areas used in the past for oil and natural gas production. This results in less exposure to potential hazards, as unlikely as their occurrence might be. For this reason, Alternative 8 is superior environmentally to the Specific Plan with respect to environmental safety.

(p) Libraries

Based on County Library planning standards of 0.35 square feet of library facilities per capita and 2.0 books per capita, the Specific Plan would require a total of 20,897square feet of library facilities with 119,414 additional volumes for the library system's collection. In comparison, development under Alternative 8 would, according to County Library standards, require 19,953 square feet of library facilities and 114,017 volumes. Development under Alternative 8 would have less of an impact on County Library facilities than would the Specific Plan and would be environmentally superior to the Specific Plan.

(q) Parks, Recreation and Trails

Under County (and Quimby Act) requirements, development of the Specific Plan would require the applicant to provide 246 dedicated acres of local parkland; the Specific Plan as proposed would exceed this requirement, by a total of 6,175 acres for parks, recreation, and Open Area, including Neighborhood and Community Parks, a 15-acre lake, an 18-hole golf course, trails, the River Corridor and High Country SMAs, and other Open Area (see Revised Draft EIR Section 4.20, Parks, Recreation and Trails for a full discussion on this topic). Per County requirements, development under Alternative 8 would require dedication of a total of approximately 235 acres for parkland. The applicant has indicated that just the River Corridor, and not the High Country, would be preserved for public use under Alternative 8. Because the Specific Plan would provide more on-site recreational land than would Alternative 8, the Specific Plan would be environmentally superior to Alternative 8.

(r) Population, Housing and Employment

1. Population

Development of the Newhall Ranch would result in a resident population of 59,707 at buildout. This population is within SCAG's 1994 growth projections for the area, but not the County's 1990 projections (see Revised Draft EIR Section 4.21, Population, Housing and Employment for further discussion). Alternative 8 would result in approximately 57,008 persons on the Newhall Ranch site. This population is well within SCAG's 1994 growth projections for the region, but not the County's 1990 projections.

2. Housing

Alternative 8 includes 21,182 dwelling units ranging in intensity from Estate to Medium Residential; however, Alternative 8 includes a sizable reduction in the amount of High Residential development (the number of High Residential units is reduced by 532 units to 6,337 units) and in the amount of Medium Residential development (the number of Medium Residential units is reduced by 270 units to 7,382 units). This housing is consistent with SCAG's 1994 adopted forecasts for the region, but not the County's 1990 forecast (see Revised Draft EIR Section 4.21 for further discussion). Therefore, these units are part of SCAG's planned growth of the area, but not the existing County's projections.

However, because the Specific Plan would include a greater number of High and Medium Residential units than Alternative 8, the Specific Plan would provide a wider range of housing units that would

serve a broader range of socioeconomic groups than Alternative 8. A reduction in the amount of High and Medium Residential units with Alternative 8 would also result in a decrease in the amount of affordable housing units on the site and in the region.

3. Employment

Development of the Newhall Ranch would result in an employment population of 19,226. Development consistent with Alternative 8 would generate 17,436 on-site employment opportunities. SCAG forecasts 17,500 jobs for 2015 in the census tracts that overlie the Specific Plan site; therefore, the Specific Plan's estimated employment exceeds SCAG's forecast, but Alternative 8 would provide fewer jobs than the SCAG forecast. The Santa Clarita Valley has been identified by SCAG as an area in need of additional employment opportunities. Under Alternative 8, the jobs to housing ratio would be increased from 0.78 to 0.82, which is more jobs rich than the Specific Plan. However, the Specific Plan provides 1,790 more jobs than does Alternative 8. Consequently, from an employment standpoint, the Specific Plan is superior to Alternative 8.

As with the Specific Plan, the population, housing and employment generated by Alternative 8 do not fall within the County's 1990 projections. However, SCAG projects much more growth in this area than does the County. As would the Specific Plan, Alternative 8 would require a General Plan Amendment. Given the differences between County projections and SCAG projections, the dates of those projections (1990 and 1994, respectively), and the implications to population and housing forecasts resulting from each, no environmental preference with respect to population and housing can necessarily be concluded.

(s) Solid Waste Disposal

At buildout, the Specific Plan would generate approximately 47,741 tons of solid waste per year. In comparison, Alternative 8 would generate approximately 45,354 tons of solid waste annually. Alternative 8 would also generate smaller amounts of bio-solids resulting from the wastewater treatment process. Given the smaller solid waste generation totals associated with Alternative 8, implementation of Alternative 8 would be environmentally superior to the Specific Plan with respect to solid waste disposal.

(t) Agricultural Resources

There are 547 acres of prime farmland and 48 acres of unique farmland on the Specific Plan site. Development of the site consistent with the Specific Plan would result in the loss of this land to urban

uses. Development of the site under Alternative 8 would permit development in areas of the site that are designated as prime farmland and unique farmland (specifically, development would occur on prime farmland north and south of SR-126, west of Chiquito Canyon Road, north of Potrero Canyon just south of the River, and on Potrero Mesa, and would occur on unique farmlands of importance located north of Potrero Canyon just south of the River). However, development would occur on fewer acres of farmland under Alternative 8 than would the Specific Plan because farming activity on the Grapevine and Airport Mesa areas of the site would no longer occur in some areas in order to preserve populations of the spineflower. Therefore, Alternative 8 is environmentally superior to the Specific Plan with respect to the loss of agricultural land.

In general, the conversion of prime agricultural land is irreversible and is, therefore, considered an unavoidable significant impact. However, in light of the continuing trend by the County of Los Angeles to convert cultivated lands to urban uses to accommodate growth, and the fact that the prime agricultural land on the Specific Plan site is already impaired (i.e., relatively difficult and less economical to farm) and is, therefore, generally of lower value than larger and better situated parcels found to the west, the loss of agricultural productivity on prime agricultural land under such circumstances is not considered a significant impact. Thus, there is no environmentally superior alternative with respect to loss of agricultural productivity on the Specific Plan site.

Conclusion

Because some of the environmental impacts of the Specific Plan would be avoided or minimized with Alternative 8, it is environmentally superior to the Specific Plan in some respects (e.g., air quality impacts, traffic impacts, noise impacts, etc). However, Alternative 8 has been rejected in favor of the Specific Plan because Alternative 8 too narrowly limits the range of housing opportunities provided and because many of the basic objectives of the Specific Plan identified in the Project Description of this EIR (Revised Draft EIR Section 1.0) would not be achieved (see information presented below for examples). In addition, when compared with the Specific Plan with the proposed mitigation to spineflower impacts, the preserved spineflower populations under this alternative would not be connected to proposed open areas as proposed under the Specific Plan. In addition, grazing activities would continue with Alternative 8 in the High Country SMA and in areas not within spineflower preserve boundaries. Also, the applicant has indicated that the Open Areas of the High Country Special Management Area would not be dedicated for public use, but would remain in private ownership with no provision for public access. From a biological standpoint, the reduction in grading and avoidance of most on-site spineflower populations under Alternative 8 could environmentally outweigh the loss to the public of the High Country Special Management Area. However, this alternative also

allows a "take", or impact, to occur to small spineflower populations that are isolated and/or in other areas to allow for the construction of major infrastructure components, such as the extension of Magic Mountain Parkway. When compared with the Specific Plan with the proposed mitigation to spineflower impacts presented in **Section 2.6**, the preserved spineflower populations would not be connected to proposed open areas as proposed under the Specific Plan. Nor would other proposed mitigation measures occur. Specific measures proposed within this Revised Draft Additional Analysis that would not occur with this alternative include:

- the Agency consultation provisions proposed in **Section 2.6**;
- the provision of Spineflower Special Study Mitigation Overlays;
- the creation of managed preserves as described in **Section 2.6**;
- the connectivity and buffer provisions as described in **Section 2.6**;
- the provision for future engineering, design and grading review and modifications;
- the monitoring and management provisions as described in **Section 2.6**; and
- consultation provisions regarding ongoing agricultural activities.

In effect, under Alternative 8 populations of spineflower would essentially be surrounded by proposed development within 150 feet with fencing to prohibit trespass, thereby eliminating any connection to open space areas and the active preserve management and consultation provisions proposed as mitigation in **Section 2.6**. Based on this information, Alternative 8 is not biologically superior to the Specific Plan with respect to impacts to the spineflower.

Other Specific objectives not met or impeded to some extent with Alternative 8 are listed below:

- Provide a complementary and supportive array of land uses which will enable development of a community with homes, shopping, employment, schools, recreation, cultural and worship facilities, public services, and open space.

- Establish land uses and development regulations which permit a wide range of housing densities, types, styles, prices, and tenancy (for sale and rental).

- Adopt development regulations which provide flexibility to respond to and adjust to changing economic and market conditions over a long period of time.

- Retain a major public open space area which could act as a regional recreational park.

- Provide an extensive system of pedestrian, bicycle, and hiking trails within the Villages and hiking trails in the High Country and other open areas.

- Preserve the Santa Clara River corridor and adjacent uplands containing significant natural resources for their resource value, open space, and recreational use.

- Retain a major open space area and its natural vegetation as a wildlife or ecological preserve.

For all the reasons provided above, Alternative 8 has been rejected in favor of the proposed Specific Plan as mitigated.

2.7.4.4 Alternative 9 – Spineflower Avoidance Alternative II (20,281 Units, Eight Percent Reduction in Residential Development, 20 Percent Reduction in Non-Residential Development, Smaller Footprint)

The primary purpose of Alternative 9 is to avoid or minimize the potentially significant direct and indirect biological impacts to the spineflower created by the Specific Plan by reducing the amount of development and by reducing the footprint upon which such development would occur. In doing so, many other impacts which could occur as a result of site development might also be reduced in magnitude. Alternative 9 proposes 20,281 Residential units, 4.98 million square feet of Commercial uses, a water reclamation plant, and a golf course (see **Figure 2.7-3, Alternative 9, Spineflower Avoidance Alternative II**). The total number of Residential units under Alternative 9 is eight percent less than under the Specific Plan and the total non-residential square footage is 20 percent less. Other characteristics of Alternative 9 include:

- As shown in **Figure 2.7-3**, development would not occur at or near most areas that have known populations of spineflower. This alternative assumes that a minor "take", or impact, would occur to small spineflower populations that are isolated and/or would occur in other areas to allow for the construction of major infrastructure components (e.g., construction of the Magic Mountain Parkway extension through the site to future Potrero Canyon Road would impact the spineflower near Grapevine Mesa.). In addition, many of the proposed spineflower mitigation measures in **Section 2.6** would not occur (see (f) Biological Resources below);

- Reduction in residential housing units from 22,038 to 20,281 (and associated loss of approximately 176 housing units for low and moderate income families), and reduction in commercial development from 5.72 million square feet to 4.98 million square feet (and associated loss of 2,741 jobs/employment);

- Reduction in development area from approximately 5,826 acres to 5,567 acres, resulting in an increase of Open Area from approximately 6,138 acres to 6,396 acres, and

- On-site population would decrease from 59,707 to 54,775.

The applicant has indicated that, if the Specific Plan is not implemented as proposed and Alternative 9 is implemented instead, the following would result:

- The High Country (3,949.9 acres) would not be designated as a Special Management Area;
- The River Corridor (813 acres) would still be dedicated;
- Cattle grazing would continue in the High Country;
- The only features relating to trails would be the provision of pedestrian and bicycle trails on major roadways only (except, however, trails proposed for Commerce Center Drive and Magic Mountain Parkway, which would be eliminated from the Specific Plan);
- No restrictions would be placed on the use of the River Corridor;
- No Metrolink rail right-of-way would be reserved through the site;
- No park-and-ride lot/Metrolink station site along SR-126 would be available on the site;
- No fire station would be constructed off Chiquito Canyon Road near the community of Val Verde;
- No recreational lake would be available for public use; and less tax revenue would be generated on the site; and

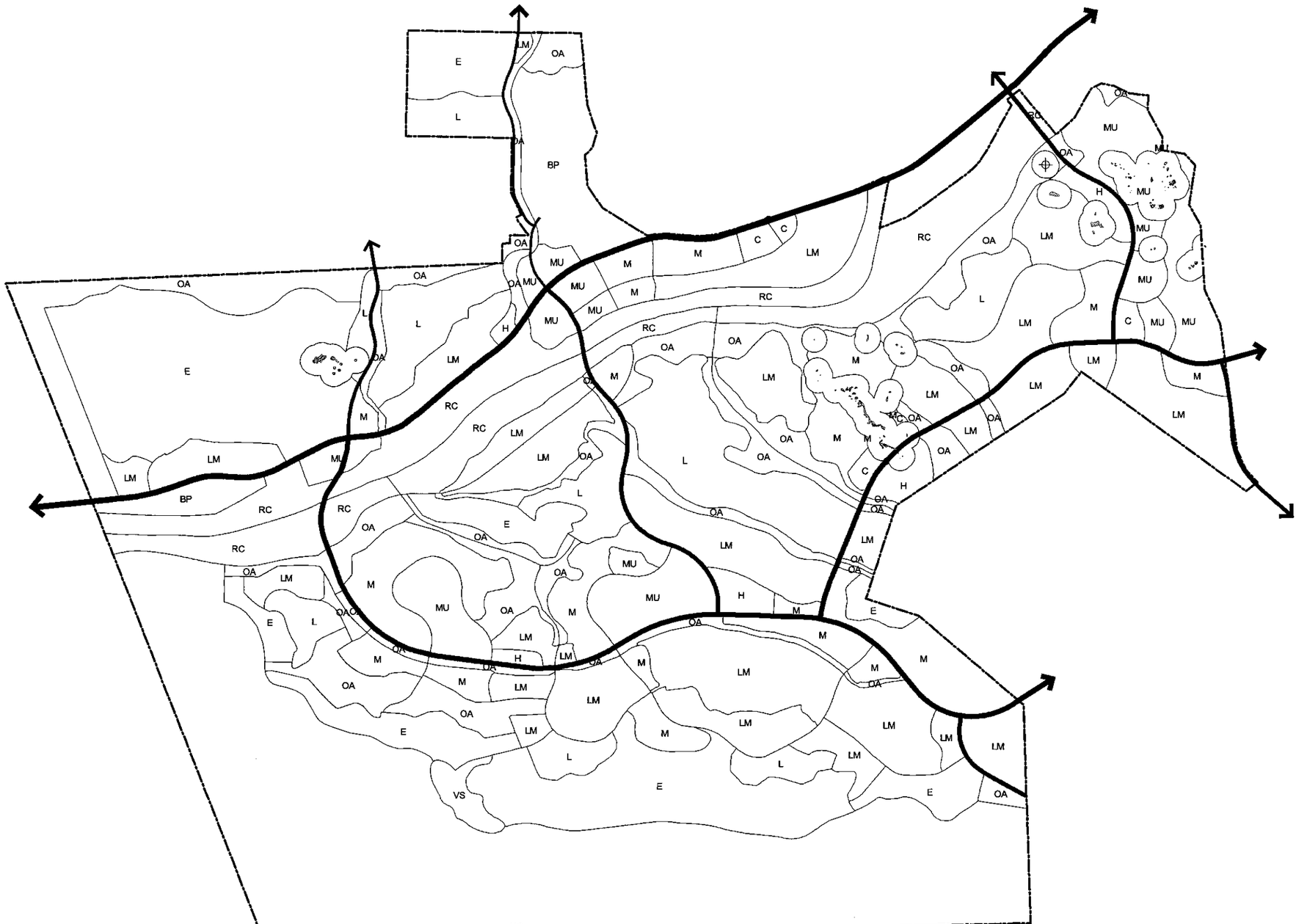
Table 2.7-3, Alternative 9, Spineflower Avoidance Alternative II Statistical Summary provides a breakdown of the land uses and intensities proposed for Alternative 9.

Table 2.7-3
Alternative 9
Spineflower Avoidance Alternative II Statistical Summary

Land Uses		Gross Acres	Dwelling Units	Square Footage
Residential:				
Estates		1,305	416	
Second Units			416	
Low		736	664	
Low Medium		1,769	5,914	
Medium		792	7,068	
High		108	2,151	
	Subtotal	4,710	16,629	
Mixed-Use and Non-Residential:				
Mixed Use[1]		550	3,652	3,309,698
Commercial		51		379,221
Business Park		245		1,295,000
Water Reclamation Plant		11		
	Subtotal	857	3,652	4,983,919
Major Open Areas:		6,396		
	Totals	11,963	20,281	4,983,919

Source: FORMA (November2002).
[1]Mixed uses include Commercial and Residential uses.

It is assumed, for the sake of this impact analysis, that units under the Estate, Low, and Low-Medium Residential designation would be single family detached units, and that units under the Mixed Use and



NEWHALL RANCH

L E G E N D

- LOS ANGELES SUNFLOWER
- SPINEFLOWER LOCATION (w/ 300' Buffer)

LAND USE CATEGORIES

- E — ESTATE RESIDENTIAL
- L — LOW DENSITY RESIDENTIAL
- LM — LOW-MEDIUM DENSITY RESIDENTIAL
- M — MEDIUM DENSITY RESIDENTIAL
- H — HIGH DENSITY RESIDENTIAL
- C — COMMERCIAL
- BP — BUSINESS PARK
- MU — MIXED USE
- VS — VISITOR SERVING
- OA — OPEN AREA
- RC — RIVER CORRIDOR
- HC — HIGH COUNTRY
- ROADS

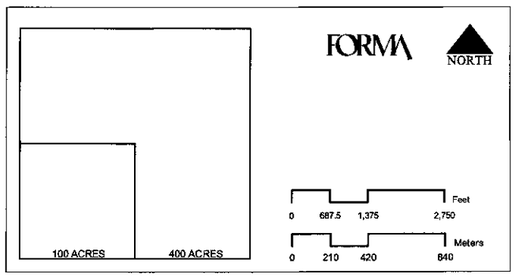


Figure 2.7-3

ALTERNATIVE 9
SPINEFLOWER AVOIDANCE
ALTERNATIVE II

Medium designations would be multi-family attached units. The following discussion compares the environmental impacts of Alternative 9 to those of the Specific Plan.

(a) Geotechnical and Soil Resources

Alternative 9 would have a smaller development footprint than the Specific Plan; grading in the eastern and western portion of the Mesas Village, and in Riverwood north of SR-126 that would have occurred under the Specific Plan would not occur under Alternative 9. Development activity subject to the effects of seismic events would occur under Alternative 9. However, because site development under Alternative 9 would require less ground disturbance than the Specific Plan and would require less earth movement, from a geotechnical standpoint, Alternative 9 would be environmentally superior to the Specific Plan.

(b) Flood

Urban runoff that would be generated under Alternative 9 would be conveyed and discharged into the Santa Clara River. Like the Specific Plan, it is expected that implementation of Alternative 9 would also reduce runoff quantities from the Specific Plan site from current runoff conditions by reducing the amount of debris in the runoff. However, because the Specific Plan would have more developed area than Alternative 9, the amount of debris in the runoff from the Specific Plan site would be more under Alternative 9 than under the Specific Plan and, therefore, so would total runoff quantities. Consequently, the Specific Plan is superior to Alternative 9.

With respect to runoff quality, development under Alternative 9 would be required to comply with the same Regional Water Quality Control Board standards as the Specific Plan and no environmentally superior alternative can be identified.

(c) Traffic/Access

Implementation of Alternative 9 would result in a decrease in trips. Specifically, average daily trip generation on the Specific Plan site would decrease from 334,000 trips to approximately 310,897 trips (a seven percent decrease). Alternative 9 would decrease traffic impacts on local roadways, would require fewer roadway improvements off the Specific Plan site than the Specific Plan, and would be environmentally superior to the Specific Plan with respect to traffic/access impacts.

(d) Noise

With a reduction in the amount of development on the site and associated trip reduction would be a reduction in noise impacts on and in the vicinity of the site. The analysis presented in the Revised Draft EIR determined that only one off-site location within the vicinity of the Specific Plan site - the Travel Village RV Park - would be significantly impacted by Specific Plan-generated noise. A reduction in the Newhall Ranch traffic volumes of approximately seven percent would reduce the noise level increase at the Travel Village RV Park; however, noise would still exceed the off-site mobile source thresholds of significance. Therefore, Alternative 9 would be environmentally superior to the Specific Plan with respect to noise impacts due to the overall reduction in noise levels generated by the Specific Plan.

(e) Air Quality

Because less on-site grading would occur under Alternative 9, the total amount of grading and construction-related air quality impacts would be less than those of the Specific Plan. In addition, Alternative 9 would generate less traffic than the Specific Plan. The effect of this reduction in building space and vehicle trips on air emissions is provided below.

Emissions Source	Emissions in Pounds per Day				
	CO	VOC	NO_x	SO_x	PM_{10}
Proposed Specific Plan	17,575.7	835.6	3,015.6	315.9	43,185.6
Spineflower Avoidance Alternative II	16,359	778	2,807	294	40,199
Recommended SCAQMD Thresholds	550.0	55.0	55.0	150.0	150.0

Source: Impact Sciences, Inc., November2002.

As shown, Alternative 9 would generate fewer air emissions than the Specific Plan. Therefore, it would be environmentally superior to the Specific Plan with respect to air quality. The emissions generated by Alternative 9 would, however, exceed the thresholds recommended by the SCAQMD and, as with the Specific Plan, would be considered significant.

(f) Biological Resources

Table 2.7-4 compares the acreage of habitats impacted by Alternative 9 with that impacted by the Specific Plan. As shown, approximately 112.3 fewer acres of sensitive habitats are impacted by Alternative 9 in non-SEA areas. Impacts to sensitive habitats in SEAs 20 and 23 would remain

unchanged. Given that a lesser amount of grading and its associated ground and habitat disturbance would occur, and given that there would be a reduction in site population with Alternative 9, the biological impact of Alternative 9 would generally be less than that of the Specific Plan.

Table 2.7-4
Comparison of Impact on Sensitive Habitats – Alternative 9

	W/Specific Plan (acres)	W/Alternative 9 (acres)	Net Change (acres)
Non-SEA Areas			
• Sensitive Habitats	2,313.3	2,201	(112.3)
• Other Habitats	2,970.9	2,862.6	(108.3)
Subtotal	5,284.2	5,063.6	(220.6)

Note: Impacts in SEAs 20 and 23 would remain unchanged under Alternative 9.

However, grazing activities would continue with Alternative 9 in the High Country SMA and in areas not within spineflower preserve boundaries. Also, the applicant has indicated that the Open Areas of the High Country Special Management Area would not be dedicated for public use, but would remain in private ownership with no provision for public access. From a biological standpoint, the reduction in grading and avoidance of most on-site spineflower populations under Alternative 9 could environmentally outweigh the loss to the public of the High Country Special Management Area. However, this alternative also allows a "take", or impact, to occur to small spineflower populations that are isolated and/or in other areas to allow for the construction of major infrastructure components, such as the extension of Magic Mountain Parkway. When compared with the Specific Plan with the proposed mitigation to spineflower impacts presented in **Section 2.6**, the preserved spineflower populations would provide a small degree of connectivity to open areas. However, the degree of connectivity would not be as great as would occur with the mitigation proposed for the Specific Plan. Nor would other proposed mitigation measures occur. Specific measures proposed within this Draft Additional Analysis that would not occur with this alternative include:

- the Agency consultation provisions proposed in **Section 2.6**;
- the provision of Spineflower Special Study Mitigation Overlays;
- the creation of managed preserves as described in **Section 2.6**;
- the connectivity and buffer provisions as described in **Section 2.6**;
- the provision for future engineering, design and grading review and modifications;
- the monitoring and management provisions as described in **Section 2.6**; and
- consultation provisions regarding ongoing agricultural activities.

In effect, under Alternative 9 populations of spineflower would essentially be surrounded by proposed development within 300 feet with fencing to prohibit trespass, thereby eliminating most connections to open space areas and all the active preserve management and consultation provisions proposed as mitigation in **Section 2.6**. Based on this information, Alternative 9 is not biologically superior to the Specific Plan with respect to impacts to the spineflower.

(g) Visual Qualities

Development intensities in the northeastern corner of the Specific Plan site along SR-126 and Commerce Center Drive would remain comparable to that of the Specific Plan, and visual impacts of this part of the site would remain essentially unchanged from that of the Specific Plan. However, because less development would be located along small portions of the bluffs south of the Santa Clara River than under the Specific Plan, slightly less development would be visible to travelers along SR-126. Alternative 9 was analyzed as follows based on the viewing location information provided in Section 4.7, Visual Qualities:

1. Viewing Location 1 (west of the site in Ventura County, along SR-126 looking east)

Under Alternative 9, development would appear generally the same from a visual perspective. The changes in the Specific Plan design would not be visible from this viewing location. A water reclamation plant would also be constructed under Alternative 9 in the same location as under the Specific Plan and would have a visual impact comparable to that of the proposed plant. Because generally the same amount of development would be visible from this viewing location under Alternative 9 than under the Specific Plan, Alternative 9 would similar visual impacts than the Specific Plan, and would not be the environmentally superior alternative with respect to visual impacts from Viewing Location 1.

2. Viewing Location 2 (on site, along SR-126 west of San Martinez Grande looking south)

Visual impacts from Viewing Location 2 would be similar under Alternative 9 than under the Specific Plan because the land uses changes shown in this alternative would not be visible from this location. Therefore, Alternative 9 is not environmentally superior to the Specific Plan with respect to visual impacts from Viewing Location 2.

3. Viewing Location 3 (on site, near the SR-126/Chiquito Canyon Road intersection looking south)

Under the Specific Plan and Alternative 9, Low-Medium and Medium Residential development is proposed south of the River and at Long Canyon and would be visible in the foreground of this viewshed. Mid-ground development under Alternative 9 would be visible to the same extent that it would be visible under the Specific Plan. However, the background view to the east of the Grapevine Mesa area in the Mesas Village might appear slightly less intense due to the fact that some land uses would be removed from this portion of the Specific Plan site in order to preserve in place spineflower populations. Therefore, Alternative 9 would have slightly less of a visual impact than the Specific Plan and would be environmentally superior to the Specific Plan with respect to visual impacts from Viewing Location 3.

4. Viewing Location 4 (at the northern site boundary on Chiquito Canyon Road looking south)

Under the Specific Plan, the proposed Business Park, Medium Residential development along Chiquito Canyon Road, and Low-Medium and Low Residential development south of the River would be visible from Viewing Location 4. The Business Park, Residential development along Chiquito Canyon Road, and Low Residential development south of the River would also be visible from this viewing location under Alternative 9. The Low-Medium Residential development proposed south of the River at Long Canyon would also still occur under this development scheme, and the same amount of Residential development south of the River would be visible in the distance under Alternative 9. Due to the extent of development still visible from this location, no noticeable visible change would occur under Alternative 9.

5. Viewing Location 5 (on site, along SR-126 on the west side of Castaic Creek looking south)

Although development would occur within this viewshed under Alternative 9, it would be slightly less intensive than under the Specific Plan. For instance, some of the Medium Residential development proposed in this viewshed south of the Santa Clara River would be replaced with the Open Area land use designation to preserve spineflower populations. To the east south of the river in the Airport Mesa portion of the Mesas Village, some of the Mixed-Use, High Residential and Low-Medium Residential areas would also be replaced with the Open Area land use designation. (see **Figure 2.7-3, Alternative 9, Spineflower Avoidance Alternative II**). Because development intensities visible from Viewing Location 5 would be slightly less under Alternative 9 than under the Specific Plan, visual impacts

would be less, making Alternative 9 environmentally superior to the Specific Plan with respect to visual impacts from Viewing Location 5.

6. Viewing Location 6 (off site, generally from the SR-126/I-5 Interchange looking west and southwest toward site)

Mixed use development south of the Santa Clara River in the Airport Mesa area would be slightly less visible from Viewing Location 6 under the Specific Plan and under Alternative 9. This is because some of the Mixed Use development would be replaced with the Open Area designation to preserve spineflower populations. The same would be the case further to the west in the Grapevine Mesa area as some visible Medium Residential land uses would be replaced with Open Area Therefore, the degree of visual impact under Alternative 9 would be slightly less than under the Specific Plan, making Alternative 9 marginally environmentally superior to the Specific Plan with respect to visual impacts from this viewing location.

7. Viewing Locations 7, 8, and 9 (off site, generally from Interstate 5 and points east, looking west and southwest toward site)

Some of the Mixed-Use development at the Airport Mesa area that would appear in the viewshed of Viewing Locations 7, 8, and 9 would be replaced under Alternative 9 with Open Area as spineflower populations are preserved. Therefore, Alternative 9 would be environmentally superior to the Specific Plan with respect to visual impacts from this viewing location.

8. Viewing Location 10 (Off Site, from the Rim of the Valley Trail, looking north toward site)

Views from the Rim of the Valley trail would be visually slightly less intense in appearance under Alternative 9 when compared with the Specific Plan, because any reductions in development at the Airport Mesa and Grapevine Mesa areas would be so slight in appearance (given the distance between the trail and the development area) as to be visually imperceptible.

10. Conclusion of Visual Comparison

Because portions of the Newhall Ranch Specific Plan visible from highly traveled visual corridors would have development replaced with Open Area under Alternative 9, this alternative would be environmentally superior to the Specific Plan.

(h) Cultural/Paleontological Resources

Because less ground disturbance would occur under Alternative 9, potential impacts to cultural and paleontological resources on the Specific Plan site would be less under Alternative 9 than if the Specific Plan were to develop as proposed. Therefore, Alternative 9 is environmentally superior with respect to cultural resources.

(i) Wastewater Disposal

The Specific Plan would generate 6.9 mgd of wastewater, while wastewater generation for Alternative 9 would be approximately 6.45 million gallons per day (mgd), all of which would be treated at an on-site water reclamation plant. Assuming that the on-site plant would be sized to treat all wastewater from Alternative 9, neither the Specific Plan nor Alternative 9 would have a significant impact relative to the treatment infrastructure. However, Alternative 9 would be environmentally superior to the Specific Plan with respect to wastewater disposal because less treated wastewater would be generated.

(j) Water Resources

Water demand for Alternative 9 would be approximately 16,553 acre-feet per year, including a potable water demand of 7,764 and a non-potable water demand of 8,789 acre-feet per year, respectively. The Specific Plan total water demand would be approximately 17,680 acre-feet per year, including a potable water demand of 8,645 and a non-potable water demand of 9,035 acre-feet per year, respectively. The decrease in residential units and non-residential development would decrease water demand under this alternative by approximately seven percent. Because this alternative would consume less water from potable water resources than the Specific Plan, it would be environmentally superior to the Specific Plan with respect to impacts on potable water resources.

(k) Education

Alternative 9 would generate approximately 8,078 students as compared to the 8,780 students that would be generated by the Specific Plan. Therefore, Alternative 9 is environmentally superior to the Specific Plan with respect to school impacts.

(l) Natural Gas/Electricity

Implementation of both the Specific Plan and Alternative 9 would require the use and expenditure of nonrenewable petroleum resources. Alternative 9 would consume approximately eight to 12 percent less petroleum resources than the Specific Plan. Although these energy resources are commercially available, Alternative 9 would consume less petroleum-based energy resources than the Specific Plan and would be environmentally superior to the Specific Plan.

(m) Police Services

Because less development would occur on the site under Alternative 9 and a smaller on-site population would result, it is expected that Alternative 9 would have less of an impact on the Sheriff's Department than the Specific Plan. For the same reasons, Alternative 9 would also have smaller demands for CHP and emergency services in the area of the Specific Plan site. As a result, Alternative 9 would be environmentally superior to the Specific Plan with respect to police services.

(n) Fire Services and Hazards

Because, Alternative 9 would result in less development and a smaller population on the Specific Plan site than would occur under the Specific Plan, there would be fewer Fire Department calls to the site than under the Specific Plan. Therefore, with respect to providing fire services to the Specific Plan site, Alternative 9 is environmentally superior to the Specific Plan.

(o) Environmental Safety

As discussed in Revised Draft EIR Section 4.5, Environmental Safety, potential impacts may result on the Specific Plan site if development occurs in the following locations:

- adjacent to historic and continuing oil and natural gas operations,
- in close proximity to the Southern California Edison electrical transmission lines,
- in close proximity to the Southern California Gas Company high pressure gas lines,
- adjacent to State Route 126, upon which hazardous wastes are transported,
- in close proximity to Chiquito Canyon Landfill,
- within the Castaic Lake dam inundation area, and
- adjacent to on-going agricultural operations.

The safety conditions under which Alternative 9 would be developed would be similar to those with development of the Specific Plan. The primary difference between development of Alternative 9 would be a reduction in site population, particularly in areas used in the past for oil and natural gas production. This results in less exposure to potential hazards, as unlikely as their occurrence might be. For this reason, Alternative 9 is superior environmentally to the Specific Plan with respect to environmental safety.

(p) Libraries

Based on County Library planning standards of 0.35 square feet of library facilities per capita and 2.0 books per capita, the Specific Plan would require a total of 20,897square feet of library facilities with 119,414 additional volumes for the library system's collection. In comparison, development under Alternative 9 would, according to County Library standards, require 19,171 square feet of library facilities and 109,550 volumes. Development under Alternative 9 would have less of an impact on County Library facilities than would the Specific Plan and would be environmentally superior to the Specific Plan.

(q) Parks, Recreation and Trails

Under County (and Quimby Act) requirements, development of the Specific Plan would require the applicant to provide 246 dedicated acres of local parkland; the Specific Plan as proposed would exceed this requirement, by a total of 6,175 acres for parks, recreation, and Open Area, including Neighborhood and Community Parks, a 15-acre lake, an 18-hole golf course, trails, the River Corridor and High Country SMAs, and other Open Area (see Revised Draft EIR Section 4.20, Parks, Recreation and Trails for a full discussion on this topic). Per County requirements, development under Alternative 9 would require dedication of a total of approximately 226 acres for parkland. The applicant has indicated that just the River Corridor, and not the High Country, would be preserved for public use under Alternative 9. Because the Specific Plan would provide more on-site recreational land than would Alternative 9, the Specific Plan would be environmentally superior to Alternative 9.

(r) Population, Housing and Employment

1. Population

Development of the Newhall Ranch would result in a resident population of 59,707 at buildout. This population is within SCAG's 1994 growth projections for the area, but not the County's 1990 projections

(see Revised Draft EIR Section 4.21, Population, Housing and Employment for further discussion). Alternative 9 would result in approximately 54,775 persons on the Newhall Ranch site. This population is well within SCAG's 1994 growth projections for the region, but not the County's 1990 projections.

2. Housing

Alternative 9 includes 20,281 dwelling units ranging in intensity from Estate to Medium Residential; however, Alternative 9 includes a sizable reduction in the amount of High Residential development (the number of High Residential units is reduced by 1,066 units to 5,803 units) and in the amount of Medium Residential development (the number of Medium Residential units is reduced by 584 units to 7,068 units). This housing is consistent with SCAG's 1994 adopted forecasts for the region, but not the County's 1990 forecast (see Revised Draft EIR Section 4.21 for further discussion). Therefore, these units are part of SCAG's planned growth of the area, but not the existing County's projections.

However, because the Specific Plan would include a greater number of High and Medium Residential units than Alternative 9, the Specific Plan would provide a wider range of housing units that would serve a broader range of socioeconomic groups than Alternative 9. A reduction in the amount of High and Medium Residential units with Alternative 9 would also result in a decrease in the amount of affordable housing units on the site and in the region.

3. Employment

Development of the Newhall Ranch would result in an employment population of 19,226. Development consistent with Alternative 9 would generate 16,582 on-site employment opportunities. SCAG forecasts 17,500 jobs for 2015 in the census tracts that overlie the Specific Plan site; therefore, the Specific Plan's estimated employment exceeds SCAG's forecast, but Alternative 9 would provide fewer jobs than the SCAG forecast. The Santa Clarita Valley has been identified by SCAG as an area in need of additional employment opportunities. Under Alternative 9, the jobs to housing ratio would be increased from 0.78 to 0.82, which is more jobs rich than the Specific Plan. However, the Specific Plan provides 2,644 more jobs than does Alternative 9. Consequently, from an employment standpoint, the Specific Plan is superior to Alternative 9.

As with the Specific Plan, the population, housing and employment generated by Alternative 9 do not fall within the County's 1990 projections. However, SCAG projects much more growth in this area than does the County. As would the Specific Plan, Alternative 9 would require a General Plan Amendment.

Given the differences between County projections and SCAG projections, the dates of those projections (1990 and 1994, respectively), and the implications to population and housing forecasts resulting from each, no environmental preference with respect to population and housing can necessarily be concluded.

(s) Solid Waste Disposal

At buildout, the Specific Plan would generate approximately 47,741 tons of solid waste per year. In comparison, Alternative 9 would generate approximately 43,900 tons of solid waste annually. Alternative 9 would also generate smaller amounts of bio-solids resulting from the wastewater treatment process. Given the smaller solid waste generation totals associated with Alternative 9, implementation of Alternative 9 would be environmentally superior to the Specific Plan with respect to solid waste disposal.

(t) Agricultural Resources

There are 547 acres of prime farmland and 48 acres of unique farmland on the Specific Plan site. Development of the site consistent with the Specific Plan would result in the loss of this land to urban uses. Development of the site under Alternative 9 would permit development in areas of the site that are designated as prime farmland and unique farmland (specifically, development would occur on prime farmland north and south of SR-126, west of Chiquito Canyon Road, north of Potrero Canyon just south of the River, and on Potrero Mesa, and would occur on unique farmlands of importance located north of Potrero Canyon just south of the River). However, development would occur on fewer acres of farmland under Alternative 9 than would the Specific Plan because farming activity on the Grapevine and Airport Mesa areas of the site would no longer occur in some areas in order to preserve populations of the spineflower. Therefore, Alternative 9 is environmentally superior to the Specific Plan with respect to the loss of agricultural land.

In general, the conversion of prime agricultural land is irreversible and is, therefore, considered an unavoidable significant impact. However, in light of the continuing trend by the County of Los Angeles to convert cultivated lands to urban uses to accommodate growth, and the fact that the prime agricultural land on the Specific Plan site is already impaired (i.e., relatively difficult and less economical to farm) and, therefore, is generally of lower value than larger and better situated parcels found to the west, the loss of agricultural productivity on prime agricultural land under such circumstances is not considered a significant impact. Thus, there is no environmentally superior alternative with respect to loss of agricultural productivity on the Specific Plan site.

Conclusion

Because some of the environmental impacts of the Specific Plan would be avoided or minimized with Alternative 9, it is environmentally superior to the Specific Plan in some respects (e.g., air quality impacts, traffic impacts, noise impacts, etc). However, Alternative 9 has been rejected in favor of the Specific Plan because Alternative 9 too narrowly limits the range of housing opportunities provided and because many of the basic objectives of the Specific Plan identified in the Project Description of this EIR (Revised Draft EIR Section 1.0) would not be achieved (see information presented below for examples). In addition, when compared with the Specific Plan with the proposed mitigation to spineflower impacts, the preserved spineflower populations would not be connected to proposed open areas to the same degree as they would be under the mitigation proposed for the Specific Plan. In addition, grazing activities would continue with Alternative 9 in the High Country SMA and in areas not within spineflower preserve boundaries. Also, the applicant has indicated that the Open Areas of the High Country Special Management Area would not be dedicated for public use, but would remain in private ownership with no provision for public access. From a biological standpoint, the reduction in grading and avoidance of most on-site spineflower populations under Alternative 9 could environmentally outweigh the loss to the public of the High Country Special Management Area. However, this alternative also allows a "take", or impact, to occur to small spineflower populations that are isolated and/or in other areas to allow for the construction of major infrastructure components, such as the extension of Magic Mountain Parkway. When compared with the Specific Plan with the proposed mitigation to spineflower impacts presented in **Section 2.6**, the preserved spineflower populations would provide a small degree of connectivity to open areas; however, the degree of connectivity would not be as great as would occur under the mitigation proposed for the Specific Plan. Nor would other proposed mitigation measures occur. Specific measures proposed within this Draft Additional Analysis that would not occur with this alternative include:

- the Agency consultation provisions proposed in **Section 2.6**;
- the provision of Spineflower Special Study Mitigation Overlays;
- the creation of managed preserves as described in **Section 2.6**;
- the connectivity and buffer provisions as described in **Section 2.6**;
- the provision for future engineering, design and grading review and modifications;
- the monitoring and management provisions as described in **Section 2.6**; and
- consultation provisions regarding ongoing agricultural activities.

In effect, under Alternative 9 populations of spineflower would essentially be surrounded by proposed development within 300 feet with fencing to prohibit trespass, thereby eliminating the connection to open space areas and the active preserve management and consultation provisions proposed as mitigation in **Section 2.6.** Based on this information, Alternative 9 is not biologically superior to the Specific Plan with respect to impacts to the spineflower.

Other Specific objectives not met or impeded to some extent with Alternative 9 are listed below:

- Provide a complementary and supportive array of land uses which will enable development of a community with homes, shopping, employment, schools, recreation, cultural and worship facilities, public services, and open space.

- Establish land uses and development regulations which permit a wide range of housing densities, types, styles, prices, and tenancy (for sale and rental).

- Adopt development regulations which provide flexibility to respond to and adjust to changing economic and market conditions over a long period of time.

- Retain a major public open space area which could act as a regional recreational park.

- Provide an extensive system of pedestrian, bicycle, and hiking trails within the Villages and hiking trails in the High Country and other open areas.

- Preserve the Santa Clara River corridor and adjacent uplands containing significant natural resources for their resource value, open space, and recreational use.

- Retain a major open space area and its natural vegetation as a wildlife or ecological preserve.

For all the reasons provided above, Alternative 9 has been rejected in favor of the proposed Specific Plan as mitigated.

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APPENDIX 2.5(a)

Newhall Ranch Updated Water Resources Impact Evaluation, prepared by CH2MHILL, dated November 2002

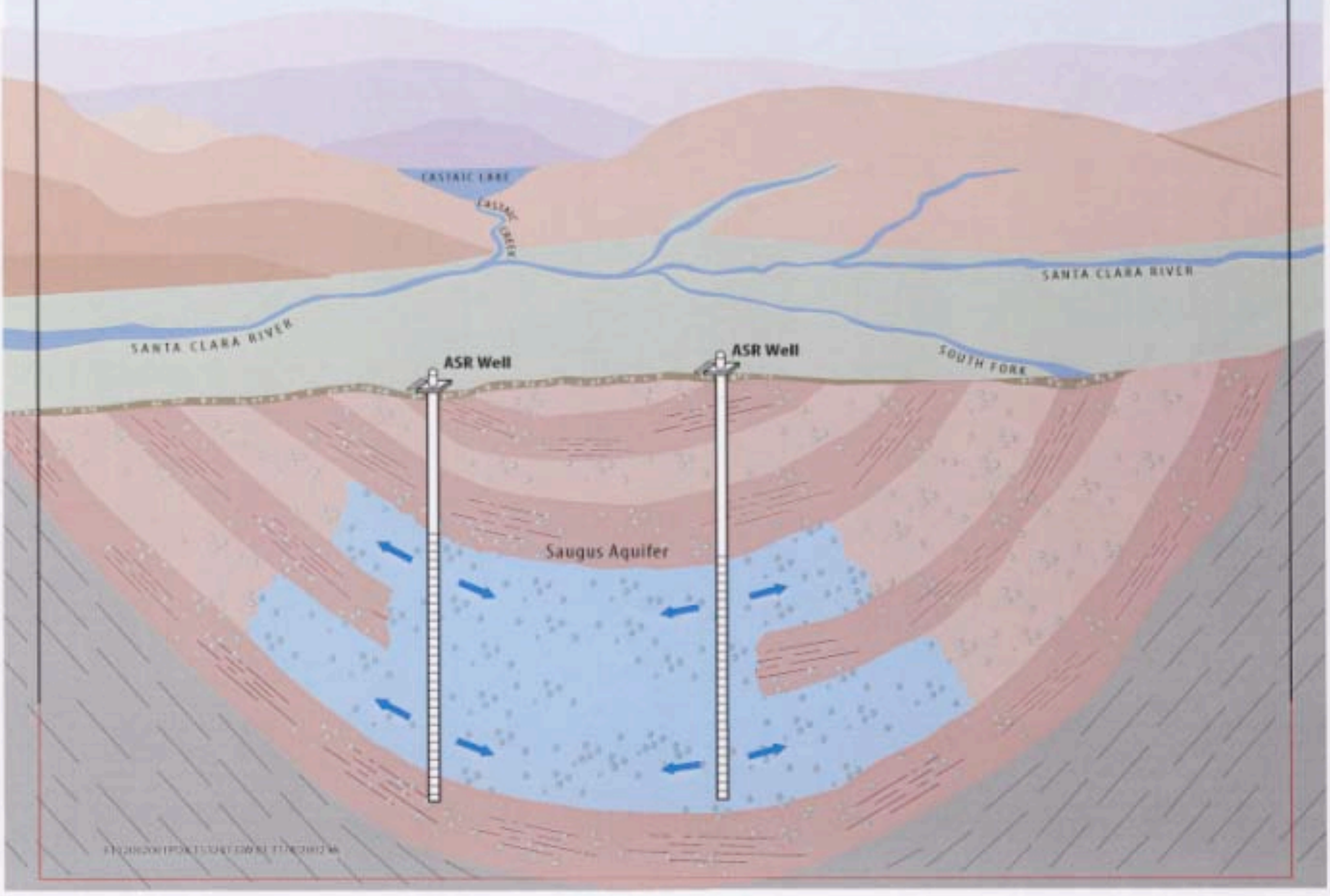
REPORT

Newhall Ranch Updated Water Resources Impact Evaluation

NEWHALL RANCH COMPANY

CH2MHILL

NOVEMBER 2002



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REPORT

Newhall Ranch Updated Water Resources Impact Evaluation

NEWHALL RANCH COMPANY

CH2MHILL

NOVEMBER 2002

This report was prepared by CH2M Hill under my overall direction. I am a Registered Geologist (#3397) and a Certified Hydrogeologist (#187) in the State of California.

Signed:

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Abbreviations and Acronyms

AF/yr	acre-feet per year
ASR	aquifer storage and recovery
cfs	cubic feet per second
CLWA	Castaic Lake Water Agency
cm/sec	centimeters per second
DAA	Draft Additional Analysis
DMS	Development Monitoring System
DWR	California Department of Water Resources
ET	evapotranspiration
ft/day	feet per day
ft/yr	feet per year
HC	high country
in/yr	inches per year
LACSD	Los Angeles County Sanitation District
M&I	municipal and industrial
OA	open area
RC	river corridor
SWP	State Water Project
VWC	Valencia Water Company
WRP	water reclamation plant
WY	water year

Introduction

As part of the Draft Additional Analysis (DAA) for Newhall Ranch (Impact Sciences, Inc., 2001a), an evaluation was conducted of the potential impacts of a proposed aquifer storage and recovery (ASR) system (CH2M HILL, 2001). The ASR report described the development of a groundwater flow model to address the following questions:

a. Is the Saugus Formation capable of storing (at a rate of 4,500 acre-feet per year [AF/yr]) excess California State Water Project (SWP) water, or other water, for later recovery during a drought period (when demand cannot be met entirely by regional water supplies)?

b. Will storing water in the Saugus Formation increase the rate of natural groundwater discharge to the Alluvial Aquifer and to the Santa Clara River and, if so, by how much?

c. If Saugus ASR wells are pumped at a rate of up to 4,100 AF/yr during a drought period to help meet the Newhall Ranch Specific Plan's water demands, will this reduce flows in the Alluvial Aquifer and Santa Clara River, thus affecting the Santa Clara River riparian ecosystem and downstream water users?

d. Will the ASR project result in changes in water quality within the Saugus Formation, the Alluvial Aquifer, and the Santa Clara River?

With respect to the project impacts on river flows, the primary conclusions from the analysis were the following:

a. Hydrologic records for the SWP indicate that a single dry year occurs on average once every 10 years, and a 3-year drought occurs on average once every 20 years. Consequently, banking of water will occur in more years than ASR pumping. Groundwater modeling simulations indicated that the ASR system will have a long-term positive effect (increase) on the contribution of groundwater to the Santa Clara River base flow. The increase in groundwater discharge to the river will be variable during a cycle of drought and non-drought years, but it has the potential to be as much as 33 AF/month.

b. A very slight reduction in groundwater baseflow and groundwater discharge to the Santa Clara River (10 AF/month [0.2 cubic foot per second or less) is predicted with continued pumping near the end of an extended drought; however, this volume is considered insignificant and is substantially less than the observed fluctuation in river flows on a month-to-month and year-to-year basis. This slight reduction in groundwater discharge is also substantially less than the expected fluctuations in future water reclamation plant (WRP) flows.

c. Decreases in Alluvial Aquifer groundwater levels as a result of ASR pumping are predicted to be less than 1 foot, and increases in Alluvial Aquifer groundwater levels as a result of ASR injection are predicted to be on the order of 1 to 3 feet (depending on location). This magnitude of fluctuation is less than the observed monthly or seasonal water level fluctuation in the Alluvial Aquifer and indicates that the ASR project will not adversely affect riparian vegetation.

An updated evaluation effort has been performed to address comments received during public review of the DAA and to address a change in the water supply plan. Unlike the original evaluation, which considered the effect on Santa Clara River flows of only the ASR program, the updated work evaluates the effect of the entire Newhall Ranch project (including, but not limited to, ASR) on river flows. This report documents the revised analysis and presents the following information:

a. The reasons for performing the updated evaluation

b. Changes to the methodology for evaluating impacts

c. Changes to the groundwater flow model, including model recalibration, that were made to accommodate the new methodology

d. Other processes (besides ASR operations) that affect future river flows

e. A review of the impact evaluation scenarios

f. Results of the new impact evaluations

g. A summary of the key conclusions from the reevaluation work

Reasons for New Evaluation

The new evaluation was conducted in response to (1) comments from Ventura County during public review of the DAA, and (2) subsequent changes to the methodology and the groundwater flow model that were identified as new analyses were performed. Specifically:

a. During meetings with the Newhall Ranch Company in April and May 2001 (during the public comment period), Ventura County and the United Water Conservation District requested that the analyses show total river flows (rather than only differences in river flows) upon full build-out of the Specific Plan.

b. In its June 18, 2001, comment letter, Ventura County commented that the DAA lacked an analysis of whether converting groundwater from agricultural use to municipal supply for the project would reduce irrigation return flows (and, hence, groundwater discharges to the river and total river flows). The conversion of groundwater use was a change in the water supply plan that occurred after the original ASR impact evaluation work was completed. On the basis of this comment from Ventura County, the new modeling effort redefined the impact evaluation as total project impacts, including ASR, whereas the previous impact analysis focused on ASR alone.

c. While the technical analysis for the response to Ventura County's comment about the conversion of groundwater use was being performed, it was discovered that the historical stream gaging record for the Blue Cut area (near the Los Angeles County/ Ventura County line) had been incorrectly entered into the database. During the ASR modeling effort, the stream gaging data had been used to estimate the amount of groundwater discharging to the river, and this groundwater discharge term was a variable to which the groundwater flow model was calibrated. Evaluations of the database error indicated that the estimates of groundwater discharge presented in the ASR report (CH2M HILL, 2001) were only 10 to 20 percent of the discharges estimated

from the corrected gaging data. On the basis of the reevaluation of groundwater discharge to the river, it was concluded that the model required recalibration.

After the model was recalibrated, it was used to evaluate the effect of converting groundwater supplies from agricultural use to municipal use. As discussed in the responses to Ventura County's comments (Impact Sciences, Inc., 2001b), the new analyses of potential river impacts were found to be consistent with the conclusions presented in the DAA (Impact Sciences, Inc., 2001a). Specifically, the new analyses indicated that the combined effect of all project-induced changes in the hydrologic system (including conversion of groundwater use) would be similar to the effects described in the DAA:

a. River flows would generally be greater upon full build-out of the project (including ASR and conversion of groundwater use).

b. During the last year of a 3-year drought, such as the drought that occurred during water years 1990 through 1992, river flows would be slightly reduced due to full build-out of the Specific Plan.

Changes to Impact Evaluation Methodology

The following changes were made to the impact evaluation methodology since the analysis presented in the DAA was performed:

a. The analysis was expanded to analyze the effects of all project-induced changes in water use on the quantity of river flow crossing the County Line. The original analysis focused only on ASR impacts to the river, but the new analysis also evaluated the impacts from:

   i. Implementing ASR, using the same water volumes and timing for the injection and pumping cycles as described in the original ASR report (CH2M HILL, 2001)

   ii. Discontinuing current agricultural irrigation practices (which consist of irrigating with an average of 7,038 AF/yr obtained from Alluvial Aquifer wells)

   iii. Irrigating urban lands within the Newhall Ranch development (12,050 AF/yr, using potable and non-potable water supplies)

   iv. Increasing future direct discharges to the river from the Newhall Ranch WRP and the Los Angeles County Sanitation District (LACSD) WRPs

b. The impacts were defined as changes in river flows, based on the combined changes in the four components (listed above) of the hydrologic system.

c. The analysis quantified the influence of geology on deep percolation rates and river flows in detail. Specifically, the analysis evaluated the differences in irrigation return flows from the three different geologic units that are exposed at the ground surface within the Newhall Ranch development boundaries. The three geologic units are the Alluvial Aquifer, the Saugus Formation, and the Pico Formation. In the updated impact evaluation, irrigation water volumes that are applied to the Pico Formation in excess of evapotranspiration (ET) demands are assumed to be routed directly to the Alluvial Aquifer, based on the low permeability and lack of water-adsorbing capability of the bedrock that makes up the Pico Formation.

d. Both within and outside of Newhall Ranch, deep percolation rates were refined to more closely match existing and anticipated land uses, as well as the locations of irrigated lands with respect to surficial geology.

Changes to Groundwater Flow Model

Changes to the groundwater flow model consisted of the following:

a. Recalibrating the model to the higher estimates of groundwater discharges to the river. This involved changes to hydraulic parameters for the Alluvial Aquifer, as well as refinements in the magnitudes of certain water use terms.

b. Redefining the rates and locations of future water use and deep percolation. This was performed primarily for the predictive model simulations and consisted of adjusting the locations of future irrigation within and outside of Newhall Ranch.

The changes to the groundwater flow model are summarized in Table 1 and are discussed below.

Model Recalibration

The recalibration effort was preceded by reevaluation of:

a. Groundwater discharges to the river during average and drought years

b. The hydraulic conductivity of the Alluvial Aquifer

c. The thickness of the Alluvial Aquifer in the Blue Cut/County Line area (where river flows have been measured)

d. Newhall Land and Farming Company agricultural water use (Alluvial Aquifer pumping rates, irrigation volumes, and irrigated acreage)

e. Deep percolation rates beneath golf courses

These data reevaluation efforts are discussed below, followed by the results of the recalibration process.

Groundwater Discharges to the River

Hydrograph separation techniques were applied to the corrected daily streamflow data for the County Line gage to estimate historical groundwater discharges to the river within the Santa Clarita Valley. The hydrograph separation was performed for calendar years 1953 through 1999 using the following five steps:

a. For each day, the average daily flow at the County Line gage in cubic feet per second (cfs) was converted to acre-feet of volumetric flow for the day.

b. The daily flows from the Castaic Dam and the Castaic Creek South gage were subtracted from the County Line flow. These data reflect surface water flow from tributaries. Data from the Castaic Creek South gage were used through June 1977. Beginning in July 1977, operational data for Castaic Lagoon (presented in annual reports by the California

Department of Water Resources [DWR]) were used to estimate surface flow contributions from Castaic Creek.

c. The discharges of treated effluent from WRPs owned by LACSD were subtracted. This was performed for calendar years 1975 and later, as 1975 was the first year that such records were available.

d. The resulting day-to-day trends in streamflows were scrutinized for days when notably elevated flows occurred suddenly. These days were considered to be dominated by storm flow. In some cases, the elevated flows lasted only for short durations (2 to 5 days). In other cases, flows remained elevated for several days but showed steady declines, indicating that only the first period of the elevated-flow period was dominated by surface runoff.

e. On all other days, storm flow was considered to be minimal or zero, and the flow values calculated for days not dominated by storm flow were assumed to represent river base-flow (that is, groundwater discharge to the river). For each month, an average flow was calculated for these non-storm days. The average flow was then converted to a total flow for the month, and the monthly flow volumes were summed to come up with the total flow for each year.

Table 2 presents the annual calculations from the hydrograph separation analysis. Table 3 presents summary statistics for the entire 47-year period that was analyzed, as well as for shorter time frames. Tables 4 and 5 show dry-year, average-year, and wet-year statistics for the entire period of record and the shorter time frames. The short time frames are:

a. Calendar years 1953 through 1965, which were years of primarily agricultural water use with no WRP operations (that is, no WRP discharges were occurring to the river). This 13-year period was also characterized by 8 years of below-normal rainfall.

b. Calendar years 1975 through 1999, which represent the first 25 years of urbanization, including SWP water importation and WRP operations. This 25-year period was characterized by 12 years of below-normal rainfall, and rainfall volumes in general were higher (19 inches per year [in/yr] average, versus 15.5 in/yr average for 1953-1965).

c. Calendar years 1953 through 1999, excluding 1966 through 1974 (which were years that WRP discharges occurred but were not recorded).

The corrected daily streamflow data and the hydrograph separation technique indicate the following:

a. Summary statistics in Table 3 for all types of rainfall years (dry, normal, and wet) show that average groundwater discharges to the river during 1953-1965 were on the order of 2,500 AF/yr (3.5 cfs). Average groundwater discharges to the river were on the order of 14,000 to 22,000 AF/yr (19 to 31 cfs) during 1975-1999 because of more rainfall, increasing urbanization, and increasing importation of water from outside the valley.

b. For average-rainfall years only, median and average groundwater discharges to the river were about 20,500 and 23,500 AF/yr (28 to 32 cfs), respectively, during 1975-1999 (Table 4); about 12,600 and 19,100 AF/yr (18 to 26 cfs), respectively, for the entire historical record (Table 5); and about 4,000 AF/yr (5.5 cfs) during 1953-1965 (Table 4).

c. For drought years only, Table 4 shows that groundwater discharges to the river ranged from 400 to 4,900 AF/yr (0.5 to 7 cfs) during 1953-1965 and from 3,600 to 25,700 AF/yr (4 to 35 cfs) during 1975-1999. Median and average discharges during drought years were 1,600 and 2,200 AF/yr (2 and 3 cfs), respectively, during 1953-1965, and 11,800 and 12,200 AF/yr (16 and 17 cfs), respectively, during 1975-1999. The 1975-1999 discharges for drought years are notably higher than the 1,000- to 3,000-AF/yr (1- to 4-cfs) range for drought years that was described in the original ASR report (CH2M HILL, 2001).

On the basis of the results of the hydrograph separation analysis, recalibration of the long-term steady-state model was performed by simulating average rainfall and altering aquifer parameters until the model simulated the estimated groundwater discharge term for average-rainfall years. The model was then re-run for drought conditions to check how well it simulated the range of estimated groundwater discharge rates for typical years of below-normal rainfall.

Alluvial Aquifer Hydraulic Conductivity

The higher rates of groundwater discharge to the river required the riverbed permeability to be raised during calibration, which in turn required the hydraulic conductivity of the Alluvial Aquifer to be lowered in the western portion of the valley. In recognition of this change, a review of data from short-term electrical performance pumping tests (Edison tests) for Alluvial Aquifer production wells was performed to evaluate whether recorded drawdowns and pumping rates were consistent with hydraulic conductivity values in the original model. This review was performed for wells throughout the Alluvial Aquifer and resulted in changes to the horizontal hydraulic conductivity of the Alluvial Aquifer near the western and eastern boundaries of the revised model. Figure 1 shows the areal distribution of hydraulic conductivity in the Alluvial Aquifer that is programmed into the final recalibrated model. Compared with the original model, the horizontal hydraulic conductivity was:

a. Increased from 300 to 400 feet/day along the Santa Clara River upstream of Bouquet Canyon

b. Decreased from 500 to 150 feet/day along the river downstream of Castaic Creek

c. Unchanged in all other areas

Alluvial Aquifer Thickness

The saturated thickness of the Alluvial Aquifer was decreased at the westernmost end of the valley, in the area at and immediately east of the County Line (where the Saugus Formation is absent). In this area, the saturated thickness was gradually reduced from 100 feet at the eastern end of this area to 40 feet at the County Line. (See Figure 2.) At the former Blue Cut stream gaging station, which is located within a mile downstream of the County Line, a field reconnaissance conducted during model calibration indicated that the streambed and northern bank of the river lie on bedrock of the Pico Formation. In this area, the river lies along the north side of the alluvial valley, and Alluvial Aquifer sediments are present across the remaining width of the valley. Hence, at the gaging station and at Blue Cut (which is immediately downstream), a small amount of groundwater discharge is thought to occur through Alluvial Aquifer materials of limited saturated thickness (based on this field recon-

naissance and on previous investigations [DWR, 1989]). The saturated thickness of 40 feet at the County Line was established in the model on the basis of geotechnical studies conducted at the site for the Newhall Ranch WRP.

The saturated thickness of the Alluvial Aquifer was not changed anywhere else in the model.

Agricultural Pumping and Irrigation

A review of detailed agricultural pumping records identified the need for small (less than 10 percent) changes in pumping rates from wells owned by the Newhall Land and Farming Company. More significantly, the amount of irrigated acreage was increased on the basis of improved mapping, and the amount of irrigation return flows to groundwater was increased from 0.4 foot /year to nearly 3 feet/year. The increase in irrigation return flows was derived from water use, irrigated acreage, crop type, and crop water requirement data presented in Appendix 2.5(m) of the DAA (Impact Sciences, Inc., 2001a). On the basis of these changes, the amount of deep percolation resulting from existing agricultural irrigation practices within the valley was increased from 144 AF/yr to 2,177 AF/yr.

Deep Percolation Beneath Golf Courses

The amount of return flows to groundwater resulting from golf course irrigation was increased from 10 percent of applied water to 30 percent of applied water. This estimate was based on information suggesting that golf courses tend to over-irrigate beyond the water demand requirements of grassy areas in order to maintain the quality of the greens. Because of the very limited existing golf course acreage, this was a very minor adjustment to the overall water balance of the model.

Model Recalibration Process

The recalibration process was carried out using the same calibration data as in the original modeling effort:

a. Generalized flow patterns and groundwater elevations in the Alluvial Aquifer, as depicted in a map prepared by Richard C. Slade & Associates, LLC (1986, Plate 5) for the fall of 1985

b. Estimated contributions of groundwater to flows in the Santa Clara River

c. Observed water level responses during ASR injection and pumping at Valencia Water Company (VWC) well 205 and during pumping at VWC well 201

Recalibration runs were performed by simulating average pumping during the period 1991 through 1993, as described in the calibration effort for the original model (CH2M HILL, 2001), then running the model in steady-state mode using five different rainfall rates to test the model's ability to simulate groundwater discharges to the river under a variety of rainfall conditions. Simulations were performed for:

a. Long-term median rainfall (for the entire period of record at the Newhall-Soledad gage [1883 through 1999])

b. A 2-year local drought observed in calendar years 1989 and 1990

c. Typical drought conditions observed between 1975 and 1999

d. Typical conditions in years of near-normal rainfall dating back to 1953 through 1999

e. Typical conditions in years of near-normal rainfall from 1975 through 1999

Further details regarding the rainfall and infiltration rates specified in each run are provided in the discussion of results, below.

Model Recalibration Results

During the recalibration process, it was determined that adjustments to hydraulic parameters were necessary for the Alluvial Aquifer (as discussed above) and for the streambed of the Santa Clara River. However, these changes did not alter the model's simulation of the ASR injection and pumping events that were conducted in the Saugus Formation. This is consistent with the observed absence of a hydraulic response in the Alluvial Aquifer monitoring well that is situated near the ASR test well.

Figure 3 compares measured and simulated water table elevations for the Alluvial Aquifer east of I-5. The figure shows the comparison for both the original model and the version of the recalibrated model using the 1883-2000 median rainfall. Figure 4 is a similar figure for the Alluvial Aquifer wells located west of I-5. Each figure shows the measured elevations as ranges of values because of the substantial temporal variability of the data and the uncontrolled manner in which the data have been collected over time. The figures show that the recalibrated model simulates Alluvial Aquifer groundwater elevations reasonably well, and that the comparison between modeled and measured elevations is similar for the original model and the recalibrated model.

Tables 6 and 7 summarize the hydraulic parameters for the Alluvial Aquifer and Saugus Formation in the original model and in the version of the recalibrated model that simulates long-term (1883-1999) median precipitation. Table 6 shows that the ranges of horizontal and vertical hydraulic conductivities in the Alluvial Aquifer were changed, although the ratio of horizontal to vertical hydraulic conductivity was unchanged. Table 6 also shows that the vertical hydraulic conductivity of the streambed was raised from 0.3 feet/day to 5 feet/day in the western portion of the model, where groundwater discharges to the river. In addition, Table 6 shows that the other aquifer properties were unchanged (the horizontal and vertical hydraulic conductivity of the Saugus Formation; the storage coefficient for the Saugus Formation; and the specific yield for the Alluvial Aquifer).

Table 8 presents the simulated rainfall, infiltration rate to groundwater, and groundwater discharge to the river for each of the five hydrologic conditions that were evaluated. Table 8 also compares the simulated groundwater discharge to the river with the discharges estimated from the hydrograph separation process described earlier. The results indicate that the recalibrated model is able to simulate groundwater discharge rates to the river under a variety of local hydrologic conditions. Under the present-day conditions of increased urbanization and water importation (1975-1999), the modeled discharge (18,700 AF/yr [26 cfs]) is about 10 to 25 percent lower than the best estimates of normal-year groundwater discharges (20,500 to 23,500 AF/yr [28 to 32 cfs]). However, predicted groundwater discharge rates for each of the four drought simulations are within the estimated ranges of discharge under drought conditions. This observation indicates that the model is suitable

for evaluating the potential impacts of Newhall Ranch, particularly during drought years, when the potential impacts are of greatest concern.

Changes in Irrigation Patterns

Currently, outdoor uses of water in the Santa Clarita Valley consist of agricultural irrigation in the western portion of the valley and urban outdoor water uses in populated areas (in the middle of the valley and to the east along the Santa Clara River). Because the updated impact evaluation considers the impacts from all aspects of the Newhall Ranch development (not only from the ASR program), the irrigation patterns were varied from one model simulation to another to reflect changes in land and water use associated with future development of and future growth outside Newhall Ranch.

The conversion of agricultural land as a result of development of Newhall Ranch and other future growth was modeled as follows:

a. Current agricultural irrigation consists of an average 7,038 AF/yr applied over 825 acres, of which 660 acres (80 percent) overlie the Alluvial Aquifer and 165 acres (20 percent) overlie the Saugus Formation. Deep percolation rates beneath these lands under existing conditions are estimated to be on the order of 34.6 in/yr (2.9 ft/yr), based on water use data and crop consumptive use requirements. This is in addition to precipitation infiltration rates (which vary from year to year but average about 2 in/yr). For model simulations of year 2045 conditions without Newhall Ranch, this representation of agricultural irrigation was unchanged.

b. For model simulations of Newhall Ranch, deep percolation rates arising from irrigation of these lands (and other lands within the Newhall Ranch footprint) were defined to have the same magnitude as urban irrigation rates estimated for other portions of the valley (18 in/yr for golf courses and 2.2 in/yr for other urbanized areas, as discussed below).

c. For agricultural lands located outside the Newhall Ranch footprint, irrigation was modeled for year 2045 conditions without Newhall Ranch. When Newhall Ranch was added to the model simulations of year 2045, it was assumed that these lands would not be irrigated because the source of the irrigation water will be diverted for urban use within Newhall Ranch. Hence, the agricultural lands outside the Newhall Ranch footprint would be farmed using dry-land methods or would be fallowed.

Urban irrigation was modeled as follows:

a. In urban areas, calculations presented in the original ASR report (CH2M HILL, 2001; see Table 5-4 and Section 5.1.6.3) indicate that average irrigation-related deep percolation rates in urbanized portions of the Santa Clarita Valley are on the order of 2.2 inches/yr. This number represents 10 percent of the irrigation water that is used outdoors for urban landscape irrigation and other uses. This volume of deep percolation is in addition to the recharge that occurs from precipitation alone. Also, as discussed previously, deep percolation beneath golf courses is estimated to be about 18 in/yr (30 percent of applied water).

b. Excluding Newhall Ranch, land use mapping by LACSD indicates that about 8,050 acres of land will be urbanized in the future within the area simulated by the model. Additional urban growth will occur outside the model boundaries. On the basis of the rate of deep percolation resulting from urban irrigation (2.2 inches/yr), the additional volume of deep percolation within the model boundary is estimated to be 1,475 AF/yr. This raises the total deep percolation from urban irrigation (excluding golf courses) from 3,183 AF/yr under current conditions to 4,658 AF/yr under year 2045 conditions (excluding Newhall Ranch) within the area simulated by the model. For year 2045 conditions with and without Newhall Ranch, the 2.2-in/yr deep percolation rate was added to the rainfall deep percolation rate (which varies from year to year) at all locations within the model area that were identified as existing and future urban land uses on the LACSD land use maps.

c. Within Newhall Ranch, deep percolation rates were specified at the same rates as estimated for similar land uses in other parts of the valley (18 in/yr for golf courses, and 2.2 in/yr in all other urbanized areas). No irrigation was simulated in portions of the development assigned the RC (river corridor), OA (open area), and HC (high country) land use designations.

Other Processes Affecting Future River Flows

The impacts of Newhall Ranch on river flows were developed from groundwater modeling simulations of future water use and hydrologic conditions in the Santa Clarita Valley, including ASR operations associated with the water supply plan for Newhall Ranch. The modeling results were coupled with estimated changes in the magnitudes of flow associated with other hydrologic processes that route water to the Santa Clara River. These other processes are:

a. Elimination of agricultural return flows upon full build-out of Newhall Ranch

b. Return flows of irrigation water applied to the portions of the Newhall Ranch development that overlie the Pico Formation

c. Direct discharge of reclaimed water to the river from the Newhall Ranch WRP

d. Future increases in direct discharges to the river of reclaimed water from WRPs owned and operated by LACSD

These processes are discussed below.

Elimination of Agricultural Return Flows

As discussed previously, deep percolation rates beneath agricultural lands under existing conditions are estimated to be on the order of 34.6 in/yr (2.9 ft/yr), based on water use data and crop consumptive use requirements. For the 825 acres of irrigated land, this is 2,393 AF/yr of return flow. Development of Newhall Ranch would eliminate this component of return flow from the river because the water source (Alluvial Aquifer groundwater pumping) would be converted from agricultural use to municipal and industrial (M&I) use to serve Newhall Ranch. This change was directly simulated in the groundwater flow model because the irrigated lands are within the modeled area.

Pico Return Flows

The portions of the Newhall Ranch development that overlie the Pico Formation are outside the area simulated by the groundwater flow model. These areas were not included in the groundwater flow model because the Pico Formation consists of consolidated rock units that (unlike the Alluvial Aquifer and the Saugus Formation) do not contain an extensive aquifer system (because of the low formation permeability). Hence, in these areas, irrigation waters that are not consumed by plants or by direct evaporation will migrate down-slope along (or just beneath) the ground surface and eventually infiltrate into the Alluvial Aquifer. This source of return flow to the Alluvial Aquifer is potentially significant because 3,698 acres of irrigated lands overlie the Pico Formation. This number represents 59 percent of the total urban-irrigated acreage within the Newhall Ranch development (6,243 acres), including a 180-acre golf course that will lie entirely over the Pico Formation. As indicated in Table 1, the total return flow volume due to irrigation on the Pico Formation is estimated to be 925 AF/yr (280 AF/yr from the golf course, and 645 AF/yr from other urbanized areas).

Increased River Flows from Newhall Ranch WRP

As discussed in the DAA (Impact Sciences, Inc., 2001a), the Newhall Ranch WRP will directly discharge 286 AF of treated effluent to the river each year. This discharge will take place only during the winter months, primarily December and January. The remaining effluent that is treated at the Newhall Ranch WRP (5,344 AF/yr) will be used for reclaimed water and will not be directly discharged to the river.

Increased River Flows from LACSD WRPs

Changes in direct discharges from the LACSD WRPs were accounted for in the evaluation of potential Newhall Ranch impacts under year 2045 hydrologic conditions. The magnitude of future direct discharges was estimated by using the following calculation process:

a. Annual indoor and outdoor water demands were calculated from projected future water demands in year 2045 (Impact Sciences, 2001a; see Table 2.5-4) and from existing data on the amount (33 percent) of urban water supply that has historically been used to meet indoor demands.

b. Monthly WRP flow records for recent years were then used with the year 2045 annual indoor demand to estimate monthly volumes of effluent requiring treatment at the LACSD WRPs in year 2045.

c. A portion of the monthly effluent volume was then subtracted to account for 17,000 AF/yr recycling that is planned as reclaimed water for outdoor irrigation use.

d. The resulting monthly volumes of effluent available for discharge to the river (after subtracting reclaimed water use) were compared with existing (year 2000) WRP discharges. If the future discharge in a given month was calculated to be less than the year 2000 discharge in that month, then the volume of reclaimed water was reduced in that month so that existing discharges to the river would be preserved for that month.

Table 9 presents the annual water demand and annual effluent volume calculations. Table 10 summarizes the calculations of monthly effluent generation, reclaimed water

volumes, and direct discharges to the river. Figure 5 shows a monthly graph of the relationship between current and year 2045 discharges to the river, including the recycling volume that is achievable in year 2045 if future discharges to the river are maintained at or above current discharges during each month of the year. As shown in Table 10 and Figure 5, the calculations indicate that direct discharges to the river from the LACSD WRPs would decrease during the months of June, July, and August if recycling were to be performed at 17,000 AF/yr. In order to maintain existing direct discharges to the river, the recycling volume would have to be reduced by a volume of about 1,000 AF over this 3-month period. Hence, these calculations indicate that about 16,000 AF/yr of treated effluent can be designated for reclaimed water use if effluent discharges to the river are to be maintained year-round.[1] Table 10 also shows that, under this operational scheme, the direct discharges to the river from the LACSD WRPs would be about 24,300 AF/yr, which is 5,600 AF/yr higher than current discharges (about 18,700 AF/yr).

Description of Impact Evaluation Scenarios

For the purpose of evaluating potential impacts of Newhall Ranch on the Santa Clara River, model simulations were performed for the following four hydrologic and land use scenarios within the Santa Clarita Valley:

a. Current conditions (defined as conditions during calendar year 2000)
b. Current conditions (year 2000) plus Newhall Ranch at full build-out
c. Future build-out of the valley in year 2045, excluding Newhall Ranch
d. Future build-out of the valley in year 2045, including Newhall Ranch

For each of these scenarios, transient model simulations were performed for historical hydrologic cycle conditions observed during the 19-year period of water year (WY) 1982 through WY2000. During this period, single-year droughts in the SWP system occurred on two occasions (WY1985 and WY1994), and a period of 3 consecutive drought years occurred during WY1990 through WY1992. The occurrence of drought years locally and in the SWP system are described in detail in Section 5.3 of the ASR report (CH2M HILL, 2001). Year-to-year variations in groundwater pumping and in ASR operations were simulated in the same manner as in the original impact evaluation, except for small corrections in the ASR volumes of injection and extraction (which were raised by about 70 to 80 AF/yr).[2] The derivation of the historical hydrologic cycle locally and in the SWP is summarized in Table 11, and the use of the historical cycle to derive the system operation details is presented in Tables 12, 13, and 14.[3] The simulated locations for the two ASR wellfields were also unchanged from the previous analysis (Figure 6).

[1] Newhall Ranch will receive 3,691 AF/yr of this LACSD reclaimed water from Castaic Lake Water Agency (CLWA) in order to meet a portion of the non-potable (outdoor irrigation) demand within Newhall Ranch. Consequently, the volume of CLWA reclaimed water available for use in the rest of the valley will be 12,309 AF/yr.

[2] The correction involved fixing a programming error in the model that caused the injection during non-drought years to be less than the targeted value of 4,500 AF/yr volume. During drought years in the SWP system, the ASR wells will be pumped at 4,100 AF/yr, which is approximately 91 percent of the annual injection rate during non-drought years.

[3] Tables 11, 12, 13, and 14 are equivalent to Tables 5-6, 5-7, 5-8, and 5-9 in the ASR report (CH2M HILL, 2001).

Impact Evaluation Results

Results of the updated impact evaluation are discussed in this section as follows:

a. The influence of ASR operations on river flows and groundwater elevations, including a comparison of the influences predicted by the revised and original models

b. The influence of the entire Newhall Ranch development (including ASR) on river flows, including a comparison of project-related impacts under two different hydrologic and land use conditions in the rest of the valley (corresponding to year 2000 and year 2045)

c. The influence of the entire Newhall Ranch development and other growth in the valley on river flows, compared with present-day conditions

Influence of ASR

ASR operations will influence river flows and groundwater elevations as described below.

Changes in Flow Arising from ASR Operations

Figure 7 shows monthly and annual changes in river flows that are predicted to occur as a result of ASR operations. The figure shows that ASR operations will have a greater influence on river flows than predicted with the original model. The increase in groundwater discharge to the river will be variable during a cycle of drought and non-drought years, but it has the potential to be as much as 200 AF/month (3.4 cfs), compared with 33 AF/month (0.5 cfs) in the original analysis. At the end of the simulated 3-year drought, river flows could be reduced by 43 AF/month (0.7 cfs), compared with 10 AF/month (0.2 cfs) in the original analysis. However, after the drought, ASR operations could increase river flows within 4 months of resuming injection. This recovery would occur because hydraulic pressure would be redistributed in the Saugus Formation and the Alluvial Aquifer once pumping ends and injection resumes.

Although ASR operations will have a greater influence than previously predicted, the overall influence of the system is beneficial (as predicted previously) for the following reasons:

- There are many more months and years of ASR-induced flow increases than flow decreases in the river. This is shown in Figure 8, which illustrates the cumulative month-by-month change in river flows over time.[4]
- The volume of water stored in the groundwater system by ASR operations will continue increasing during injection cycles and will decline during pumping cycles. (See Figure 9.)

The increases in river flows shown in Figure 9 are due to increased groundwater discharge to the river in the western portion of the valley and reduced groundwater recharge from the river in the central portion of the valley. The reduced groundwater recharge would arise from small increases in groundwater elevations occurring near the river in the Round Mountain area, where the river transitions from a losing stream to a gaining stream. ASR operations would increase groundwater elevations slightly in this area, thereby reducing the

[4] The flows in Figure 8 are calculated by adding the Figure 7 monthly flow values from one month to the next.

available storage capacity of the groundwater system to receive infiltrating streamflows. The reduction in streamflows can be thought of as "rejected recharge" that remains in the river and flows past the County Line gage. This rejected recharge represents an important component of the change in river flows that would arise from ASR operations. Model simulations indicate that the total volume of rejected recharge during the 19-year simulated period is about 7,000 AF out of the approximately 20,000 AF additional streamflow that occurs due to ASR operations. The total 20,000 AF increase in river flows during the 19-year period is nearly half of the net volume of 42,550 AF that would be injected.[5]

In summary, for a repeat of the hydrologic conditions that existed locally and in the SWP system from 1982 through 2000, Figures 8 and 9 shows that the ASR system has been designed to provide long-term benefits to the river and the groundwater system. This is indicated by the positive stored volumes that exist in the groundwater system at the end of the 19-year period, as well as by increase in river flows arising from increased groundwater discharges and rejected groundwater recharge that remains in the river.

Changes in Groundwater Elevations Arising from ASR Operations

Changes in groundwater storage volumes and river flows arising from ASR operations will occur because of changes in groundwater elevations. Changes in groundwater elevations will be greatest within the ASR wellfields, and in particular within the depth intervals in the Saugus Formation where injection will occur. Groundwater elevations in the ASR wellfields will increase during injection and decrease during pumping. These changes will also be transmitted from the injection locations upward and laterally to other areas. Figure 10 shows predicted groundwater elevations over time in the North ASR Wellfield and in three Alluvial Aquifer wells during the 19-year simulation period. Separate plots are shown for year 2045 conditions with and without ASR operations. The figure shows that the fluctuations in groundwater elevations over time are substantially greater in the North ASR Wellfield (Saugus Formation) than in the Alluvial Aquifer in the western portion of the valley.

To further illustrate the different responses in the Saugus Formation versus the Alluvial Aquifer, Figure 11 shows groundwater elevation changes that are induced by ASR operations. The figure shows that ASR injection induces about a 45- to 50-foot increase in Saugus Formation groundwater elevations, but no more than a 1-foot increase in Alluvial Aquifer groundwater elevations. During ASR pumping cycles, as much as 120 feet of drawdown is induced in the ASR wellfield (Saugus Formation), but the maximum drawdown in the Alluvial Aquifer is about 0.6 foot. Because the drawdown in the Alluvial Aquifer during ASR pumping cycles will be small and short lived, ASR pumping cycles will not cause long-term groundwater elevation declines in the Alluvial Aquifer, where riparian habitat is present along the river.

[5] During the simulated 19-year period, the net injected volume is the difference between the total injected volume and the total pumped volume. As shown in the right-hand column of Table 1, the total injected volume of water would be 63,000 AF (4,500 AF/yr during 14 non-drought years) and the total pumped volume would be 20,450 AF (4,090 AF/yr during 5 drought years).

Influence of Newhall Ranch

The net influence of the Newhall Ranch development on river flows arises from ASR operations, direct discharges of treated effluent into the river from the Newhall Ranch WRP, and the redistribution of the rates and locations of irrigation demands associated with converting groundwater use from agricultural to municipal demands. The net influence of Newhall Ranch was evaluated on a monthly and annual basis using historical gage data for the river; groundwater model simulations of conditions with and without the project; and additional calculations of the other processes that are not directly simulated by the model (return flows from the Pico Formation and direct discharges to the river from the Newhall Ranch WRP).

Figure 12 shows historical monthly river flows and equivalent flows for future (full valley build-out) conditions, with and without Newhall Ranch. Figure 13 shows similar plots of annual river flow. The plots show the following:

a. Modest differences in monthly river flows are evident for most of the time period when comparing the historical record with full valley build-out excluding Newhall Ranch (Figure 12). Non-drought years show discernible differences in the lowest flows, as the flows under future conditions will be greater than historical flows. During drought years, future summertime river flows will be lower than historical summertime flows.

b. On an annual basis, the historical river flows are less than the annual flows predicted for future valley build-out, whether or not Newhall Ranch is developed (Figure 13).

c. For future (full valley build-out) conditions with Newhall Ranch, the monthly and annual river flows are barely discernible from the flows without Newhall Ranch.

Figure 14 shows monthly and annual plots of potential impacts to the river arising from the development of Newhall Ranch, as measured against current (year 2000) conditions. Figure 15 shows equivalent plots using future valley build-out (year 2045) as the baseline condition for evaluating potential river impacts arising from Newhall Ranch. Together, the figures show the following:

a. Newhall Ranch increases river flows by as much as 285 AF/month (4.8 cfs) and 2,000 AF/yr (2.8 cfs) during non-drought years.

b. During single drought years, the project will have a less positive influence or some negative influence on river flows, depending on conditions prior to the drought.

c. The Newhall Ranch project would reduce river flows during the second and third years of a 3-year drought. During the third year of the drought, the project would reduce river flows by up to 125 AF/month (2.1 cfs) in the driest month, and the total flow reduction would be about 1,050 AF for that year (1.5 cfs).

d. The curves for Newhall Ranch impacts under year 2045 conditions (Figure 15) are shifted downward by 20 AF/month (0.3 cfs) or more and 200 AF/year (0.3 cfs) or more, compared with the curves that show the Newhall Ranch impacts under current conditions in the valley.

Figures 16 and 17 show the monthly and annual impacts as percentages of total river flows that would occur if the project were not developed. Figure 16 shows these impacts compared with current conditions, and Figure 17 compares the impacts against predicted

river flows in year 2045. The figures show that the worst-month impact is a 7.5 percent reduction in river flows for current conditions and a 12.5 percent reduction for year 2045 conditions. However, on an annual basis, the project has only a 1.5 percent to 1.8 percent adverse impact on river flows. Moreover, during non-drought years, Newhall Ranch increases monthly river flows by as much as 15 percent during the wettest months, and it increases annual flows by as much as 6 percent under year 2000 conditions and 4.5 percent under year 2045 conditions. The overall improvement in river flows is further illustrated by Figures 18 and 19, which are plots of monthly and annual cumulative changes in river flows resulting from the project.

Combined Influence of Newhall Ranch and Other Development

Figure 20 shows monthly and annual plots of potential impacts to the river arising from the combined influence of future growth in the valley and development of Newhall Ranch, compared with current (year 2000) conditions. This analysis shows that river flows will be higher in most months, but they could decrease by 125 to 275 AF/month (2.1 to 4.6 cfs) periodically during single-year droughts, depending on antecedent conditions. During a multi-year drought, river flows would remain higher in the winter months, but they could be lower than present-day flows by as much as 525 AF/month (8.8 cfs) during the summer of the third drought year.

However, the periods of reduced flows would be short lived compared with the periods of enhanced flows. This is indicated by the plot of annual impacts, which shows that annual flows will be higher in each year than under present conditions. Flows will increase by about 500 AF/yr (0.7 cfs) during the driest year and by more than 6,000 AF/yr (8.3 cfs) in some non-drought years, depending on antecedent conditions. This is consistent with historical records, which show that the continued urbanization and associated importation of water from areas outside the valley is increasing river flows gradually over time. The model simulations indicate that this trend will continue as growth continues in the valley.

Conclusions

a. Since 1975, groundwater discharges from the Alluvial Aquifer to the Santa Clara River have been on the order of about 20,500 to 23,500 AF/yr (28 to 32 cfs) during normal-rainfall years and 12,000 AF/yr (16.5 cfs) during drought years. For the past 47 years (1953 through 1999), groundwater discharges to the river have been on the order of 12,600 to 19,100 AF/yr (18 to 26 cfs) during normal-rainfall years and 6,500 to 8,200 AF/yr (9 to 11 cfs) during drought years. Groundwater discharges to the river were lower during the 1950s and 1960s than afterward because urbanization and the associated importation of water from outside the valley had not yet begun, and there was also less rainfall than in later years.

b. The recalibrated groundwater flow model reasonably replicates groundwater discharges to the river and, hence, the current hydrologic characteristics of the valley. The model simulates groundwater discharges to the river of about 16,000 to 19,000 AF/yr (22 to 26 cfs) for normal-rainfall years and of 10,000 to 13,000 AF/yr (14 to 18 cfs) for drought years.

c. Operation of an ASR system as part of the Newhall Ranch water supply plan will have a greater influence on river flows than the original model predicted. Changes in groundwater discharges to the river arising from ASR operations will range from a 200-AF/month (3.4 cfs) increase during injection cycles to a 43-AF/month (0.7 cfs) decrease during pumping cycles. However, after drought years, ASR operations could increase river flows within 4 months of resuming injection. On the basis of the historical timing of drought years, model simulations indicate that the ASR system has been designed to provide long-term benefits to the river and the groundwater system. The model also predicts that ASR pumping cycles will cause small (less than 1 foot) declines during drought years, and that ASR operations will not cause long-term groundwater elevation declines in the Alluvial Aquifer, where riparian habitat is present along the river.

d. The net influence of the Newhall Ranch development on river flows will arise from ASR operations, direct discharges of treated effluent into the river from the Newhall Ranch WRP, and the redistribution of irrigation demands (rates and locations) associated with conversion of water use from agricultural to municipal demands. By accounting for these processes together, the updated impact analysis indicates that the project will increase river flows by as much as 285 AF/month (4.8 cfs) and 2,000 AF/yr (2.8 cfs) during non-drought years and will decrease river flows by as much as 125 AF/month (2.1 cfs) and 1,050 AF/year (1.5 cfs) toward the end of a 3-year drought. For a 19-year historical hydrologic cycle such as that which occurred from 1982 through 2000, the project will result in an overall increase in river flows over the long term.

e. The combination of growth outside Newhall Ranch and development of the Newhall Ranch project will further enhance the long-term flows to the river, compared with present conditions. On an annual basis, increases in river flows will range from 500 AF/yr (0.7 cfs) at the end of a 3-year drought to more than 6,000 AF/yr (8.3 cfs) in some non-drought years, depending on antecedent conditions. The occurrence of increased annual flows during drought and non-drought years alike (compared with present-day conditions) is consistent with historical records showing that continued urbanization and associated importation of water from areas outside the valley increase river flows gradually over time.

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TABLE 1
Comparison of Key Aspects of Original and Revised Groundwater Flow Models for Newhall Ranch Impact Analyses
Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

Original Analysis	Revised Analysis
HYDROGEOLOGY	
Alluvial Aquifer thickness at County Line = 100 feet	Alluvial Aquifer thickness at County Line = 40 feet
Hydraulic conductivity (K) for Alluvial Aquifer along the Santa Clara River • Downstream of Castaic Creek = 500 ft/day • Upstream of South Fork = 300 ft/day	Hydraulic conductivity (K) for Alluvial Aquifer along the Santa Clara River • Downstream of Castaic Creek = 150 ft/day • Upstream of South Fork = 400 ft/day
Alluvial Aquifer transmissivity at County Line = (100 feet thickness) * (500 ft/day for K) = 50,000 ft^2/day	Alluvial Aquifer transmissivity at County Line = (40 feet thickness) * (150 ft/day for K) = 6,000 ft^2/day
Groundwater inflow at east end of valley = 6,400 AF/yr	Groundwater inflow at east end of valley = 8,500 AF/yr
Riverbed permeability ~0.3 ft/day	Riverbed permeability ~5 ft/day
Groundwater discharge to river • 1,000 to 3,000 AF/yr (dry years from 1976-1994) ***Model Calibration for Dry and Normal Years*** • River-groundwater connection for normal years is assumed to be similar to (only slightly higher than) during dry years • Modeled GW discharge to river ~ 2,000 AF/yr • Modeled subsurface GW discharge ~ 7,000 AF/yr • Modeled total GW discharge ~ 9,000 AF/yr	Groundwater discharge to river • 6,500 to 8,200 AF/yr (dry years [1953-1999]) • 11,800 to 12,200 AF/yr (dry years [1975-1999]) • 7,800 to 9,900 AF/yr (drought of 1989-1990) • 12,600 to 19,100 AF/yr (normal years [1953-1999]) • 20,500 to 23,500 AF/yr (normal years [1975-1999]) ***Model Calibration for Dry Years 1989-1990*** • Modeled GW discharge to river = 9,500 AF/yr • Modeled subsurface GW discharge = 1,000 AF/yr • Modeled total GW discharge = 10,500 AF/yr ***Model Calibration for Dry Years 1975-1999*** • Modeled GW discharge to river = 11,300 AF/yr • Modeled subsurface GW discharge = 1,000 AF/yr • Modeled total GW discharge = 12,300 AF/yr ***Model Calibration for Normal Years (1953-1999)*** • Modeled GW discharge to river = 16,300 AF/yr • Modeled subsurface GW discharge = 1,000 AF/yr • Modeled total GW discharge = 17,300 AF/yr ***Model Simulation for Normal Years*** • Modeled GW discharge to river = 17,400 AF/yr • Modeled subsurface GW discharge = 1,000 AF/yr • Modeled total GW discharge = 18,400 AF/yr

TABLE 1
Comparison of Key Aspects of Original and Revised Groundwater Flow Models for Newhall Ranch Impact Analyses
Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

Original Analysis	Revised Analysis
WATER USE—ALLUVIAL AQUIFER PUMPING	
Annual pumping from agricultural wells • Existing conditions (without Newhall Ranch) = 13,200 AF/yr (normal and wet years) 11,400 AF/yr (dry years) • Future conditions (with Newhall Ranch) = 13,200 AF/yr (normal and wet years) 11,400 AF/yr (dry years)	Annual pumping from agricultural wells • Existing conditions (without Newhall Ranch) = 12,200 AF/yr (normal and wet years) 12,200 AF/yr (dry years) • Future conditions (with Newhall Ranch) = 12,200 AF/yr (normal and wet years) 12,200 AF/yr (dry years)
Annual pumping from other Alluvial Aquifer wells • Existing conditions plus Newhall Ranch = 24,300 AF/yr (normal and wet years) 21,100 AF/yr (dry years)	Annual pumping from other Alluvial Aquifer wells • Existing conditions plus Newhall Ranch = 25,300 AF/yr (normal and wet years) 20,300 AF/yr (dry years)
Annual total pumping from Alluvial Aquifer • Year 2045 conditions plus Newhall Ranch = 37,500 AF/yr (normal and wet years) 32,500 AF/yr (dry years)	Annual total pumping from Alluvial Aquifer • Year 2045 conditions plus Newhall Ranch = 37,500 AF/yr (normal and wet years) 32,500 AF/yr (dry years)
WATER USE—SAUGUS FORMATION PUMPING AND ASR	
ASR volumes • Injection = 4,420 AF/yr • Pumping = 4,020 AF/yr • During 19 years: Total injection = 61,880 AF Total pumping = 20,100 AF	ASR volumes • Injection = 4,500 AF/yr • Pumping = 4,090 AF/yr • During 19 years Total injection = 63,000 AF Total pumping = 20,450 AF
Annual pumping from other Saugus Formation wells • Existing conditions = 7,500 AF/yr (normal and wet years) 11,500 AF/yr (dry years) • Future conditions (year 2045) = 11,000 AF/yr (normal and wet years) 15,000 AF/yr (first drought year) 25,000 AF/yr (second drought year) 35,000 AF/yr (third drought year)	Annual pumping from other Saugus Formation wells • Existing conditions = 7,500 AF/yr (normal and wet years) 11,500 AF/yr (dry years) • Future conditions (year 2045) = 11,000 AF/yr (normal and wet years) 15,000 AF/yr (first drought year) 25,000 AF/yr (second drought year) 35,000 AF/yr (third drought year)

TABLE 1
Comparison of Key Aspects of Original and Revised Groundwater Flow Models for Newhall Ranch Impact Analyses
Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

Original Analysis	Revised Analysis
WATER USE SCENARIOS—DEEP PERCOLATION (EXISTING CONDITIONS)	
Deep percolation beneath golf courses • 330 acres • 94 AF/yr = 3.4 in/yr = 10% of applied water Deep percolation beneath other urbanized areas • 10% of applied outdoor water volume • Applied over 17,360 acres (excluding golf courses) • Deep percolation volume = 2.2 in/yr * 17,360 acres / 12 in/ft = 3,183 AF/yr	Deep percolation beneath golf courses • 330 acres • 282 AF/yr = 10.25 in/yr = 30% of applied water Deep percolation beneath other urbanized areas • 10% of applied outdoor water volume • Applied over 17,360 acres (excluding golf courses) • Deep percolation volume = 2.2 in/yr * 17,360 acres / 12 in/ft = 3,183 AF/yr
Deep percolation beneath agricultural land **(portion inside Newhall Ranch footprint)** • 360 acres irrigated 360 acres overlies Alluvial Aquifer (100%) 0 acres overlies Saugus Formation (0%) • Applied water = 720 AF/yr = 2 ft/yr (total agricultural water use in LA County = estimated 700 acres * 2 ft/yr = 1,400 AF/yr) • Deep percolation (assumed) = 20% applied water = 144 AF/yr = 0.4 ft/yr = 4.8 in/yr 144 AF/yr deep percolation to Alluvial Aquifer (100%) 0 AF/yr deep percolation to Saugus Formation (0%)	Deep percolation beneath agricultural land **(portion inside Newhall Ranch footprint)** • 550 acres irrigated 385 acres overlies Alluvial Aquifer (70%) 165 acres overlies Saugus Formation (30%) • Applied water = 4,690 AF/yr = 8.5 ft/yr (total agricultural water use in LA County = measured 7,038 AF/yr average during 1996-2000) • Deep percolation (calculated) = 1,595 AF/yr = 2.9 ft/yr = 34.6 in/yr 1,115 AF/yr deep percolation to Alluvial Aquifer (70%) 480 AF/yr deep percolation to Saugus Formation (30%)
Deep percolation beneath LA County agricultural land **(portion outside Newhall Ranch footprint)** • 340 acres irrigated, all overlying Alluvial Aquifer • Assume same deep percolation rate (0.4 ft/yr) • Deep percolation volume = 110 AF/yr	Deep percolation beneath LA County agricultural land **(portion outside Newhall Ranch footprint)** • 275 acres irrigated, all overlying Alluvial Aquifer • Assume same deep percolation rate (2.9 ft/yr) • Deep percolation volume = 798 AF/yr

TABLE 1
Comparison of Key Aspects of Original and Revised Groundwater Flow Models for Newhall Ranch Impact Analyses
Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

Original Analysis	Revised Analysis
WATER USE SCENARIOS—DEEP PERCOLATION (INSIDE NEWHALL RANCH)	
Deep percolation beneath land **within Newhall Ranch footprint** under **Newhall Ranch developed conditions** • Deep percolation from Newhall Ranch outdoor irrigation not simulated as part of the original ASR impact evaluation • Agricultural water use and deep percolation same as under existing conditions (deep percolation to Alluvial Aquifer = 144 AF/yr)	Deep percolation beneath land **within Newhall Ranch footprint** under **Newhall Ranch developed conditions** • No agricultural water use or associated deep percolation, except outside of Newhall Ranch footprint • Deep percolation = 0 in river corridor (RC), open area (OA), and high country (HC) land use areas • Deep percolation = 2.2 in/yr in developed areas overlying Alluvial Aquifer and Saugus Formation • Alluvial Aquifer along Santa Clara River (excludes tributaries containing alluvium): Area = 833 acres Deep percolation = 153 AF/yr • Saugus Formation: Area = 1,712 acres Deep percolation = 314 AF/yr • Combined (Saugus Formation + Alluvial Aquifer along river): Area = 2,545 acres Deep percolation = 467 AF/yr • Golf course (overlies only Pico Formation): Area = 180 acres Water use = 932 AF/yr Deep percolation = 30% = 280 AF/yr = 1.5 ft/yr • Pico Formation (excluding golf course): Area = 3,518 acres Deep percolation = 645 AF/yr • Corresponding outdoor water use rates: 12,050 AF/yr (average years) 14,000 AF/yr (drought years) Deep percolation rate same for average and drought years (1.5 ft/yr = 18 in/yr for golf course, 2.2 in/yr in other developed areas)
WATER USE SCENARIOS—DEEP PERCOLATION (FUTURE DEVELOPMENT OUTSIDE NEWHALL RANCH)	
Deep percolation from increased outdoor irrigation use in areas outside the Newhall Ranch development was not simulated as part of the original ASR impact evaluation.	Modeled greater irrigation outside Newhall Ranch. • Deep percolation = 2.2 in/yr in developed areas overlying Alluvial Aquifer and Saugus Formation • Increased deep percolation = 2.2 in/yr * 8,050 acres new urbanization within model domain = 1,475 AF/yr

TABLE 2
Estimated Annual Groundwater Discharge to the Santa Clara River
Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

Calendar Year	Total Gaged Flow at Mouth of Castaic Creek (AF/yr)	Total Gaged Flow at County Line (AF/yr)	Estimated Non-Storm Flow at County Line (AF/yr)	WRP Flows (AF/yr)	Estimated Groundwater Discharge to River (AF/yr)	Rainfall at Newhall-Soledad Gage (in/yr)	Local Rainfall Condition
1953	0	4,986	4,943	0	4,943	4.88	Drought
1954	977	7,316	5,554	0	5,554	15.82	Near Average
1955	134	4,795	4,122	0	4,122	13.91	Drought
1956	311	5,429	3,803	0	3,803	14.21	Drought
1957	559	4,782	2,410	0	2,410	22.85	Wet
1958	21,204	38,756	5,344	0	5,344	23.14	Wet
1959	473	3,277	2,206	0	2,206	9.81	Drought
1960	1	777	586	0	586	11.64	Drought
1961	79	804	410	0	410	8.82	Drought
1962	5,101	28,460	2,433	0	2,433	21.22	Near Average
1963	32	1,884	1,058	0	1,058	12.79	Drought
1964	1	1,030	646	0	646	10.09	Drought
1965	3,702	35,614	996	0	996	32.28	Wet
1966	5,780	10,101	2,332	No data	---	14.57	Drought
1967	27,819	40,480	8,640	No data	---	23.23	Wet
1968	4,381	7,216	3,895	No data	---	6.9	Drought
1969	46,461	258,660	29,395	No data	---	32.42	Wet
1970	6,597	31,066	14,924	No data	---	23.19	Wet
1971	2,310	15,883	10,843	No data	---	13.75	Drought
1972	2,205	16,027	12,975	No data	---	4.15	Drought
1973	12,671	52,631	26,115	No data	---	19.79	Near Average
1974	7,288	25,265	11,918	No data	---	18.04	Near Average
1975	2,027	14,770	10,806	5,534	5,272	10.92	Drought
1976	156	10,162	9,754	6,095	3,659	14.0	Drought
1977	1,380	13,454	9,359	6,004	3,355	20.7	Near Average
1978	35,378	129,187	60,955	6,982	53,973	42.2	Wet
1979	13,626	57,594	42,448	7,397	35,051	21.5	Near Average
1980	16,785	95,211	57,593	7,372	50,221	28.2	Wet
1981	6,519	24,232	21,172	7,949	13,223	11.9	Drought
1982	9,102	36,488	32,531	8,436	24,095	20.2	Near Average
1983	67,058	131,236	55,878	9,420	46,458	39.1	Wet
1984	13,787	39,279	35,215	9,512	25,703	12.9	Drought
1985	2,619	24,466	24,089	9,614	14,475	8.4	Drought
1986	4,945	48,024	31,327	10,822	20,505	18.0	Near Average
1987	911	26,198	23,663	11,844	11,819	14.5	Drought
1988	2,415	36,611	24,934	12,363	12,571	16.9	Near Average
1989	Unavailable	24,799	23,453	13,560	9,893	7.3	Drought
1990	0	23,472	21,772	14,006	7,766	7.0	Drought
1991	65	34,901	18,702	14,108	4,594	17.2	Near Average
1992	4,450	68,577	23,601	15,703	7,898	32.0	Wet
1993	7,725	152,783	65,054	17,179	47,875	31.6	Wet
1994	Unavailable	32,039	31,239	16,946	14,293	10.3	Drought
1995	5,611	82,409	51,001	17,824	33,177	29.2	Wet
1996	5,632	47,930	36,366	16,831	19,535	11.8	Drought
1997	9,885	36,780	27,521	15,778	11,743	9.1	Drought
1998	47,803	205,139	81,744	17,695	64,049	21.1	Near Average
1999	5,830	32,382	27,176	17,847	9,329		Drought

TABLE 3
Statistics on Annual Groundwater Discharge to the Santa Clara River, All Years
Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

	Castaic Creek Flows (AF/yr)	Total Gaged Flow at County Line (AF/yr)	Estimated Non-Storm Flow at County Line (AF/yr)	WRP Flows (AF/yr)	Estimated Groundwater Discharge to River (AF/yr)	Rainfall at Newhall-Soledad Gage (in/yr)
STATISTICS FOR 1953-1965						
Minimum	0	777	410	0	410	4.9
Median	311	4,795	2,410	0	2,410	13.9
Average	2,506	10,608	2,655	0	2,655	15.5
Maximum	21,204	38,756	5,554	0	5,554	32.3
STATISTICS FOR 1975-1999						
Minimum	0	10,162	9,359	5,534	3,355	7.0
Median	5,632	36,611	27,521	11,844	14,293	17.1
Average	11,466	57,125	33,894	11,873	22,021	19.0
Maximum	67,058	205,139	81,744	17,847	64,049	42.2
STATISTICS FOR 1953-1965 AND 1975-1999						
Minimum	0	777	410	5,534	410	4.9
Median	3,161	30,250	22,613	11,844	8,613	14.5
Average	8,230	41,211	23,207	11,873	15,396	17.8
Maximum	67,058	205,139	81,744	17,847	64,049	42.2
STATISTICS FOR 1953-1999						
Minimum	0	777	410	5,534	410	4.2
Median	4,450	28,460	18,702	11,844	8,613	15.2
Average	9,151	43,050	21,338	11,873	15,396	17.7
Maximum	67,058	258,660	81,744	17,847	64,049	42.2

TABLE 4
Statistics on Annual Groundwater Discharge to the Santa Clara River, 1953-1965 vs. 1975-1999
Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

	Castaic Creek Flows (AF/yr)	Total Gaged Flow at County Line (AF/yr)	Estimated Non-Storm Flow at County Line (AF/yr)	WRP Flows (AF/yr)	Estimated Groundwater Discharge to River (AF/yr)	Rainfall at Newhall-Soledad Gage (in/yr)
STATISTICS FOR 8 BELOW-NORMAL RAINFALL YEARS DURING 1953-1965						
Minimum	0	777	410	0	410	4.9
Median	56	2,581	1,632	0	1,632	10.9
Average	129	2,873	2,222	0	2,222	10.8
Maximum	473	5,429	4,943	0	4,943	14.2
STATISTICS FOR 2 AVERAGE RAINFALL YEARS DURING 1953-1965						
Minimum	977	7,316	2,433	0	2,433	15.8
Median	3,039	17,888	3,993	0	3,993	18.5
Average	3,039	17,888	3,993	0	3,993	18.5
Maximum	5,101	28,460	5,554	0	5,554	21.2
STATISTICS FOR 3 ABOVE-NORMAL RAINFALL YEARS DURING 1953-1965						
Minimum	559	4,782	996	0	996	22.9
Median	3,702	35,614	2,410	0	2,410	23.1
Average	8,488	26,384	2,917	0	2,917	26.1
Maximum	21,204	38,756	5,344	0	5,344	32.3
STATISTICS FOR 12 BELOW-NORMAL RAINFALL YEARS DURING 1975-1999						
Minimum	0	10,162	9,754	5,534	3,659	7.0
Median	4,126	25,499	23,876	12,702	11,781	10.9
Average	4,737	28,042	24,352	12,126	12,226	10.7
Maximum	13,787	47,930	36,366	17,847	25,703	14.5
STATISTICS FOR 7 AVERAGE RAINFALL YEARS DURING 1975-1999						
Minimum	65	13,454	9,359	6,004	3,355	16.9
Median	4,945	36,611	31,327	10,822	20,505	20.2
Average	11,334	61,744	34,435	10,975	23,460	19.4
Maximum	47,803	205,139	81,744	17,695	64,049	21.5
STATISTICS FOR 6 ABOVE-NORMAL RAINFALL YEARS DURING 1975-1999						
Minimum	4,450	68,577	23,601	6,982	7,898	28.2
Median	12,255	112,199	56,736	12,562	47,167	31.8
Average	22,835	109,900	52,347	12,413	39,934	33.7
Maximum	67,058	152,783	65,054	17,824	53,973	42.2

TABLE 5
Statistics on Annual Groundwater Discharge to the Santa Clara River, Including and Excluding 1966-1974
Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

	Castaic Creek Flows (AF/yr)	Total Gaged Flow at County Line (AF/yr)	Estimated Non-Storm Flow at County Line (AF/yr)	WRP Flows (AF/yr)	Estimated Groundwater Discharge to River (AF/yr)	Rainfall at Newhall-Soledad Gage (in/yr)
STATISTICS FOR 24 BELOW-NORMAL RAINFALL YEARS DURING 1953-1999						
Minimum	0	777	410	5,534	410	4.2
Median	1,469	15,326	10,825	12,702	6,519	10.9
Average	2,867	17,030	14,169	12,126	8,224	10.6
Maximum	13,787	47,930	36,366	17,847	25,703	14.6
STATISTICS FOR 11 AVERAGE RAINFALL YEARS DURING 1953-1999						
Minimum	65	7,316	2,433	6,004	2,433	15.8
Median	5,101	36,488	24,934	10,822	12,571	19.8
Average	9,579	49,626	26,097	10,975	19,134	19.1
Maximum	47,803	205,139	81,744	17,695	64,049	21.5
STATISTICS FOR 12 ABOVE-NORMAL RAINFALL YEARS DURING 1953-1999						
Minimum	559	4,782	996	6,982	996	22.9
Median	12,255	75,493	26,498	12,562	33,177	30.4
Average	20,279	89,063	31,316	12,413	27,595	29.9
Maximum	67,058	258,660	65,054	17,824	53,973	42.2
STATISTICS FOR 20 BELOW-NORMAL RAINFALL YEARS DURING 1953-1965 AND 1975-1999						
Minimum	0	777	410	5,534	410	4.9
Median	392	19,121	15,989	12,702	6,519	10.9
Average	2,689	17,975	15,500	12,126	8,224	10.7
Maximum	13,787	47,930	36,366	17,847	25,703	14.5
STATISTICS FOR 9 AVERAGE RAINFALL YEARS DURING 1953-1965 AND 1975-1999						
Minimum	65	7,316	2,433	6,004	2,433	15.8
Median	4,945	36,488	24,934	10,822	12,571	20.2
Average	9,490	51,999	27,670	10,975	19,134	19.2
Maximum	47,803	205,139	81,744	17,695	64,049	21.5
STATISTICS FOR 9 ABOVE-NORMAL RAINFALL YEARS DURING 1953-1965 AND 1975-1999						
Minimum	559	4,782	996	6,982	996	22.9
Median	7,725	82,409	51,001	12,562	33,177	31.6
Average	18,052	82,062	35,870	12,413	27,595	31.2
Maximum	67,058	152,783	65,054	17,824	53,973	42.2

TABLE 6
Aquifer Hydraulic Parameters Used in Numerical Groundwater Flow Model
Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

Parameter	Aquifer	Value in Original Model	Value in Revised Model
Horizontal Hydraulic Conductivity	Alluvial Aquifer Saugus Formation	50-500 ft/day 6.5 ft/day	50-400 ft/day 6.5 ft/day
Ratio of Horizontal to Vertical Hydraulic Conductivity	Alluvial Aquifer Saugus Formation	10:1 50:1	10:1 50:1
Vertical Hydraulic Conductivity	Alluvial Aquifer Saugus Formation	5-50 ft/day 0.13 ft/day	5-40 ft/day 0.13 ft/day
Storage Coefficient	Saugus Formation	10^{-3}	10^{-3}
Specific Yield	Alluvial Aquifer and Saugus Formation outcrops	0.10	0.10
Vertical Hydraulic Conductivity	Santa Clara River perennial reach	0.3 ft/day (10^{-4} cm/sec)	~ 5 ft/day (10^{-3} cm/sec)
	Santa Clara River ephemeral reach	~ 3 ft/day (10^{-3} cm/sec)	~ 3 ft/day (10^{-3} cm/sec)

TABLE 7
Saturated Thickness, Horizontal Hydraulic Conductivity, and Storage Unit Definition for the Alluvial Aquifer
Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

Alluvial Aquifer Storage Unit	Location	Estimated Alluvial Aquifer Groundwater Elevation Under Average Conditions (feet)	Alluvial Aquifer Base Elevation (feet)	Alluvial Aquifer Thickness (feet)	Alluvial Aquifer Hydraulic Conductivity (ft/day)
A1d	Santa Clara River (eastern boundary)	1285	1202	85	400
A1e	Santa Clara River below A1d	1160	1072	90	400
B2b	Upper Bouquet Canyon	1280	1225	65	250
B2c	Haskell and Lower Bouquet Canyons	1180	1115	65	250
B3	Dry Canyon	1205	1150	55	250
B4b	Upper San Francisquito Canyon	1200	1140	60	250
B4c	Lower San Francisquito Canyon	1125	1025	100	250
D1a	Upper South Fork Santa Clara River	1155	1100	55	85
D1b	Lower South Fork Santa Clara River	1090	970	120	85
B1a	Santa Clara River at South Fork mouth	1070	925	145	300
B1b2	Santa Clara River below B1a	1020	900	120	50
B1b1	Santa Clara River below Bb2	1000	900	100	125
C2a	Upper Castaic Creek (below lagoon)	1135	1035	100	250
C2b	Lower Castaic Creek	1040	940	100	250
C1a	Santa Clara River below B1b1	965	836	130	150
C1b	Santa Clara River below C1a	915	804	110	150
C1c	Santa Clara River below C1b	860	750	110	150
C1d	Santa Clara River below C1c	860	750	40 - 110	150

Notes:

1. See Figure 1 for the locations of the alluvial storage units.
2. Alluvial storage units are those defined by Richard C. Slade & Associates, LLC (1986).
3. Alluvial storage units B1b1 and B1b2 were assigned a single storage unit (B1b) in the original report by Richard C. Slade & Associates, LLC (1986). Alluvial storage units C1c and C1d were also assigned a single storage unit (C1c). However, these areas were subdivided during model construction to facilitate separate analyses of model results on each side of a prominent Saugus Formation outcrop (Round Mountain, located just east of Interstate 5).

TABLE 8
Simulated and Estimated Groundwater Discharge from the Alluvial Aquifer to the Santa Clara River
Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

Rainfall Condition	Precipitation at Newhall-Soledad Gage (in/yr)	Equivalent Valley-Wide Precipitation (in/yr)	Valley-Wide Precipitation Infiltration Rate (in/yr)	Typical Groundwater Discharge to River (AF/yr)	Simulated Groundwater Discharge to River (AF/yr)
Median Rainfall During Past 25 Years (1975-1999)	20.2	17.8	3.15	20,500 – 23,500	18,400
Average Rainfall During Past 47 Years (1953-1999)	19.1	16.8	2.8	12,600 – 19,100	17,300
Long-Term Median Rainfall (1883-1999)	16.2	14.3	2.0	12,600 – 19,100	16,000
Typical Drought During Past 25 Years (1975-1999)	10.8	9.5	0.9	11,800 – 12,200	12,300
Severe Drought During Past 25 Years (1989-1990)	7.3	6.4	0.4	7,800 – 9,900	10,500

Notes:

1. Equivalent valley-wide precipitation = Newhall-Soledad precipitation times 0.88 adjustment factor (derived by Richard C. Slade & Associates, LLC, 1986).
2. The range in values shown for the "typical groundwater to the river" is based on the median and average discharge values for the applicable time period, based on flows at the County Line gage, which until 1996 was located on bedrock about one mile downstream of the Los Angeles County / Ventura County Line, and close to the location of Blue Cut. In October 1996, gaging was discontinued at this location and was performed just downstream of Blue Cut.
3. Because the model stops upstream of the County Line gage, it simulates a small amount of groundwater discharge across the western model boundary, because of the presence of 40 feet of Alluvial Aquifer sediments. This discharge (estimated to be 1,000 AF/yr) is added to model-simulated groundwater discharges to the river to derive the "simulated groundwater discharge to river" values listed in the last column of this table.

TABLE 9
Year 2045 Water Demands and Indoor Water Use Outside Newhall Ranch
Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

Year 2000 Actual (AF/yr)	Year 2045 Full Build-Out (AF/yr)	Comments
Annual Urban Water Use Outside Newhall Ranch		
60,988	123,038	Year 2000 value is retail purveyor demand + other demands in Tables IV-1 and III-6 of the Santa Clarita Valley Water Report 2000, dated March 2001. Year 2045 value is from Table 2.5-4 of the DAA. Consists of 89,805 AF/yr Development Monitoring System (DMS)* demand, plus 55,995 AF/yr additional urban demand, minus 14,480 AF/yr conservation, minus 5,193 AF/yr agricultural uses and 3,089 AF/yr other uses. Does not include 4,500 AF/yr for ASR or the 17,680 AF/yr demand for the Newhall Ranch Specific Plan.
Annual Indoor Water Use Outside Newhall Ranch = LACSD WRP Influent Volumes		
18,723	40,314 (average year)	The year 2000 volume is from Saugus and Valencia WRPs for period January 2000 through December 2000. The long-term current volume of generated effluent is based on the influent volume estimated from water balance calculations performed for the chloride mass balance analysis. The effluent volume is 32.8% of the total urban water production of 123,038 AF/yr, which includes "other" uses.

*DMS water demands are demands associated with future build-out of developments identified in Los Angeles County's Development Monitoring System (DMS) for the Santa Clarita Valley.

TABLE 10
Year 2045 LACSD WRP Discharges to the Santa Clara River
Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

Month	Year 2000 Effluent Volume	Year 2045 Effluent Volume	Percent of Annual Outdoor Demand	Year 2045 Reclaimed Volume (Before Maintaining Existing Streamflows)	Year 2045 Reclaimed Volume (After Maintaining Existing Streamflows)	Year 2045 Discharge to River	Month
January	1,503	3,237	3.8%	640	640	2,597	January
February	1,443	3,106	5.1%	866	866	2,240	February
March	1,528	3,290	6.6%	1,120	1,120	2,170	March
April	1,505	3,240	9.1%	1,547	1,547	1,693	April
May	1,569	3,379	10.6%	1,795	1,795	1,584	May
June	1,543	3,321	11.4%	1,930	1,779	1,543	June
July	1,606	3,459	14.1%	2,399	1,852	1,606	July
August	1,649	3,550	12.9%	2,198	1,901	1,649	August
September	1,593	3,430	10.2%	1,739	1,739	1,691	September
October	1,631	3,512	7.5%	1,276	1,276	2,236	October
November	1,546	3,329	5.0%	850	850	2,479	November
December	1,607	3,459	3.8%	640	640	2,819	December
Total Annual	**18,723**	**40,313**	**100.0%**	**17,000**	**16,006**	**24,308**	**Total Annual**

Note: All units are in acre-feet (AF) unless otherwise indicated.

TABLE 11
Historical Hydrology in Northern California and the Santa Clarita Valley
Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

Water Year	Northern California Hydrology[a]	Local Hydrology[b]
1944	Dry	Wet
1945	Below Normal	Dry
1946	Below Normal	Normal
1947	Dry	Normal
1948	Below Normal	Dry
1949	Dry	Dry
1950	Below Normal	Dry
1951	Above Normal	Wet
1952	Wet	Dry
1953	Wet	Normal
1954	Above Normal	Normal
1955	Dry	Normal
1956	Wet	Dry
1957	Above Normal	Wet
1958	Wet	Wet
1959	Below Normal	Dry
1960	Dry	Dry
1961	Dry	Dry
1962	Below Normal	Wet
1963	Wet	Dry
1964	Dry	Dry
1965	Wet	Normal
1966	Below Normal	Wet
1967	Wet	Wet
1968	Below Normal	Normal
1969	Wet	Wet
1970	Wet	Dry
1971	Wet	Normal
1972	Below Normal	Dry
1973	Above Normal	Wet
1974	Wet	Normal
1975	Wet	Normal
1976	Critical	Dry
1977	Critical	Wet
1978	Above Normal	Wet
1979	Below Normal	Wet
1980	Above Normal	Wet
1981	Dry	Dry
1982	Wet	Normal

TABLE 11
Historical Hydrology in Northern California and the Santa Clarita Valley
Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

Water Year	Northern California Hydrology[a]	Local Hydrology[b]
1983	Wet	Wet
1984	Wet	Dry
1985	Dry	Normal
1986	Wet	Wet
1987	Dry	Dry
1988	Critical	Wet
1989	Dry	Dry
1990	Critical	Dry
1991	Critical	Dry
1992	Critical	Wet
1993	Above Normal	Wet
1994	Critical	Dry
1995	Wet	Wet
1996	Wet	Dry
1997	Normal[c]	Dry
1998	Normal[c]	Wet
1999	Normal[c]	Dry
2000	Normal[c]	Dry

[a] Defined from the Sacramento Four Rivers Index (Figure 3-4 in Bulletin 160-98 [California Department of Water Resources, 1981]): Wet = wettest; Critical = driest.

[b] Median rainfall = 14.3 inches/year at Newhall County Water District gage; dry year < 85% of median rainfall; and wet year > 115% of median rainfall.

[c] SWP Hydrology for these years is not listed in Bulletin 160-98. SWP water deliveries to the Santa Clarita Valley, however, were normal during these years.

TABLE 12
Summary of Design of ASR Operational Scenario
Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

Model Year	Water Year	Modeled SWP Hydrology	Modeled Local Hydrology	Comment
1	1982	Normal	Normal	Years 1-3 are length of a typical non-drought period prior to drought.
2	1983	Normal	Wet	
3	1984	Normal	Dry	
4	1985	Dry	Normal	Typical drought duration.
5	1986	Normal	Wet	Resume typical non-drought period. Years 1987-1989 still provide injection water.
6	1987	Normal	Dry	
7	1988	Normal	Wet	
8	1989	Normal	Dry	
9	1990	Dry	Dry	Model a 3-year drought. No injection water in 1990, 1991, or 1992.
10	1991	Dry	Dry	
11	1992	Dry	Wet	
12	1993	Normal	Wet	End of 3-year drought.
13	1994	Dry	Dry	Another single-year drought.
14	1995	Normal	Wet	6 years since the last drought occurred in the state water project.
15	1996	Normal	Dry	
16	1997	Normal	Dry	
17	1998	Normal	Wet	
18	1999	Normal	Dry	
19	2000	Normal	Dry	

See Table 11 for the derivation of this hydrologic pattern.

TABLE 13
Pumping Demand Distribution for ASR System During Drought Years
Percentages from Valencia Water Company Demand Distribution During 1998-2000
Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

Month	Monthly Demand as Percent Annual Demand	Monthly Demand (AF/month)
January	5.2%	209
February	3.7%	149
March	5.2%	209
April	6.6%	265
May	8.7%	350
June	10.4%	418
July	13.0%	523
August	13.6%	547
September	10.9%	438
October	9.3%	374
November	7.1%	285
December	6.3%	253
Annual	100.0%	4,020

TABLE 14
Summary of Non-Project Pumping and Local Hydrology Used in ASR Simulations
Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

Model Year	Water Year	Modeled SWP Classification	Non-Project Alluvium Pumping (Current)	Non-Project Saugus Pumping (Current)	Non-Project Alluvium Pumping (UWMP)	Non-Project Saugus Pumping (UWMP)	Rainfall at Newhall-Soledad Gage (inches/year)	Equivalent Basin-Wide Rainfall (inches/year)	Comment
1	1982	Normal	37,500	7,500	35,000	11,000	17.41	15.32	Years 1-3 are length of a typical non-drought period prior to drought.
2	1983	Normal	37,500	7,500	35,000	11,000	37.13	32.67	
3	1984	Normal	37,500	7,500	35,000	11,000	8.83	7.77	
4	1985	Dry	32,500	11,500	32,500	15,000	14.87	13.09	Typical drought duration.
5	1986	Normal	37,500	7,500	35,000	11,000	21.62	19.03	Resume typical non-drought period. Years 1987-1989 still provide injection water.
6	1987	Normal	37,500	7,500	35,000	11,000	6.22	5.47	
7	1988	Normal	37,500	7,500	35,000	11,000	20.82	18.32	
8	1989	Normal	37,500	7,500	35,000	11,000	12.76	11.23	
9	1990	Dry	32,500	11,500	32,500	15,000	7.92	6.97	Model a 3-year drought. No injection water in 1990, 1991, or 1992.
10	1991	Dry	32,500	11,500	32,500	25,000	12.83	11.29	
11	1992	Dry	32,500	11,500	32,500	35,000	31.26	27.51	
12	1993	Normal	37,500	7,500	35,000	11,000	34.52	30.38	End of 3-year drought.
13	1994	Dry	32,500	11,500	32,500	15,000	10.30	9.06	Another single-year drought.
14	1995	Normal	37,500	7,500	35,000	11,000	30.08	26.47	6 years since the last drought occurred in the state water project.
15	1996	Normal	37,500	7,500	35,000	11,000	9.58	8.43	
16	1997	Normal	37,500	7,500	35,000	11,000	7.54	6.64	
17	1998	Normal	37,500	7,500	35,000	11,000	36.67	32.27	
18	1999	Normal	37,500	7,500	35,000	11,000	13.10	11.53	
19	2000	Normal	37,500	7,500	35,000	11,000	9.76	8.59	

Notes:

1. For non-project pumping, the current values are the average values during 1994-1999, and the UWMP values are those listed in Table 2-1 of the *Urban Water Management Plan 2000* (S.A. Associates et al., December 2000).
2. The annual basin-wide rainfall is calculated as 0.88 times the rainfall at the Newhall-Soledad gage based on isohyetes published by Richard C. Slade Associates, LLC (1986).

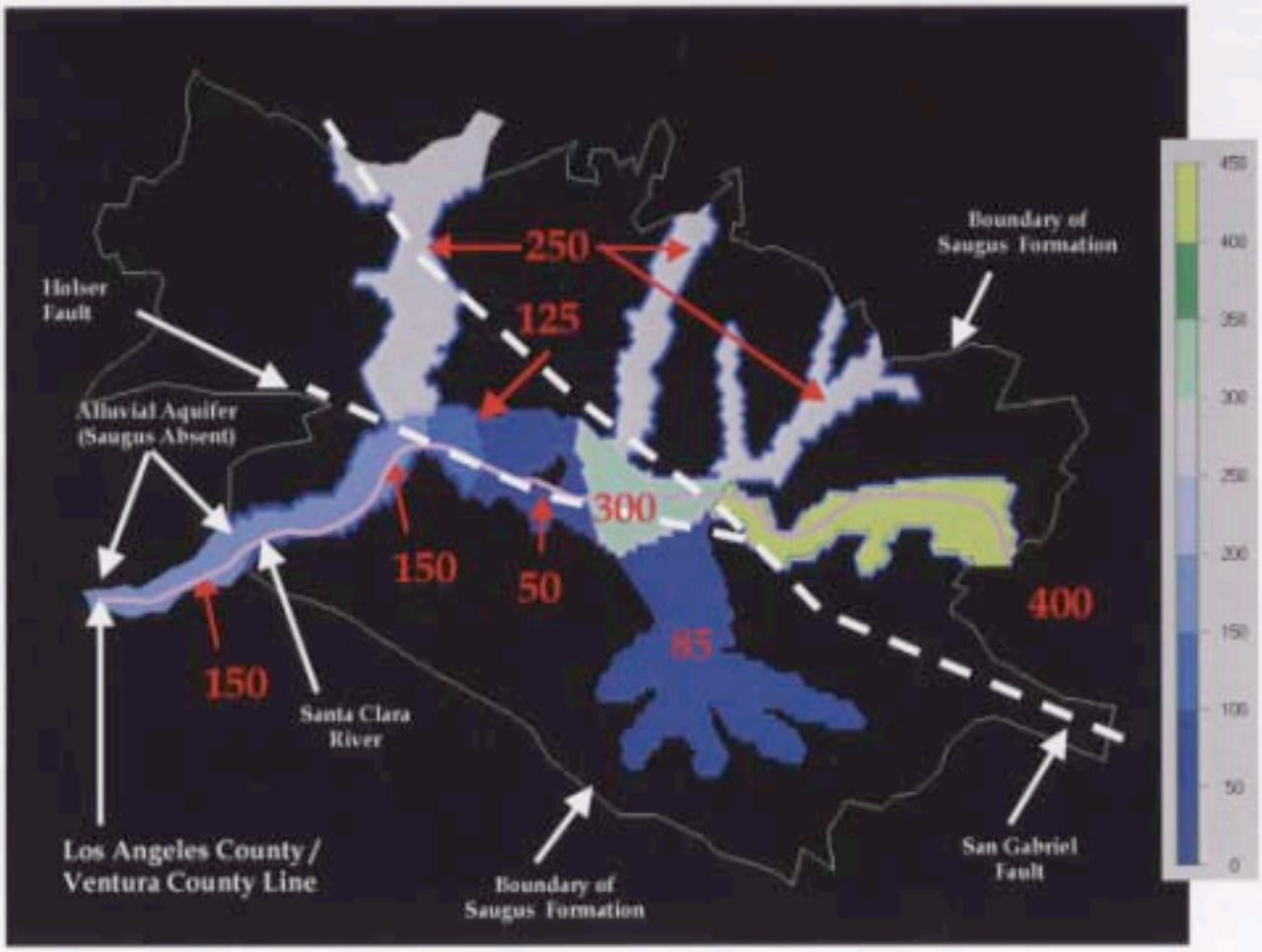


Figure 1
Calibrated Distribution of Hydraulic Conductivity for the Alluvial Aquifer
Updated Water Resources Impact Evaluation
Newhall Ranch (Santa Clarita, California)

Note: The hydraulic conductivity values are shown in red and are in units of feet/day. The green line is the outline of the Saugus Formation. This view is looking north.

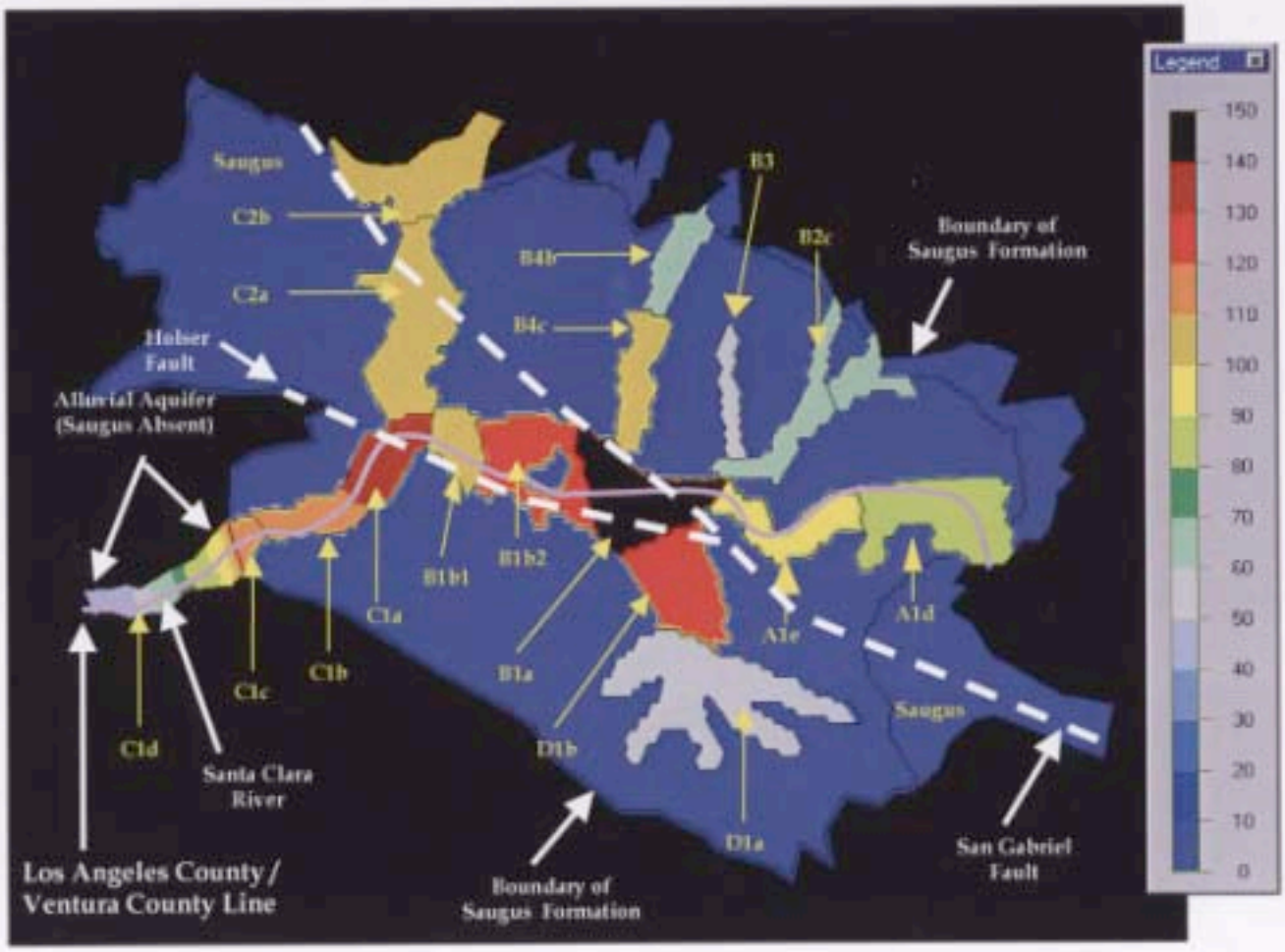
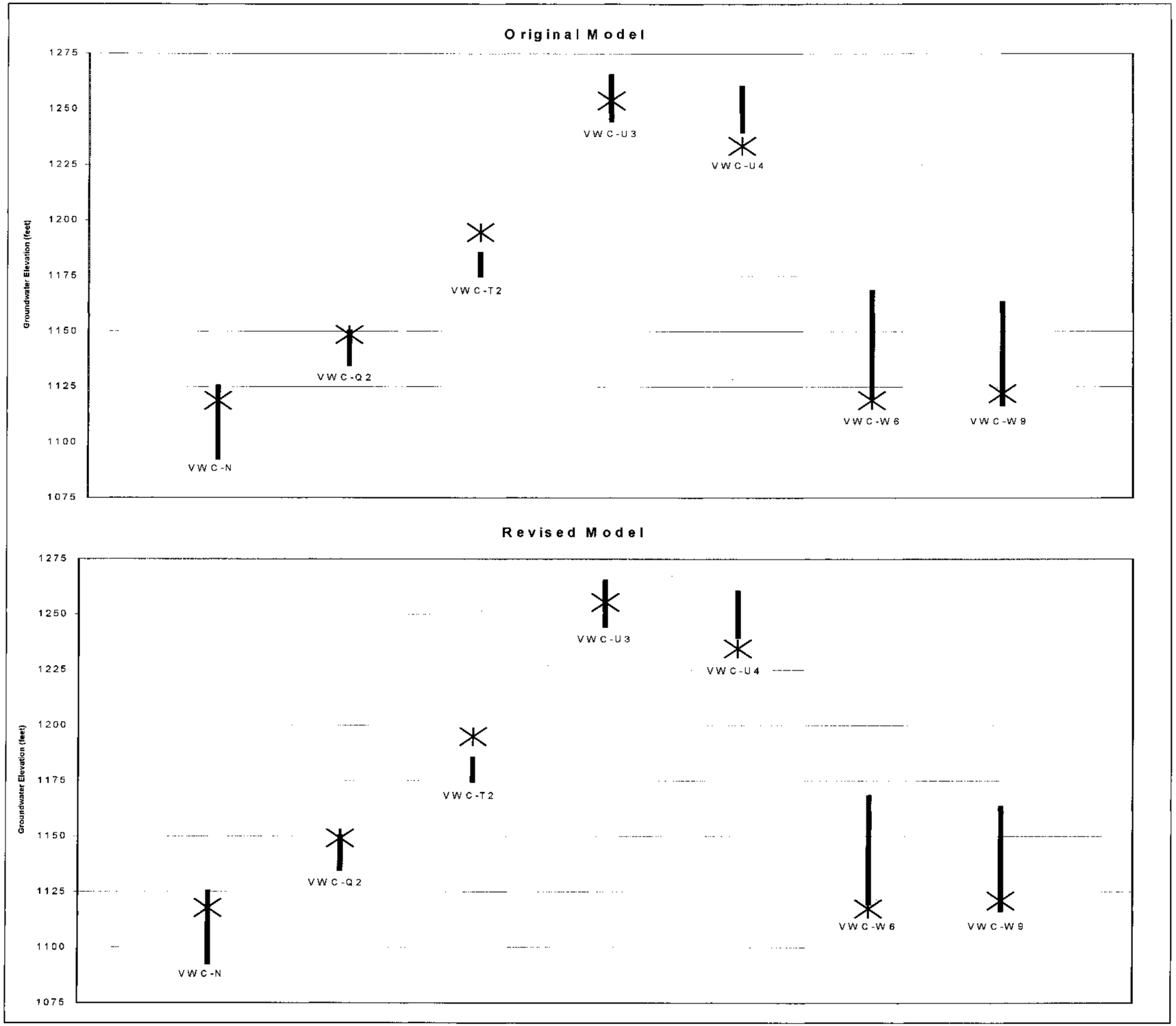


Figure 2
Simulated Distribution of Saturated Thickness for the Alluvial Aquifer
Updated Water Resources Impact Evaluation
Newhall Ranch (Santa Clarita, California)

Note: The contour interval is 10 feet. Identification numbers for Alluvial aquifer storage units are shown in yellow. See Table 7 for a location description for each Alluvial aquifer storage unit and the simulated saturated thickness in each storage unit. This view is looking north.

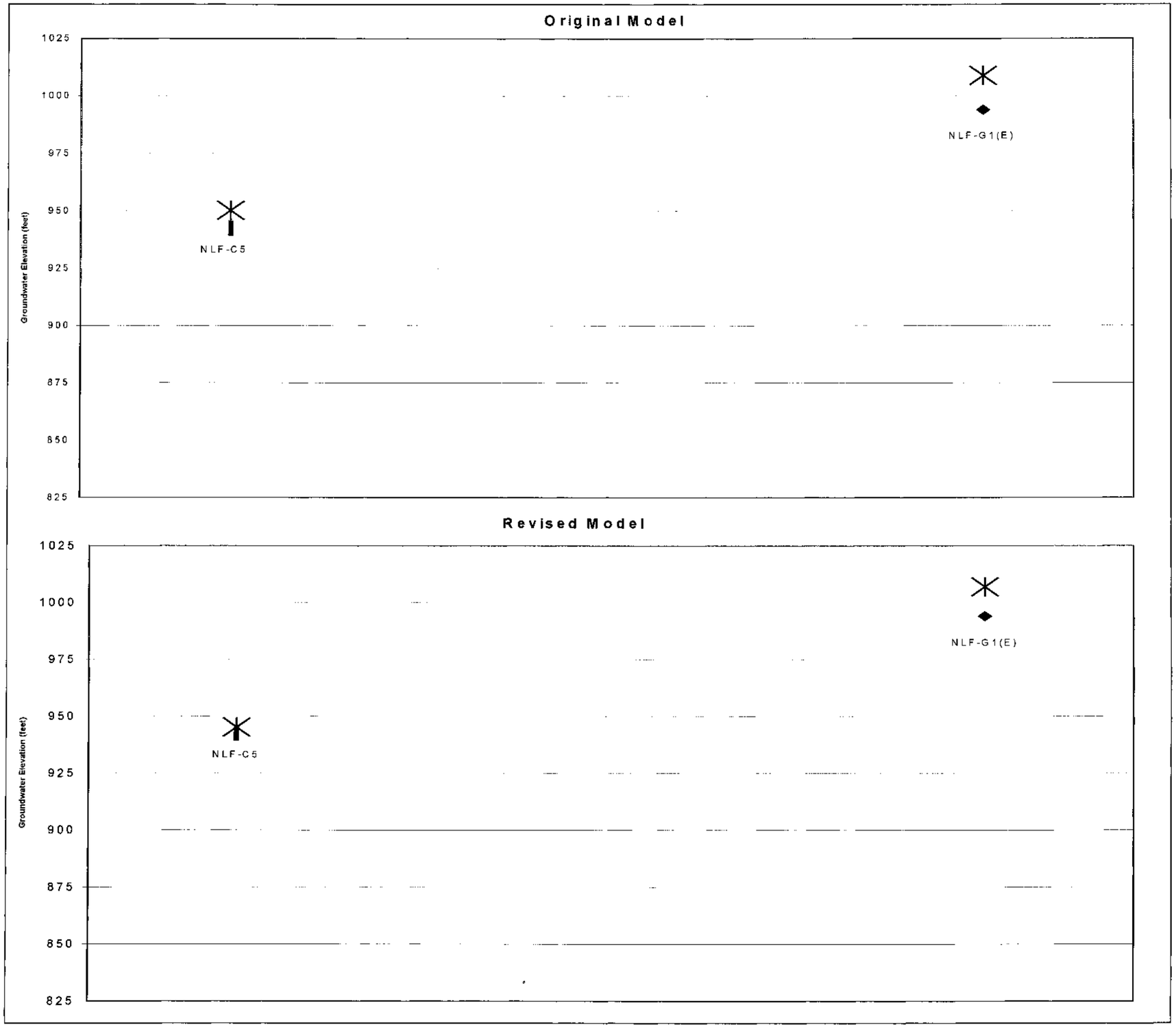


Key Points

1. The simulated water levels generally fall within the range of values measured during the 1980s and 1990s.
2. The relationship between simulated and measured water levels is similar for the original and revised models.

Note: Measured elevations are shown as a range of values (vertical lines). Simulated elevations are shown as a single point (symbol).

FIGURE 3
Measured and Simulated Groundwater Elevations East of I-5 for Original and Revised Models
Updated Water Resources Impact Evaluation Newhall Ranch (Santa Clarita, California)



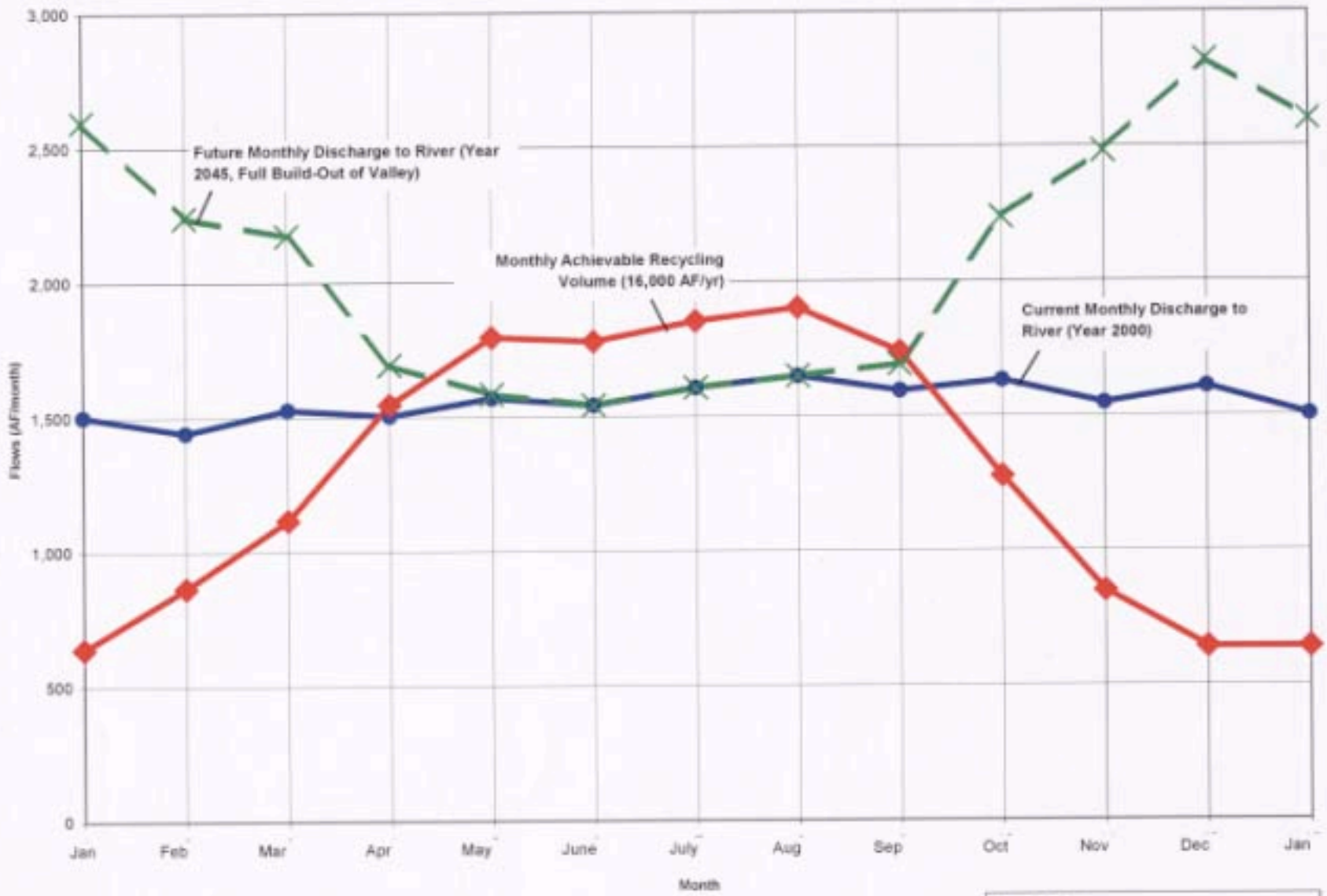
Key Points

1. The simulated water levels generally fall within the range of values measured during the 1980s and 1990s.
2. The relationship between simulated and measured water levels is similar between the original and revised models.

Note: Measured elevations are shown as a range of values (vertical lines). Simulated elevations are shown as a single point (symbol). At well NLF-G1(E), only one field measurement is available (shown as diamond symbol).

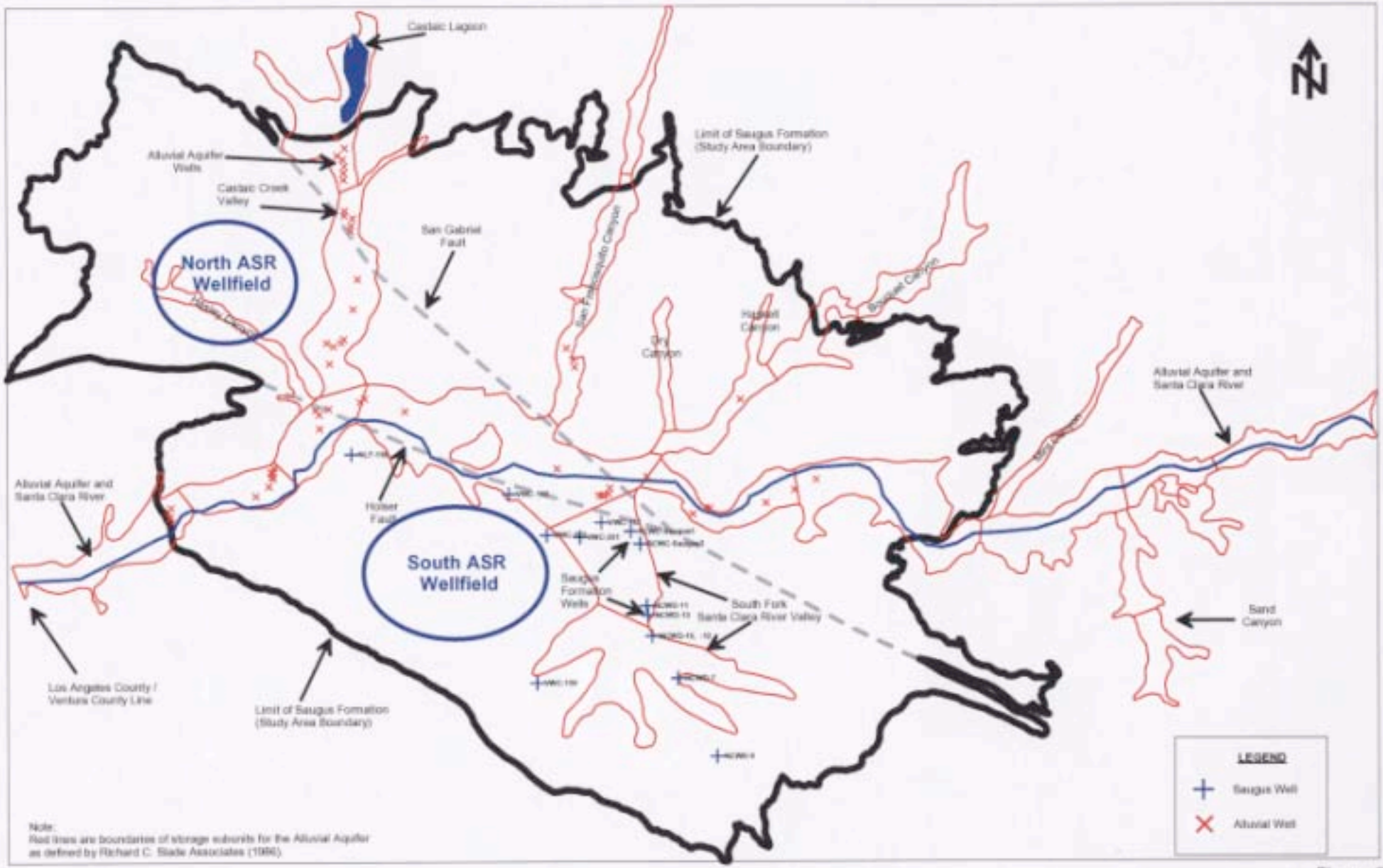
FIGURE 4
Measured and Simulated Groundwater Elevations West of I-5 for Original and Revised Models

Updated Water Resources Impact Evaluation Newhall Ranch (Santa Clarita, California)



Key Point
Future monthly discharges to the river are required to be no less than current (year 2000) discharges.

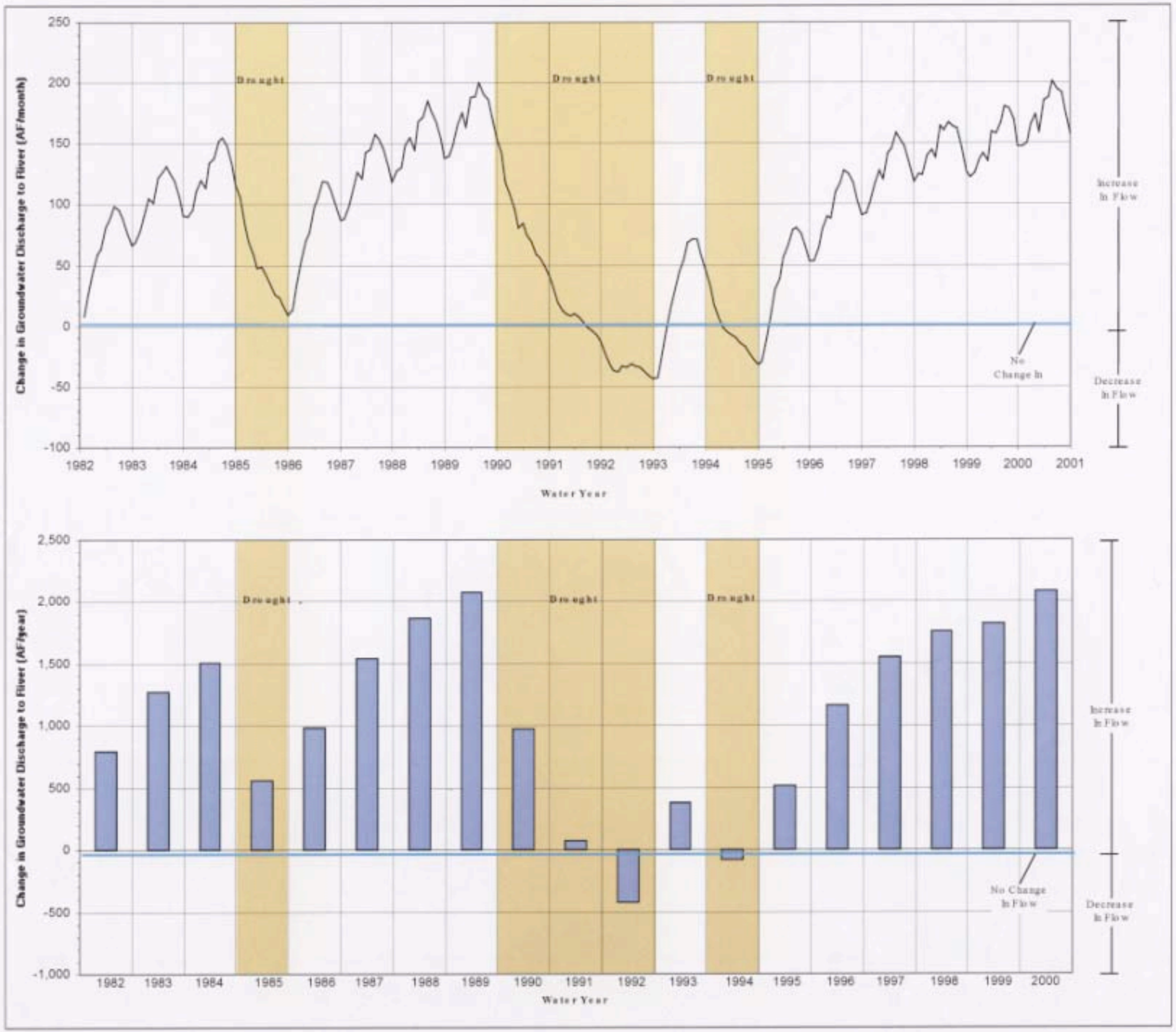
FIGURE 5
Wastewater Reuse and Discharges to River from LACSD WRP Facilities
Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)



CH2MHILL

0 10000 20000

Figure 6
General Locations of Proposed Newhall Ranch ASR Wellfields
Updated Water Resources Impact Evaluation
Newhall Ranch (Santa Clarita, California)



Key Points

1. Increases in groundwater discharge to the river arising from ASR operations will occur except during some drought years. Immediately prior to drought periods, ASR operations could increase river flows as much as 200 AF/month (3.4 cfs) and over 2,000 AF/yr (2.7 cfs), depending on antecedent conditions.
2. During a single-year drought, ASR pumping cycles may or may not reduce flows in the river. During a 3-year drought, ASR pumping cycles will reduce flows in the river, with the declines occurring primarily in the second and third years of a drought. At the end of the drought, the reduction in river flows arising from ASR pumping would be on the order of 43 AF/month (0.7 cfs) in the driest month, and a total of 420 AF reduction during the third year.
3. Following a drought, ASR operations could increase river flows within 4 months of resuming injection.

FIGURE 7
Change in Groundwater Discharge to the Santa Clara River Due to the Newhall Ranch ASR Program

Updated Water Resources Impact Evaluation Newhall Ranch (Santa Clarita, California)

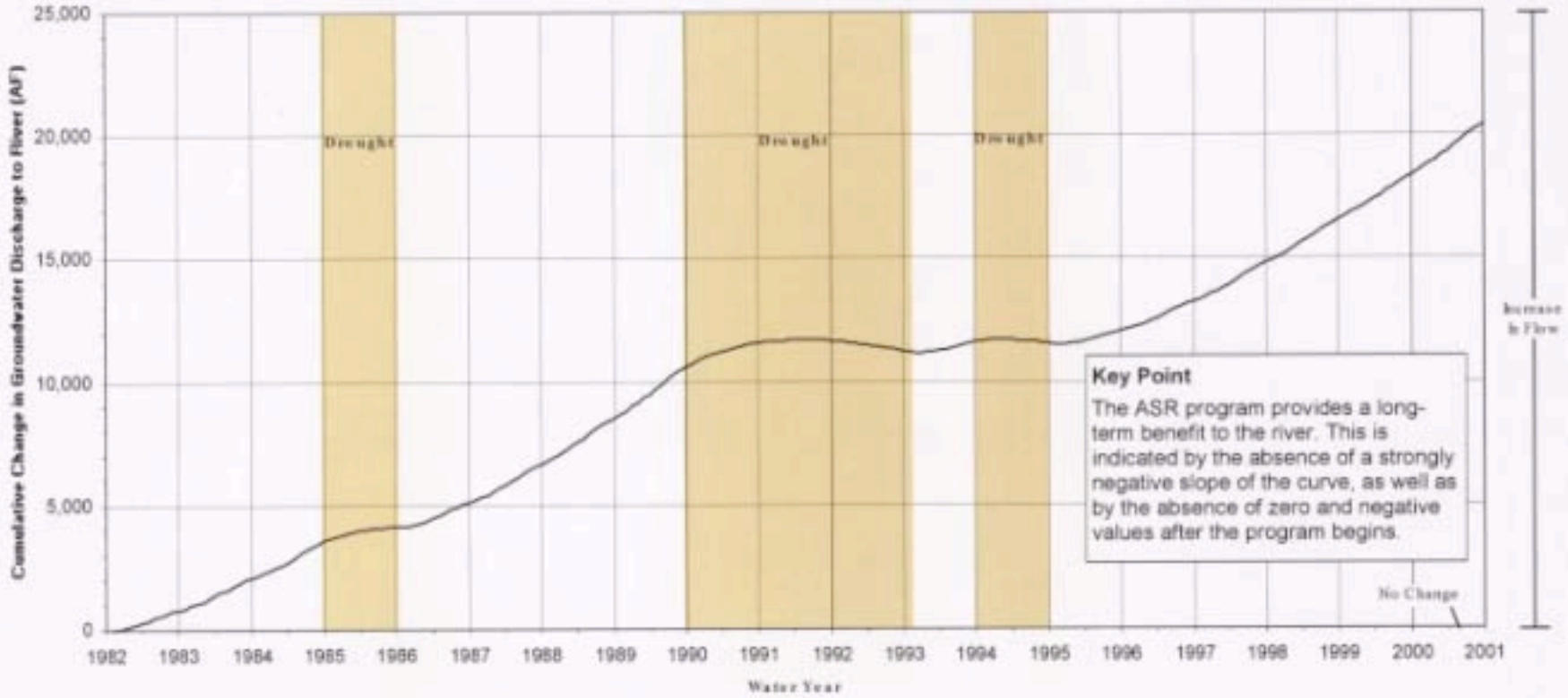


FIGURE 8

Cumulative Change in Santa Clara River Flows Due to the Newhall Ranch ASR Program

Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

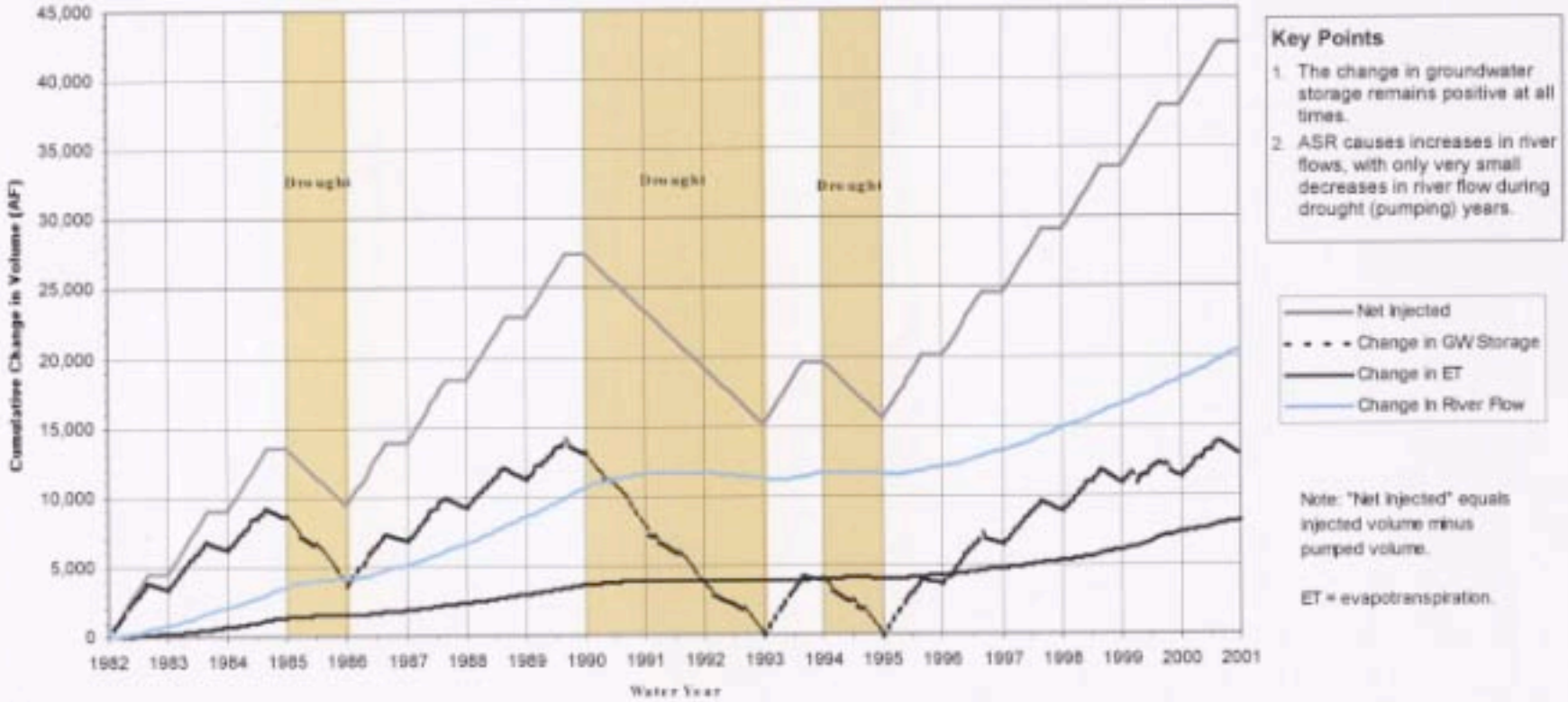
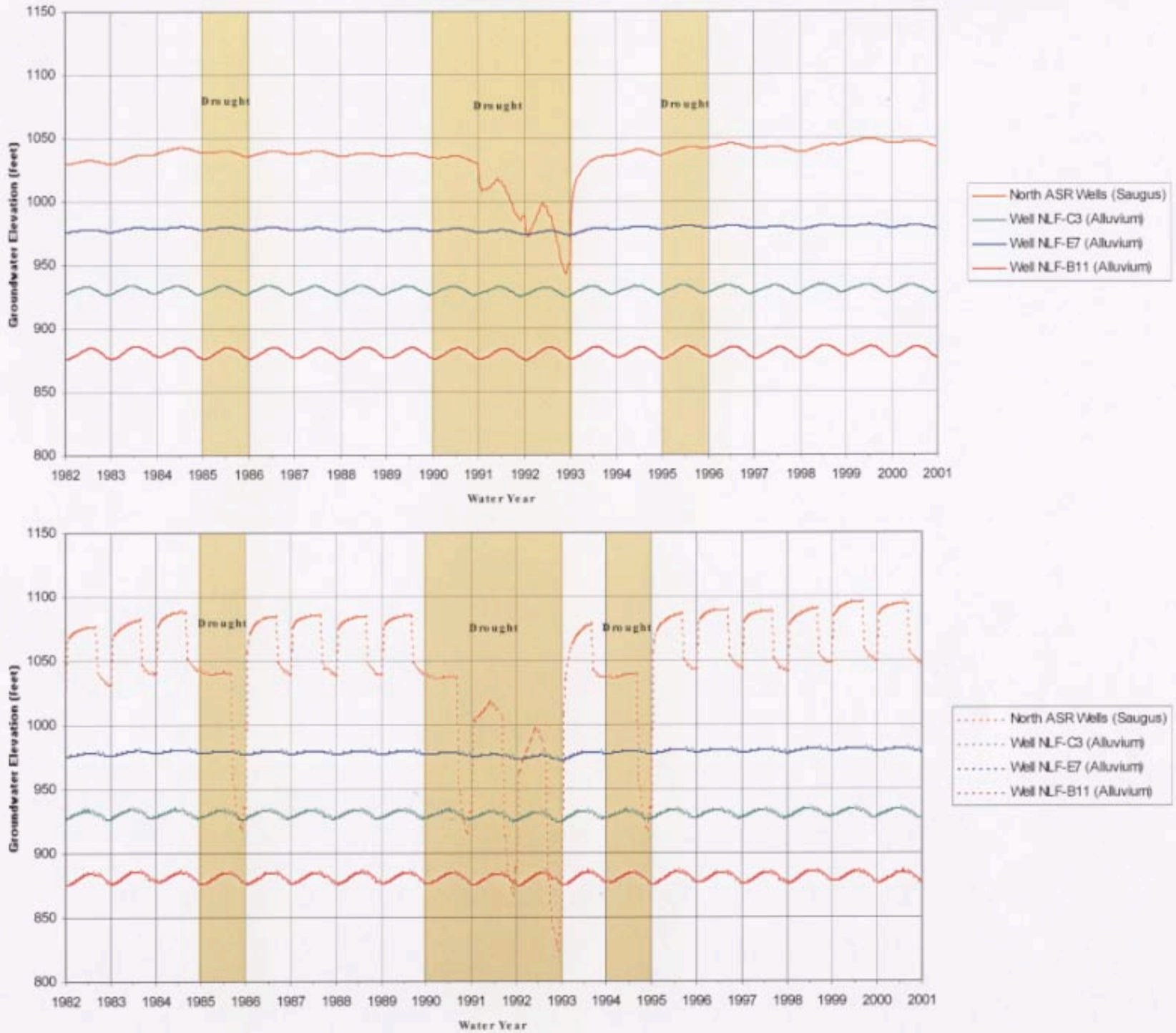


FIGURE 9

Cumulative Net Injection Volume, Cumulative Change in Discharge to Ventura County, and Cumulative Change in Groundwater Storage Due to Newhall Ranch ASR Program

Updated Water Resources Impact Evaluation: Newhall Ranch (Santa Clarita, California)

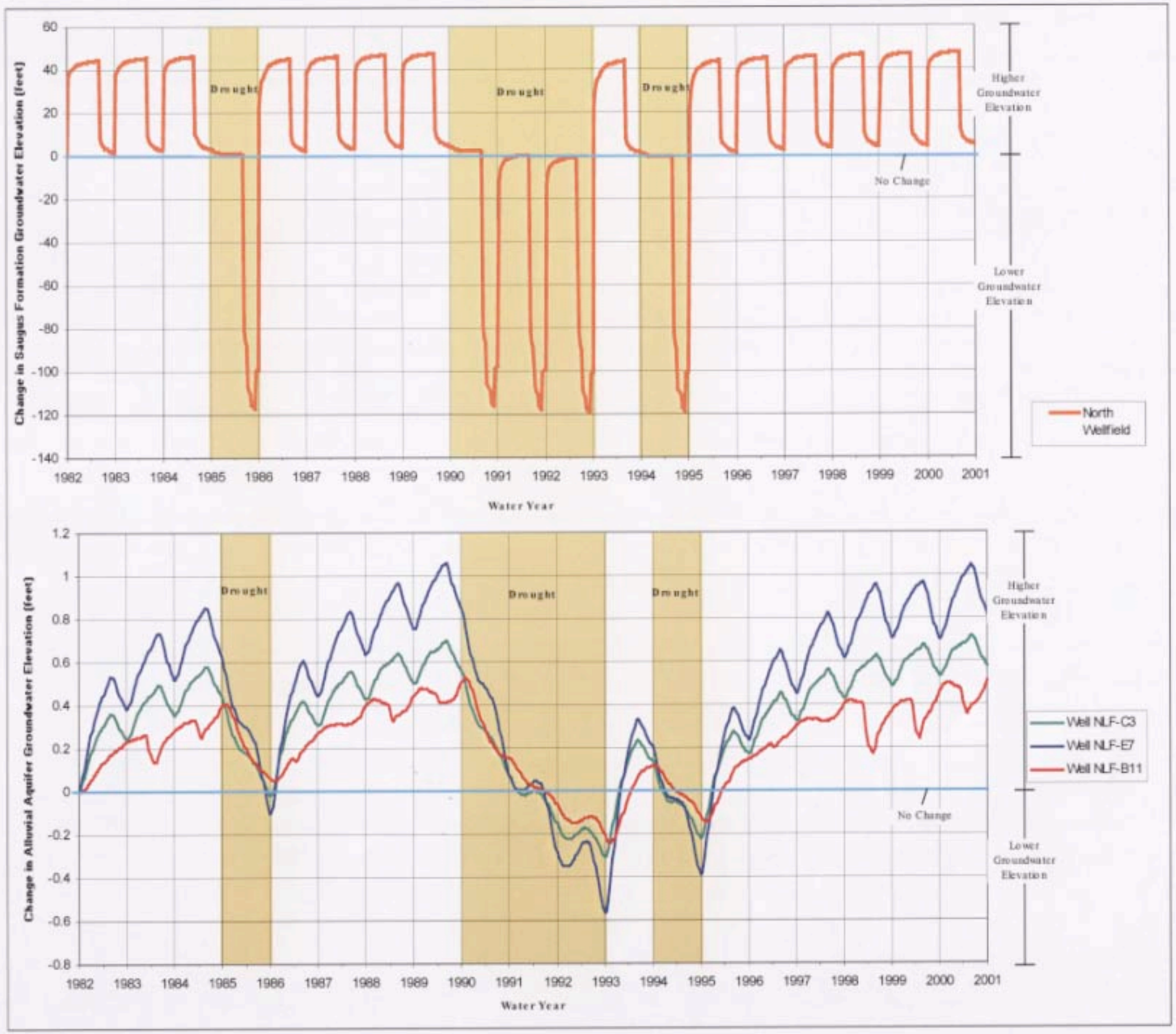


Key Points

1. Without ASR operations, Saugus groundwater elevations in the location of the North ASR Wellfield show only minor fluctuations in non-drought years. During a 3-year drought, water levels decline temporarily when pumping at other wells temporarily increases. The Saugus water levels recover fully and quickly at the end of the 3-year drought. Seasonal water level fluctuations in the Alluvial Aquifer are small and are very similar in drought years and non-drought years.
2. With ASR operations, Saugus groundwater elevations in the North ASR Wellfield show seasonal and year-to-year fluctuations due to injection and pumping cycles. Saugus groundwater elevations decline notably in the wellfield during pumping cycles. However, the Saugus groundwater elevations recover once pumping cycles end and injection cycles resume. Meanwhile, little change in groundwater elevations is visible in the Alluvial Aquifer in response to Saugus water level fluctuations.

FIGURE 10
Simulated Groundwater Elevations of the Saugus Formation in the North ASR Wellfield and Alluvial Aquifer Downstream of Castaic Creek

Updated Water Resources Impact Evaluation Newhall Ranch (Santa Clarita, California)

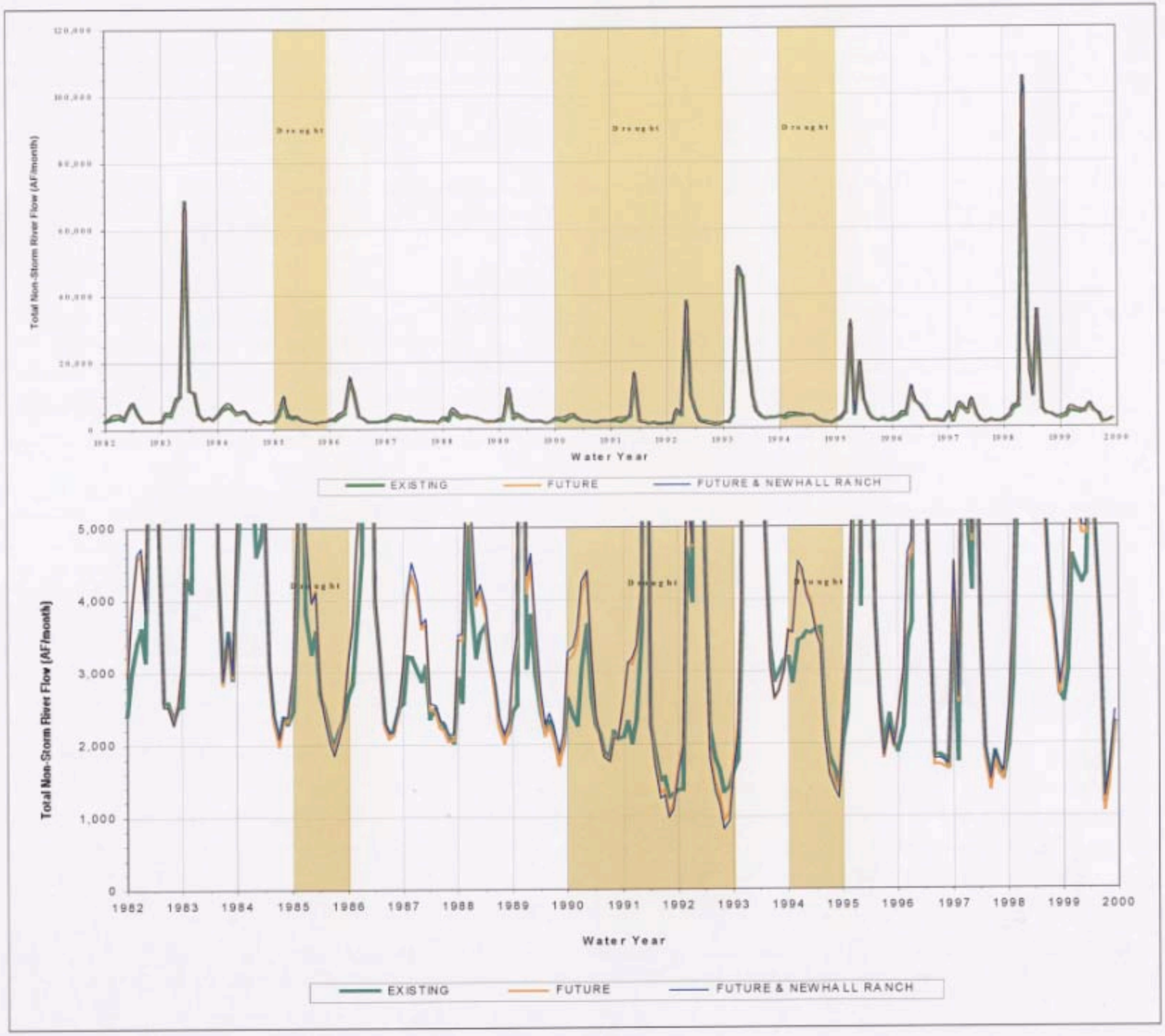


Key Points

1. ASR operations cause Saugus groundwater elevations in the North ASR Wellfield to rise by as much as 50 feet during injection cycles and to decline by as much as 120 feet during pumping cycles.
2. For the Alluvial Aquifer, ASR operations induce one foot or less of change in groundwater elevations in the western portion of the valley (closest to the North and South ASR wellfields). The greatest decrease in Alluvial Aquifer elevations occurs at the end of the 3-year drought, but is only 0.6 feet. This indicates that riparian vegetation that is present in the alluvial sediments along the Santa Clara River corridor will not be adversely affected by the ASR program.

FIGURE 11
Simulated Changes in Groundwater Elevations Due to the Newhall Ranch ASR Program

Updated Water Resources Impact Evaluation Newhall Ranch (Santa Clarita, California)

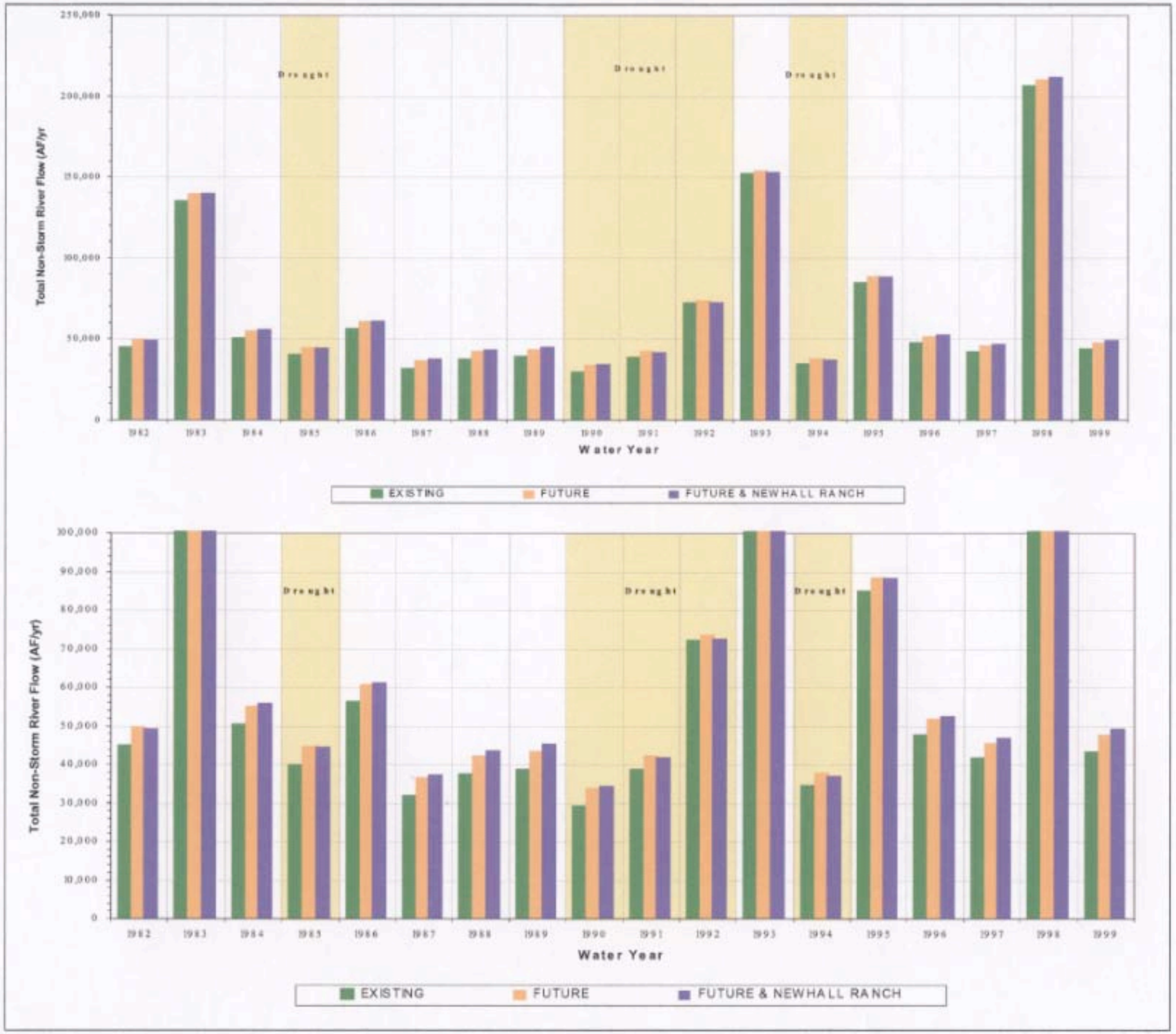


Key Points

1. Considering total river flows, including storm flows, no discernible difference is visible between historical monthly river flows and those predicted for full valley build-out conditions, with or without Newhall Ranch. (See the upper plot.)
2. Focusing on monthly flows below 5,000 AF/month (lower plot), modest differences are visible between existing conditions and future conditions without Newhall Ranch. During seasonal low-flow periods, the future monthly flows are predicted to be less than historical monthly flows. However, this reduction is smaller in magnitude than the increase in flows that occurs during other months, as shown by the higher line for future conditions during early 1987 and early 1994.
3. When Newhall Ranch is included in the future conditions analysis, the river flows are very similar to those that would occur in the future without Newhall Ranch.

Note: The existing condition is defined as historical gaged flows at the County Line, adjusted upwards to include existing (year 2000) discharges from the Saugus and Valencia water reclamation plants (WRPs).

FIGURE 12
Monthly Santa Clara River Flows at County Line
Updated Water Resources Impact Evaluation Newhall Ranch (Santa Clarita, California)



Key Points

1. Considering total river flows, including storm flows, differences due to future conditions (full valley build-out) are visible, unlike the monthly plots shown at the top of Figure 12. Future annual river flows are greater than the historical annual flows, regardless of the status of Newhall Ranch. (See the upper plot.)
2. Focusing on annual flows below 100,000 AF/year (lower plot), differences are even more visible between existing conditions and future conditions without Newhall Ranch.
3. When Newhall Ranch is included in the future conditions analysis, the annual river flows are very similar to those that would occur in the future without Newhall Ranch.

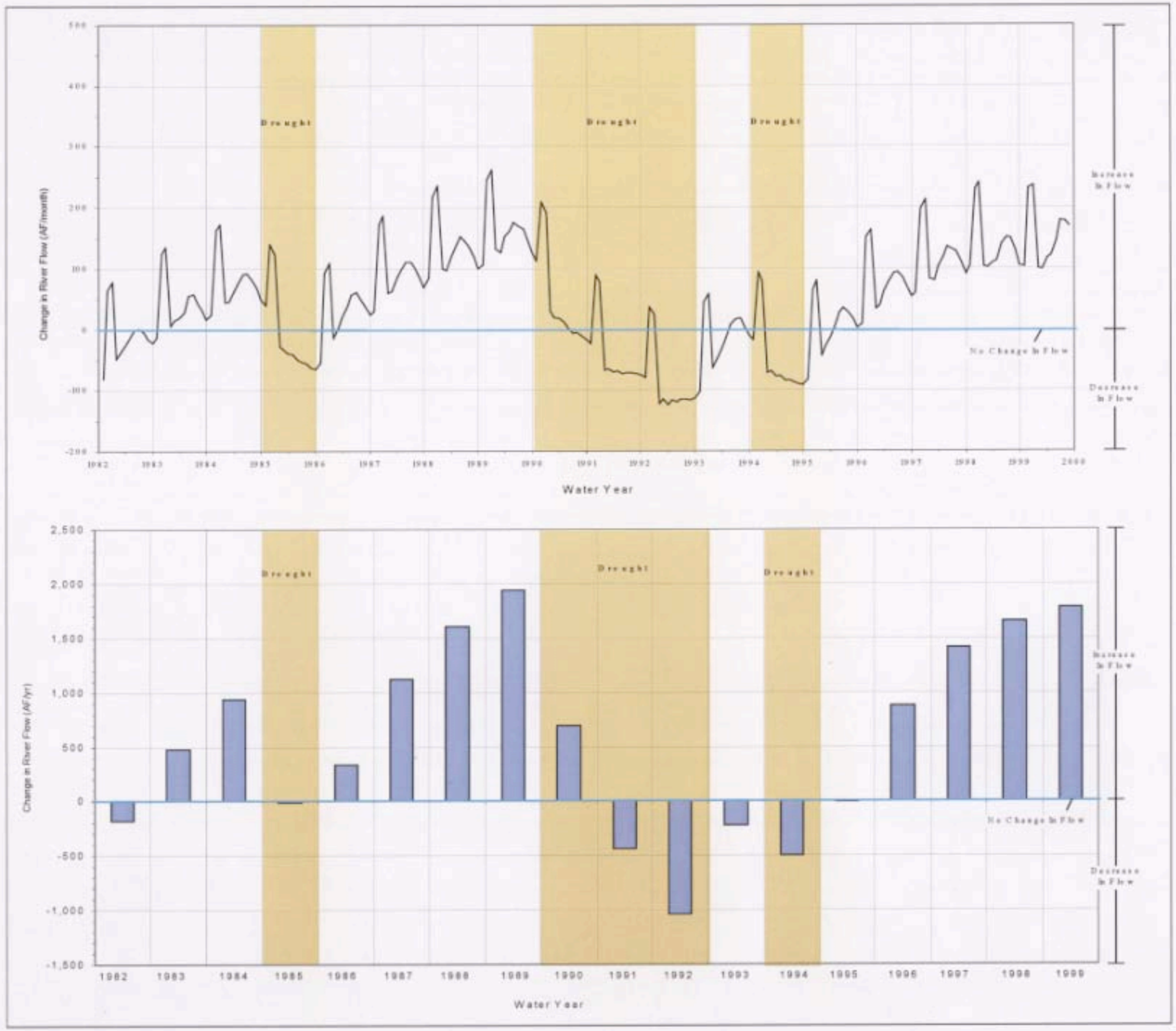
Note: The existing condition is defined as historical gaged flows at the County Line, adjusted upwards to include existing (year 2000) discharges from the Saugus and Valencia water reclamation plants (WRPs).

FIGURE 13
Annual Santa Clara River Flows at County Line
Updated Water Resources Impact Evaluation Newhall Ranch (Santa Clarita, California)

Key Points

1. These plots show the change in Santa Clara River flows that would occur if Newhall Ranch were fully built out under present-day conditions in the valley.
2. The changes in flow are induced by ASR operations; conversion of groundwater pumping from agricultural use to municipal use, which affects the locations and magnitudes of irrigation demands; and operation of the Newhall Ranch Water Reclamation Plant (WRP), which will discharge 286 AF/yr to the river during the winter months (December and January).
3. Monthly flows will increase by as much as 285 AF/month (4.8 cfs) during non-drought years.
4. During the second and third years of a 3-year drought, monthly flows will still be greater than present-day flows during December and January because of direct discharges from the Newhall Ranch WRP during those months. During the other months in years 2 and 3 of the drought, flows will be less than present-day flows, with the reduction as much as 100 AF during the driest month (which is equivalent to 1.7 cfs during that month).
5. During the last year of a 3-year drought, the annual river flow for that year could be 840 AF/yr (1.2 cfs) lower than would occur under present-day conditions in the valley. The effect of Newhall Ranch on annual river flow would be positive in the second year after a 3-year drought ends, unless another drought occurs at that time.

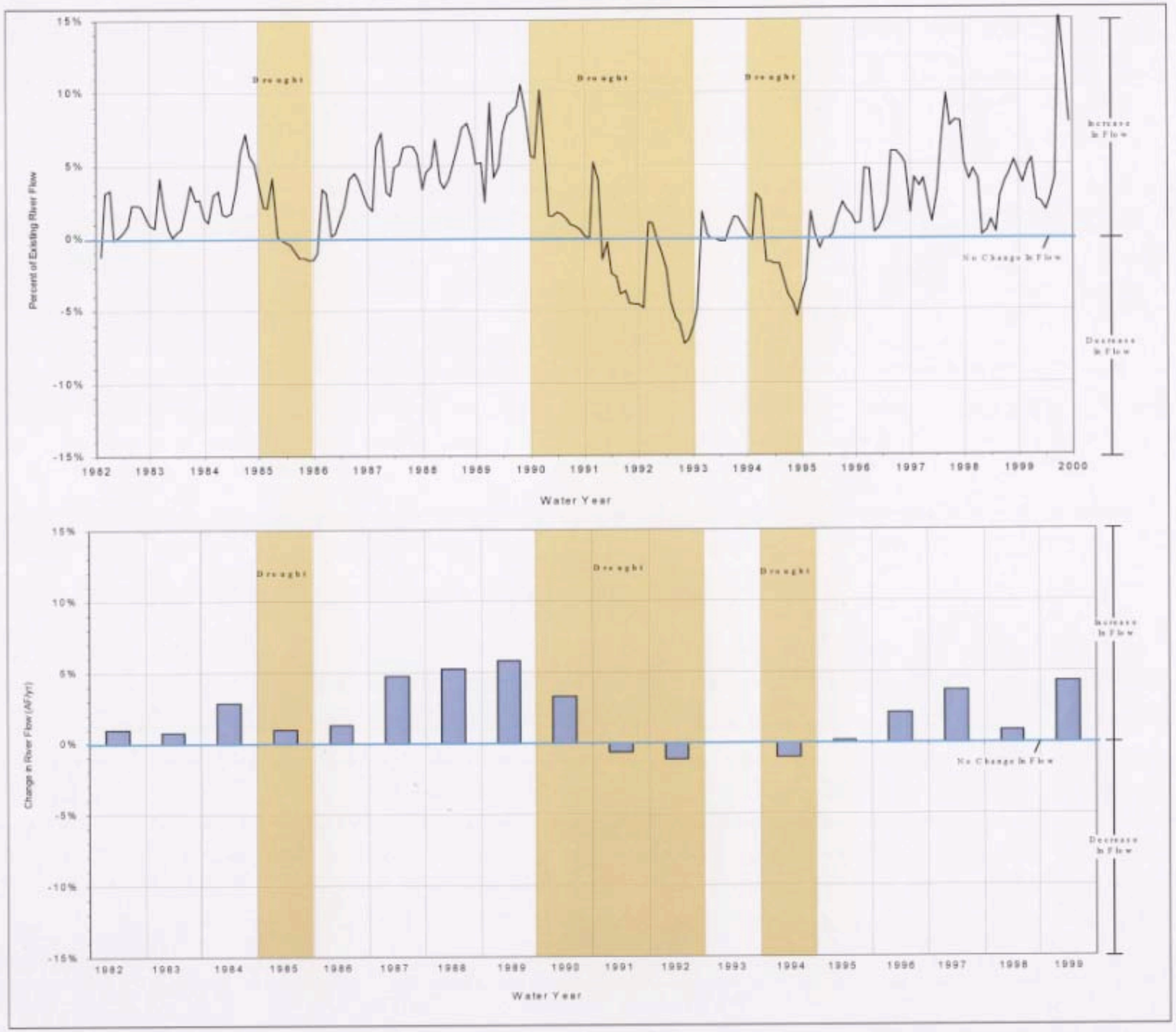
FIGURE 14
Effect of Newhall Ranch Project on Current-Condition Santa Clara River Flows
Updated Water Resources Impact Evaluation Newhall Ranch (Santa Clarita, California)



Key Points

1. These plots show the change in Santa Clara River flows that would occur if Newhall Ranch were fully built out under future (full build-out) conditions in the rest of the valley.
2. The changes in flow are induced by ASR operations; conversion of groundwater pumping from agricultural use to municipal use, which affects the locations and magnitudes of irrigation demands; and operation of the Newhall Ranch Water Reclamation Plant (WRP), which will discharge 286 AF/yr to the river during the winter months (December and January).
3. The effects of Newhall Ranch on river flows using future conditions as the baseline condition for the rest of the valley (Figure 15) are similar to those using present-day conditions as the baseline condition for the rest of the valley (Figure 14).
4. During the second and third years of a 3-year drought, monthly flows will still be greater than present-day flows during December and January because of direct discharges from the Newhall Ranch WRP during those months. During the other months in years 2 and 3 of the drought, flows will be less than the flows that would occur without Newhall Ranch, with the reduction as much as 125 AF during the driest month (which is equivalent to 2.1 cfs during that month).
5. During the last year of a 3-year drought, the annual river flow for that year could be 1,050 AF/yr (1.5 cfs) lower than would occur under future conditions in the valley. The effect of Newhall Ranch on annual river flow would be positive in the second year after a 3-year drought ends, unless another drought occurs at that time.

FIGURE 15
Effect of Newhall Ranch Project on Future-Condition Santa Clara River Flows
Updated Water Resources Impact Evaluation Newhall Ranch (Santa Clarita, California)

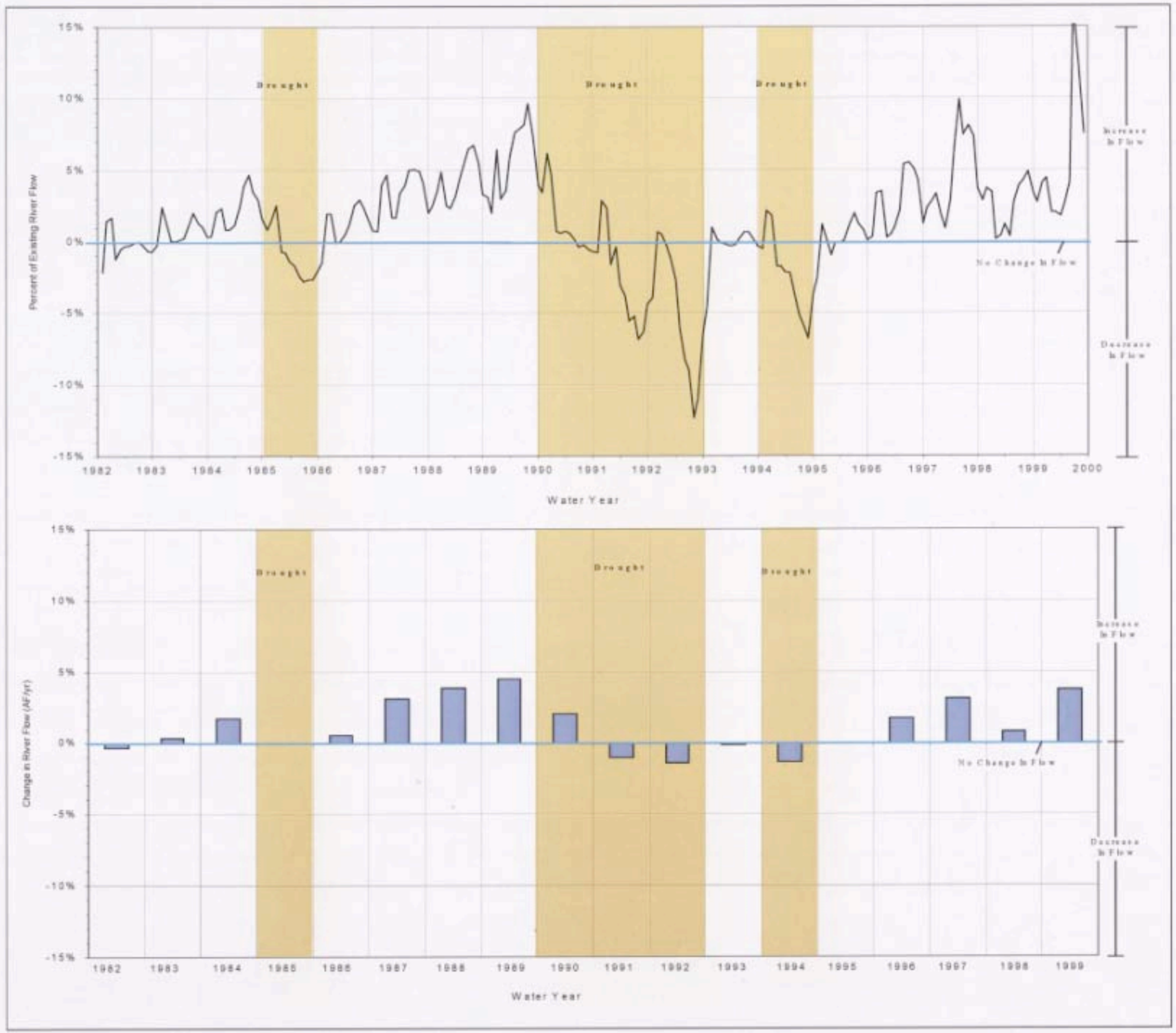


Key Points

1. These plots express the Newhall Ranch impacts as a percentage of the historical flow record.
2. During non-drought years, the increase in river flows is as much as 15 percent on a monthly basis (upper plot) and 6 percent on an annual basis (lower plot).
3. For the 3-year drought, the worst decrease in river flows is about 7.5 percent for the worst month and 1.5 percent for the worst (third) year.

FIGURE 16
Percent Changes in Current-Condition Santa Clara River Flows Caused by the Newhall Ranch Project

Updated Water Resources Impact Evaluation Newhall Ranch (Santa Clarita, California)

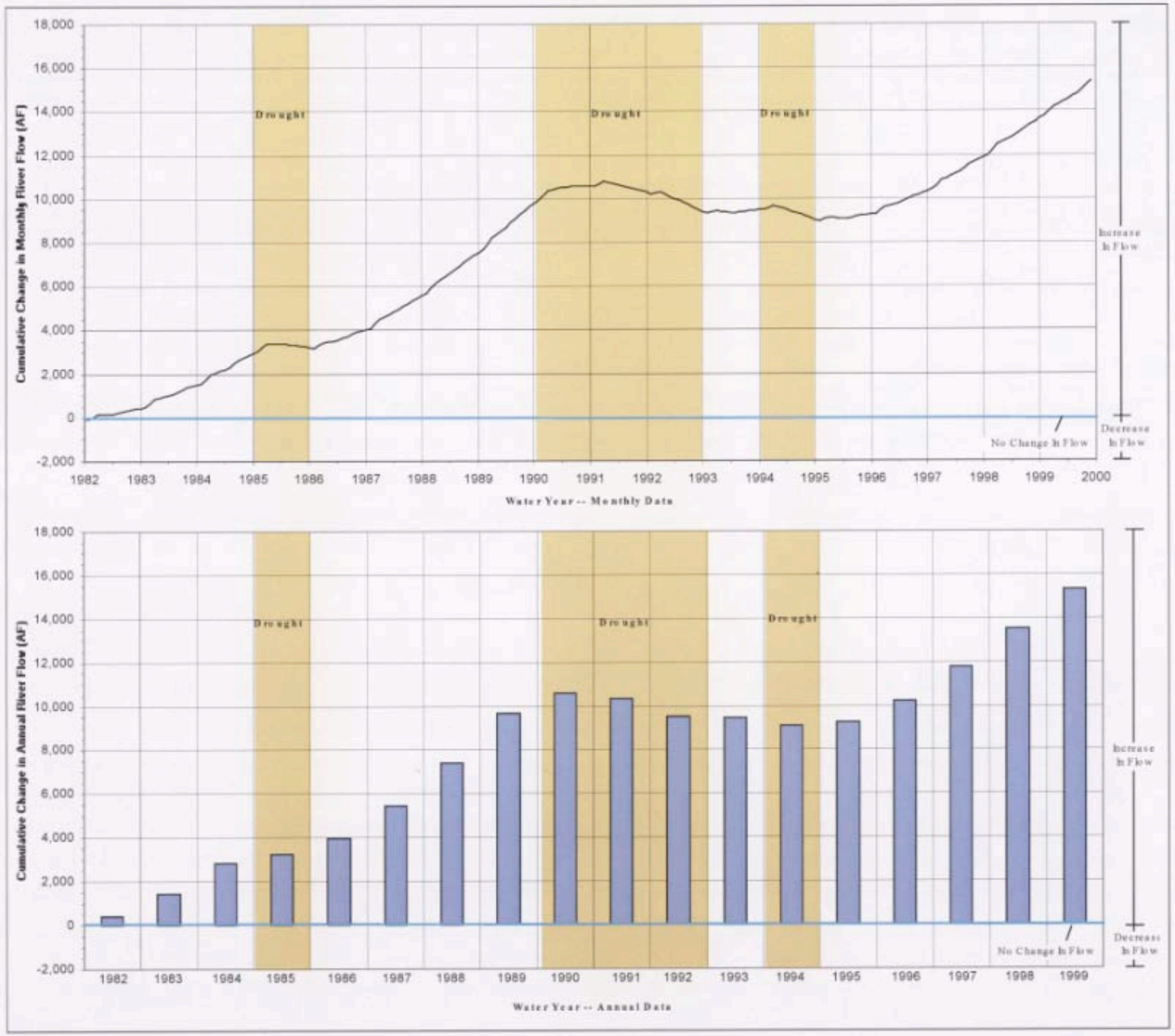


Key Points

1. These plots express the Newhall Ranch impacts as a percentage of the flows that would occur in the future if Newhall Ranch were not present.
2. During non-drought years, the increase in river flows is as much as 15 percent on a monthly basis (upper plot) and 4.5 percent on an annual basis (lower plot).
3. For the 3-year drought, the worst decrease in river flows is 12.5 percent for the worst month and 1.8 percent for the worst (third) year.

FIGURE 17
Percent Changes in Future-Condition Santa Clara River Flows Caused by the Newhall Ranch Project

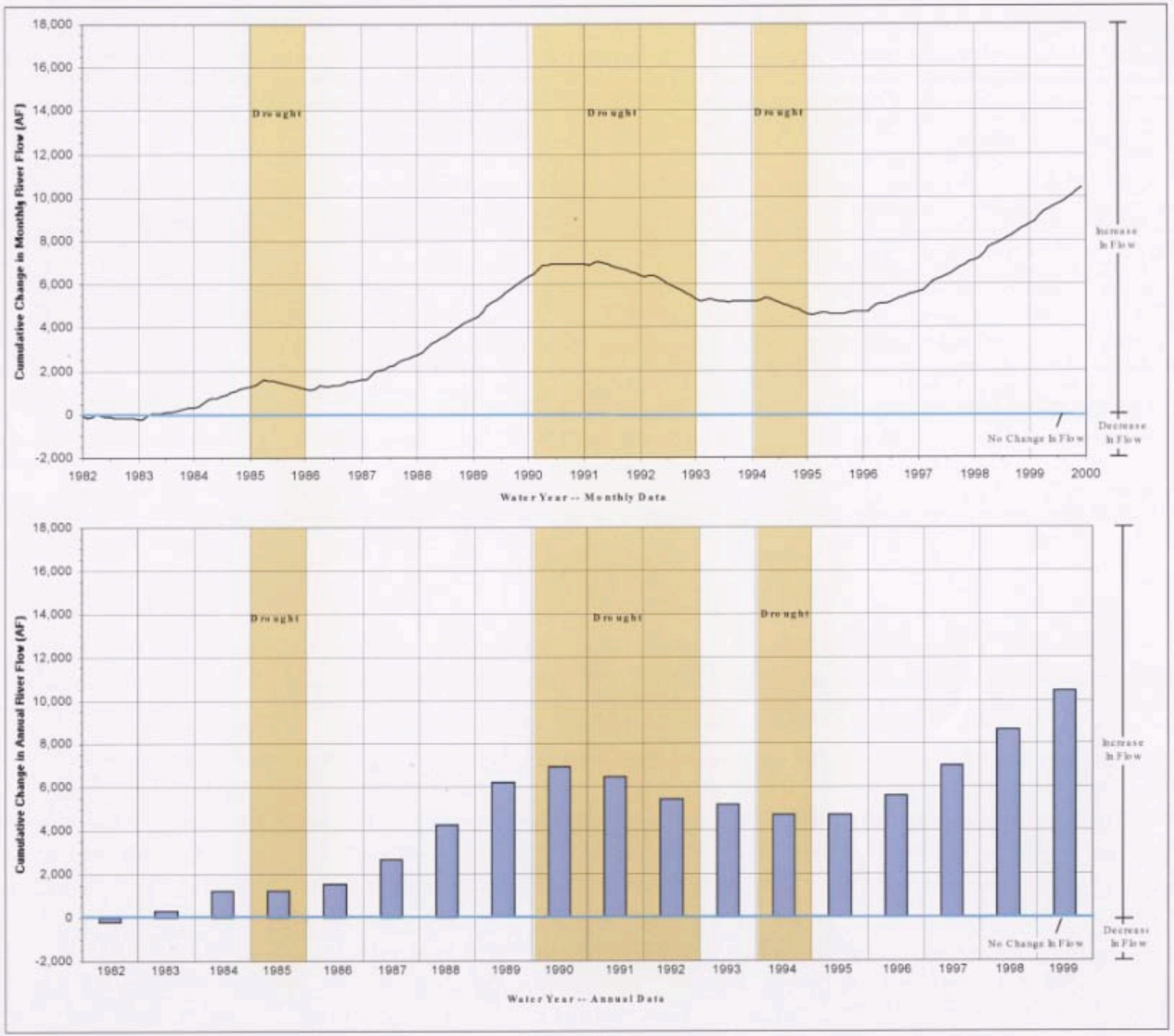
Updated Water Resources Impact Evaluation Newhall Ranch (Santa Clarita, California)



Key Points

1. These plots show the cumulative impacts of the Newhall Ranch project on a monthly basis (upper plot) and annual basis (lower plot). These plots use present-day conditions as the baseline for evaluating project impacts.
2. Monthly cumulative impacts will be positive on a long-term basis. The project may have a small negative cumulative impact prior to the first discharges from the Newhall Ranch WRP. However, this negative impact will be eliminated by the combined effects of ASR injection and the occasional discharges from the Newhall Ranch WRP.
3. Annual cumulative impacts will be positive on a long-term basis, including during the first year of the project (if it is not a drought year).

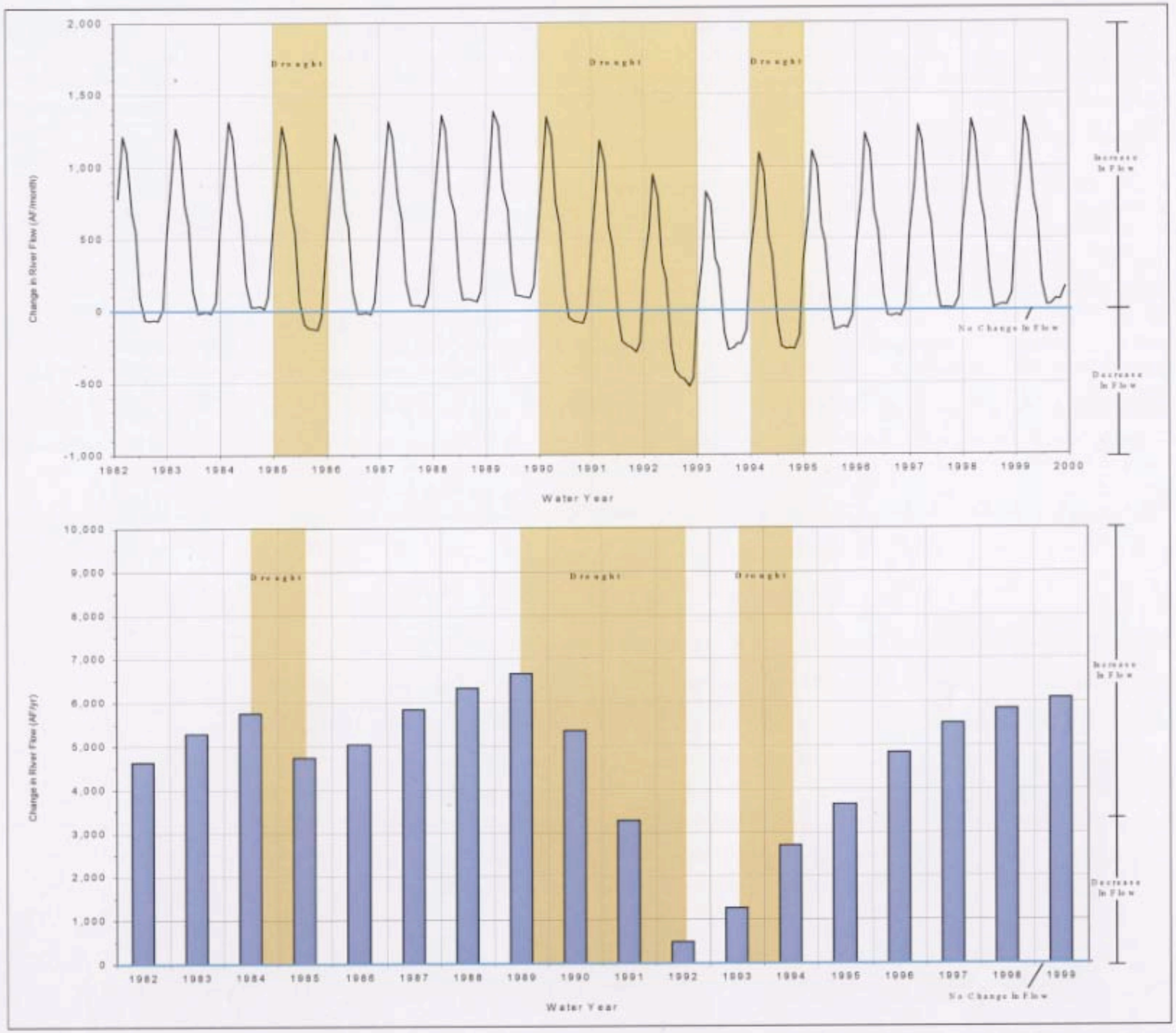
FIGURE 18
Cumulative Effect of Project on Current-Condition Santa Clara River Flows
Updated Water Resources Impact Evaluation Newhall Ranch (Santa Clarita, California)



Key Points

1. These plots show the cumulative impacts of the Newhall Ranch project on a monthly basis (upper plot) and annual basis (lower plot). These plots use future conditions (full valley build-out) as the baseline for evaluating project impacts.
2. Monthly cumulative impacts will be positive on a long-term basis. The project may have a small negative cumulative impact prior to the first discharges from the Newhall Ranch WRP. However, this negative impact will be eliminated by the combined effects of ASR injection and the occasional discharges from the Newhall Ranch WRP.
3. Annual cumulative impacts will be positive on a long-term basis, including during the first year of the project (if it is not a drought year).

FIGURE 19
Cumulative Effect of Project on Future-Condition Santa Clara River Flows
Updated Water Resources Impact Evaluation Newhall Ranch (Santa Clarita, California)



Key Points

1. This plot shows the combined effect of growth inside and outside Newhall Ranch on present-day river flows.
2. Monthly flows are generally greater than under present-day conditions, except in the summer months during and immediately after a 3-year drought.
3. On an annual basis, the flows are greater than under present-day conditions, even during a 3-year drought.

FIGURE 20
Effect of Newhall Ranch Project and Other Expected Future Area Growth on Current-Condition Santa Clara River Flows

Updated Water Resources Impact Evaluation Newhall Ranch (Santa Clarita, California)

APPENDIX 2.5(b)

Nickel Water Contract Documentation

NICKEL FAMILY LLC

15701 Highway 178 • P.O. Box 60679 • Bakersfield, CA 93386-0679
(661) 872-5050 • Fax: (661) 872-7141

August 16, 2002

RECEIVED
AUG 21 2002
By

Mr. Robert DiPrimio, President
Valencia Water Company
24631 Avenue Rockefeller
Valencia CA 91355

Dear Mr. DiPrimio:

Enclosed please find the following documents:

1. Contract for Purchase and Sale of Kern River Water and Storage Rights dated 3/18/81.
2. Resolution of Nickel Family LLC Class A and Class B giving approval to sign Contract.
3. Resolution of Nickel Family LLC Management Committee giving approval to sign Contract.
4. Resolution of Bravo Management Company Board of Directors giving approval to sign Contract.
5. Resolution of Olcese Water District giving approval to sign Contract.
6. Resolution of Kern County Water Agency Board of Directors giving approval to sign Contract.
7. Resolution of Kern County Water Agency re: 10,000 acre feet use out of County.
8. Kronick, Moskovitz, Tiedemann & Girard Opinion Letter of Counsel re; Water Rights.
9. Letter from Gene R. McMurtrey, Attorney for Olcese Water District, representing that the representations and warranties given by Olcese in Article 7.1(k) are true and correct.

If I can be of further assistant, please call.

Sincerely,

Rita

Rita J. Rowland
Administrative Assistant

Encs.
File: 220-F-17

053837

1981 MAY 26 AM 11:35

OLCESE WATER DISTRICT
Suite 307
1415-18th Street
Bakersfield, Calif. 93301

RECORDED
RAY
KERN

CONTRACT FOR PURCHASE AND SALE OF KERN RIVER
WATER AND STORAGE RIGHTS

28962

THIS AGREEMENT, dated March 18, 1981, is between OLCESE WATER DISTRICT, a California water district, hereinafter "Olcese", and LA HACIENDA, INC., a California corporation, GEORGE W. NICKEL, JR., and ADELE R. NICKEL, husband and wife, hereinafter collectively referred to as "La Hacienda."

RECITALS

1. La Hacienda owns, administers and/or represents certain water rights in the Kern River and storage entitlement in Isabella Reservoir. Such water and storage rights which are collectively hereinafter generally referred to as the "Hacienda Water Rights," are dealt with in various previously executed contracts, including the following:

(a) Kern River Water Rights and Storage Agreement, dated December 31, 1962, among and between certain districts identified as the "Upstream Group" and Hacienda Water District and Tulare Lake Basin Water Storage District, identified as the "Downstream Group";

(b) Contract dated October 23, 1964, by and among the United States of America and North Kern Water Storage District, Buena Vista Water Storage District, Tulare Lake Basin Water Storage District and Hacienda Water District;

(c) Kern River Water Settlement Agreement dated January 1, 1963, by and between the Tulare Lake Basin Water Storage District and the Hacienda Water District;

(d) Supplement to Kern River Water Settlement Agreement dated August 8, 1974, by and between Tulare Lake Water Storage District and Hacidena Water District;

(e) Water Substitution Agreement dated November 14, 1972, by and between Buena Vista Water Storage District and Hacienda Water District, and any amendments or supplements thereto;

(f) Agreement for Establishment and Maintenance of Minimum Recreation Pool of 30,000 Acre Feet In Isabella Reservoir dated November 8, 1963, by and between Buena Vista Water Storage District, North Kern Water Storage District, Tulare Lake Basin Water Storage District, Hacienda Water District and the County of Kern;

(g) Agreement of Sale and the Kern River Water Storage and Reservation Agreement which is incorporated therein, both of which are dated October 16, 1978, and are by and between George W. Nickel, Jr., Adele R. Nickel, La Hacienda, Inc., and Tulare Lake Representatives, a joint venture, and

(h) Kern River Water Right and Storage Allocation Agreement dated March 10, 1961, by and between Hacienda Water District, Kern River Delta Farms, as first parties, and Robert Burhans, Jr., Gertrude B. Burhans, his wife, and Burhans & Trew, Inc., as second parties. The interests of the second parties (Burhans) established by this agreement were subsequently assigned to Miller & Lux, Incorporated on March 10, 1961, thence to J. G. Boswell Company on January 11, 1974, and thence to George W. Nickel, Jr., on October 4, 1974.

It is the understanding and intent of the parties that the Hacienda Water Rights include 100% of the "Downstream Group's" rights as described in the 1962 agreement referred to in (a) above.

2. Olcese and the City of Bakersfield (hereinafter the "City") have entered into two agreements which are referred to

respectively as "Agreement No. 77-07 W.B.", dated November 9, 1977, and "Agreement No. 78-12 W.B.", dated June 27, 1978, which permit Olcese to use the City's 2800-acre spreading grounds west of the City for spreading and recovery of water under certain circumstances. These 2800 acres are hereinafter referred to as the "City's Kern River spreading area."

3. On August 1, 1979, and February 11, 1980, Olcese and La Hacienda entered into two Agreements for Sale and Purchase of Stored Water (Kern River Fan) providing for the sale and transfer of a portion of the Hacienda Water Rights to Olcese. Olcese and La Hacienda now desire to supplant those agreements with this contract providing for the purchase and sale of all of the Hacienda Water Rights upon the terms and conditions provided for herein.

4. Olcese is a California water district duly organized and existing under and by virtue of the laws of the State of California with full and lawful power and authority to enter into this agreement and to perform all covenants and obligations on its part to be performed hereunder.

5. La Hacienda, Inc., is a California corporation and George W. Nickel, Jr., and Adele R. Nickel, his wife, own a majority of the stock of La Hacienda, Inc. La Hacienda, Inc., is lawfully empowered and authorized to enter into this agreement and perform all covenants and obligations on its part to be performed hereunder.

NOW, THEREFORE, IT IS AGREED between the parties as follows:

Section 1. Sale and Transfer of Hacienda Water Rights and Substitution of Olcese as Attorney-In-Fact.

La Hacienda hereby sells, transfers, assigns and sets over to Olcese all of its rights, title and interest in the Hacienda Water Rights. La Hacienda also hereby substitutes Olcese in place of La Hacienda, Inc., as Hacienda Water District's Attorney-In-Fact under that special power of attorney granted to La Hacienda, Inc., by Hacienda Water District on September 2, 1980, which is recorded in Book 1184, at Page 120, Official Records of Kings County and in Book 5315, at Page 1253, Official Records of Kern County.

Section 2. Further Assurances.

The parties agree to make, execute and deliver such documents and undertake such other and further acts as may be reasonably necessary or convenient to carry out the intent of the parties to this contract. In this regard, La Hacienda shall use its best efforts to obtain from the Hacienda Water District, Tulare Lake Basin Water Storage District and Tulare Lake Representatives any documents or actions that may be reasonably necessary or convenient to evidence the transfer of the Hacienda Water Rights to Olcese.

Section 3. Place and Manner of Use.

(a) Except for water made available to La Hacienda under the provisions of Sections 6, 7 and 8 below or as provided for in Paragraph (b) of this section, no Hacienda Water Rights

water sold to Olcese under this contract shall be sold or otherwise made available for use outside the boundaries of Olcese as they now exist without the prior written consent of La Hacienda; provided, however, the written consent of La Hacienda shall not be required for the service of Hacienda Water Rights water to all or any portion of the City's Rio Bravo Annexation which, as of the date of this contract, is being considered by LAFCO for annexation to Olcese, if it is annexed to Olcese.

(b) The parties recognize that the Hacienda Water Rights are rights to high flows in the Kern River which need regulation in order to be put to maximum beneficial use. For this reason, Olcese has entered into the two agreements with the City referred to in Recital No. 2 above, and 76,932 acre feet of Hacienda Water Rights water were spread, prior to January 1, 1981, all of which is now in storage in the City's Kern River spreading area for the benefit of Olcese pursuant to those agreements. In order to continue to conserve and maximize the use of Hacienda Water Rights water, Olcese shall spread water on the City's Kern River spreading area pursuant to said agreements when it is available for such purpose, so that this water will be available for recovery at later times for use either by Olcese directly or through exchanges or by La Hacienda pursuant to the provisions of Sections 7 and 8 below. In addition to using this water through such spreading and recovery operations, Olcese may use such water by direct diversion from the Kern River within Olcese boundaries when such water is available; provided, however,

that, except as provided in Section 6 hereof, Olcese shall not use water stored in Isabella Reservoir for either direct diversion or spreading.

Section 4. Price.

(a) Throughout the term of this contract, Olcese shall pay La Hacienda for each acre foot of Hacienda Water Rights water put to use by Olcese an amount equal to the price per acre foot then being paid to the State of California by the Kern County Water Agency for California Water Project entitlement water made available for use in the Agency's Improvement District No. 4 at the Tupman Turnout (Reach 12E) of the California Water Project Aqueduct; provided, that if and when the price per acre foot of such water exceeds $55.00 the price thereafter shall be $55.00 an acre foot.

(b) Although title to Hacienda Water Rights water is by this contract conveyed to Olcese, Olcese will have no requirement to pay La Hacienda for any such water until it is used by Olcese by exchange or otherwise. For payment purposes Hacienda Water Rights water shall not be deemed to have been used by Olcese until either water theretofore spread in City's Kern River spreading area is extracted for Olcese's use or Hacienda Water Rights water has been directly diverted from the Kern River for use within Olcese.

Section 5. Time and Manner of Payment.

Olcese shall meter the amount of Hacienda Water Rights water it uses each year in a manner acceptable to La Hacienda.

The quantities used each month shall be reported to La Hacienda no later than the 15th day of the subsequent month. The payments for each month's use required by Section 4 above shall be made on or before 90 days following the end of the month in which the water is used.

Section 6. Use of Isabella Reservoir Storage and River Flows and Payment of Obligations and Charges Associated with Hacienda Water Rights.

(a) Any Hacienda Water Rights water stored in Isabella Reservoir not needed by Olcese for spreading to meet Olcese's thirteen year requirement referred to in Section 8 below, all Hacienda Water Rights water not needed by Olcese for direct diversion from the Kern River, and any such water not usable by Olcese for spreading may be used and disposed of by La Hacienda at any time, in any manner, at any place outside the boundaries of Olcese, and for any purpose La Hacienda thinks proper without any payments to Olcese for such water except as provided in (b) below. Any such water which becomes available for La Hacienda's use pursuant to the preceding sentence may be kept in storage in Isabella Reservoir for use in subsequent years by La Hacienda and shall not be available for use by Olcese.

(b) A portion of La Hacienda's Hacienda Water Rights were obtained subject to the following obligations: (1) obligations owed to Tulare Lake Basin Water Storage District (Tulare Lake BWSD), (2) Isabella Reservoir storage charges, and (3) charges for Kern River Watermaster costs. These obligations are set

forth in the agreements referred to in Recital No. 1 above. La Hacienda shall meet these obligations, subject to being reimbursed by Olcese for that portion of the Isabella Reservoir storage charges attributable to water stored therein for use by Olcese pursuant to (a) above, to and including the year in which Olcese's annual use of Hacienda Water Rights water for consumption within Olcese Water District first reaches 5,000 acre feet. Thereafter, Olcese shall be responsible for paying these obligations, subject to being reimbursed by La Hacienda for that portion of these obligations attributable to water stored in Isabella Reservoir for La Hacienda's use pursuant to (a) above. The reimbursement payments to be made by one party to the other for Isabella Reservoir storage shall be made 90 days following notice.

Section 7. Option to Purchase Excess Water.

The parties realize that for many years the quantity of water available to Olcese from the City's Kern River spreading area should be substantially in excess of Olcese's needs for water within its boundaries. As part of the consideration for the sale of the Hacienda Water Rights to Olcese, La Hacienda shall have each year during the term of this contract a right to purchase all of Olcese's water in the City's Kern River spreading area that is excess to Olcese's needs, determined as hereinafter provided in Section 8 (a), which water is referred to herein as "option water." As between Olcese and La Hacienda, but subject to the limitations in Agreement 78-12 W.B., or any

amendment or extension thereof, any such option water extracted and delivered by Olcese to La Hacienda may be used and disposed of by La Hacienda in any manner, at any place outside the boundaries of Olcese, and for any purpose La Haciendda thinks proper, either during the year the option is exercised or, subject to the provisions of Section 10, any time thereafter, at La Hacienda's discretion.

Section 8. Procedure for Determining Availability and Purchase of Option Water.

(a) The following procedure shall be used to determine how much water in the City's Kern River spreading area Olcese has each year in excess of its needs available for purchase by La Hacienda pursuant to Section 7 above. A consulting engineering firm designated and paid by Olcese, in conjunction with the City as provided in Agreement No. 78-12 W.B., and after consultation with La Hacienda shall annually on or before August 1st of each year determine what Olcese's requirements for Hacienda Water Rights water will be for the following thirteen years. This water requirement shall be compared to the amount of water that Olcese then has in storage in the City's Kern River spreading area, and the amount of water then in storage that is over 5,000 acre feet greater than the thirteen year requirement shall be deemed to be excess water available for option by La Hacienda pursuant to Section 7 above and Olcese shall give La Hacienda written notice of this amount by August 1 of each year.

(b) At the request of La Hacienda, option water may either be delivered immediately or kept in storage in the under-

ground for La Hacienda's later use. Any option water left in storage for later use by La Hacienda shall not be considered as water that Olcese has in storage in determining the availability of option water in subsequent years.

Section 9. Amount of Option Water Available for Purchase by La Hacienda.

It has been determined that for the thirteen year period commencing January 1, 1981, Olcese's requirements are 68,150 acre feet and all water Olcese had in storage in the City's Kern River spreading area on January 1, 1981, in excess of 73,150 acre feet is hereby deemed option water under the provisions of this contract.

Section 10. Price for Option Water.

For each acre foot of option water purchased by La Hacienda pursuant to Section 7 above, La Hacienda shall pay Olcese $10.00 plus all costs of such water to Olcese, including but not limited to a proration of operation and maintenance and capital costs. The price should be escalated based on changes from the July 1, 1980, price under "all commodities" classification of the wholesale price indices for Major Commodity Group published by the U.S. Bureau of Labor Statistics. Adjustment shall be made in January of each year. If the reference index is discontinued, the parties shall agree upon an appropriate substitute basis to reflect the effects of inflation. Olcese shall meter the option water delivered by Olcese to La Hacienda as it is extracted and report the quantities to La Hacienda no later than the 15th day of each month. La Hacienda shall pay

for each month's water no later than 90 days following the end of the month in which the water is delivered; provided that any option water not delivered within three years shall be paid for by the end of such three years or shall revert back to Olcese as water available to it.

Section 11. Use of Proceeds From Sale of Option Water.

The net receipts of Olcese resulting from La Hacienda's purchase of the water provided for in Section 7 above, over and above all costs to Olcese for water so purchased by La Hacienda, shall, to the extent necessary, be used by Olcese in the performance of its obligations under Article 1 of its Agreement No. 77-07 W.B. with the City, as amended. If these net receipts are not sufficient to enable Olcese to meet its obligations under Agreement No. 77-07 W. B., La Hacienda shall advance to Olcese sufficient funds for this purpose, and Olcese shall repay such advances, with interest at the maximum interest rate permitted by law at the time of the advance, as Olcese is able to do so from future net revenues from the sale of water extracted from the City's Kern River spreading area.

Section 12. Use of Hacienda Water Rights.

All rights to store, sell, transfer or substitute Hacienda Water Rights water which are transferred to Olcese hereunder and which are not needed by Olcese to make Hacienda Water Rights water available for use within Olcese, shall be made available to La Hacienda for its use and Olcese shall cooperate with La Hacienda to enable La Hacienda to make use of such rights.

Section 13. Term of Contract.

This contract shall be in perpetuity.

Section 14. Termination of August 1, 1979, and February 11, 1980, Agreements.

This contract shall supersede the Agreements for Sale and Purchase of Stored Water (Kern River Fan) dated August 1, 1979, and February 11, 1980, between Olcese and La Hacienda, Inc., and upon execution of this contract those agreements shall have no further force or effect.

Section 15. La Hacienda's Separate Water.

Heretofore, La Hacienda has delivered to the Kern County Water Agency 32,163 acre feet of Kern River water for use in the Agency's Improvement District No. 4 treatment plant. This water was delivered pursuant to an exchange agreement with the Agency wherein the Agency agreed to deliver to La Hacienda at some future date an equal amount of Improvement District No. 4's allocation of State Project Water. This right to receive such water from the Agency belongs to La Hacienda and is not in any way being transferred, assigned or conveyed to Olcese by this contract.

Section 16. Representations.

La Hacienda hereby agrees to hold Olcese harmless from and against any and all loss, liability and expense which Olcese may sustain by reason of the breach of any of the representations set forth in Recitals Nos. 1, 3 and 5 of this contract.

Section 17. Notices.

Any notices required or convenient to be given under this

contract shall be in writing, and unless in fact otherwise timely received, shall be considered effectively given only upon personal delivery or upon mailing by registered mail, return receipt requested, postage prepaid. Notices shall be addressed to the parties at the following indicated addresses, or at such other addresses as may be later indicated to the other party:

Olcese Water District
1415-18th Street, Room 302
Bakersfield, CA 93301

La Hacienda, Inc.
c/o Nickel Enterprises
Star Route 4, Box 801
Bakersfield, CA 93306

Section 18. Successors, Heirs and Assigns.

The provisions of this contract shall inure to the benefit of and shall be binding upon the heirs, successors and assigns of the parties hereto, and each party may assign its interests in this contract without the written consent of the other party.

IN WITNESS WHEREOF, the parties hereto have executed this contract as of the day and year first written above.

OLCESE WATER DISTRICT

By Melvin L. McColloch
Melvin L. McColloch, President

ATTEST:

By
Owen F. Goodman, Secretary

LA HACIENDA, INC.

By
George W. Nickel, Jr., President

By Frank K. Stamboolian Jr.
Frank K. Stamboolian, Jr., Secretar

GEORGE W. NICKEL, JR.

ADELE R. NICKEL

STATE OF CALIFORNIA)
)ss.
County of Kern)

On March 18, 1981, before me, the undersigned, a Notary Public in and for said State, personally appeared Melvin L. McColloch, known to me to be the President, and Owen F. Goodman, known to me to be the Secretary of the district that executed the within instrument, known to me to be the persons who executed the within instrument on behalf of the district therein named, and acknowledged to me that such district executed the within instrument pursuant to an order of its Board of Directors.

WITNESS my hand and official seal.

RITA JANE PETER
NOTARY PUBLIC - CALIFORNIA
BOND FILED IN
KERN COUNTY
MY COMMISSION EXPIRES APRIL 1, 1983

Rita Jane Peter
Notary Public

STATE OF CALIFORNIA)
)ss.
County of Kern)

On March 18, 1981, before me, the undersigned, a Notary Public in and for said State, personally appeared GEORGE W. NICKEL, JR., known to me to be the _____ President, and FRANK K. STAMBOOLIAN, JR., known to me to be _____ Secretary of the corporation that executed the within instrument, known to me to be the persons who executed the within instrument on behalf of the corporation therein named, and acknowledged to me that such corporation executed the within instrument pursuant to its by-laws or a resolution of its board of directors.

WITNESS my hand and official seal.

RITA JANE PETER
NOTARY PUBLIC - CALIFORNIA
BOND FILED IN
KERN COUNTY
MY COMMISSION EXPIRES APRIL 1, 1983

Rita Jane Peter
Notary Public

STATE OF CALIFORNIA)
)ss.
County of Kern)

On March, 18, 1981, before me, the undersigned, a Notary Public in and for said State, personally appeared George W. Nickel, Jr., and Adele R. Nickel, known to me to be the persons whose names are subscribed to the within instrument and acknowledged to me that they executed the same.

WITNESS my hand and official seal.

Rita Jane Peter
Notary Public

RITA JANE PETER
NOTARY PUBLIC - CALIFORNIA
BOND FILED IN
KERN COUNTY
MY COMMISSION EXPIRES APRIL 1, 1983

CERTIFICATE OF ACCEPTANCE
(27281)

This is to certify that the interest in real property conveyed by the foregoing Contract for Purchase and Sale of Kern River Water and Storage Rights dated _____, 1981, from La Hacienda, Inc., a California corporation, George W. Nickel, Jr., and Adele R. Nickel, husband and wife, hereinafter collectively referred to as "La Hacienda," to Olcese Water District was accepted by order of the Board of Directors of Olcese Water District made January 9, 1981, and Olcese Water District consents to the recording thereof.

_____
Owen F. Goodman, Secretary
Olcese Water District

RESOLUTION

WHEREAS, Nickel Family LLC has negotiated a "Contract to Transfer Lower River Water Rights on the Kern River" by and between Nickel, Olcese Water District, and Kern County Water Agency; and,

WHEREAS, the Contract provides substantial benefits to Nickel and, therefore, its execution is in the best interests of Nickel.

Now and therefore, the Class A and Class B Members of Nickel Family LLC do hereby approve the "Contract to Transfer Lower River Water Rights on the Kern River" and hereby authorizes and directs its President to enter into said contract.

Executed as of the 2nd day of December, 2000.

Nickel Family LLC

Class A Members

George W. Nickel, Jr.

Adele R Nickel

Adele R. Nickel

James L. Nickel

Class B Members

Sally N. Zanze

Sally N. Zanze

Kinzie S. Murphy

Susan N. DuVall

James L. Nickel

Cynthia B. Selfridge

Cynthia B. Selfridge

John S. Selfridge

John S. Selfridge

Nancy N. Resor

George Wilmarth Nickel, III

Kathleen D. Nickel, General Partner of the Miller Nickel Family Partnership

Sam Selfridge

Christine M. Warburton

Deborah Marskey

Eric DuVall

Miller DuVall

Trustee

Erin D. Nickel, Special Needs Trust

Heidi N. Michael

Kara N. Lucas

Cynthia B. Selfridge

John S. Selfridge

Nancy N. Resor

George Wilmarth Nickel, III

Kathleen D. Nickel, General Partner of the Miller Nickel Family Partnership

Sam Selfridge

Christine M. Warburton

Deborah Marskey

Eric DuVall

Miller DuVall

Erin D. Nickel, Special Needs Trust

Heidi N. Michael

Kara N. Lucas

Cynthia B. Selfridge

John S. Selfridge

Nancy N. Resor

George Wilmarth Nickel, III

Kathleen D. Nickel, General Partner of the Miller Nickel Family Partnership

Sam Selfridge

Christine M. Warburton

Deborah Marskey

Eric DuVall

Miller DuVall

Trustee

Erin D. Nickel, Special Needs Trust

Heidi N. Michael

Kara N. Lucas

Cynthia B. Selfridge

Cynthia B. Selfridge

John S. Selfridge

John S. Selfridge

Nancy N. Resor

George Wilmarth Nickel, III

Kathleen D. Nickel

Kathleen D. Nickel, General Partner of the Miller Nickel Family Partnership

Sam Selfridge

Christine M. Warburton

Deborah Marskey

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Cynthia B. Selfridge

John S. Selfridge

John S. Selfridge

Nancy N. Resor

George Wilmarth Nickel, III

Kathleen D. Nickel

Kathleen D. Nickel, General Partner of
the Miller Nickel Family Partnership

John S. Selfridge for Sam Selfridge

Sam Selfridge

Christine M. Warburton

Deborah Marskey

Eric DuVall

Miller DuVall

Trustee

Erin D. Nickel, Special Needs Trust

Heidi N. Michael

Kara N. Lucas

Cynthia B. Selfridge

Cynthia B. Selfridge

John S. Selfridge

John S. Selfridge

Nancy N. Resor

George Wilmarth Nickel, III

Kathleen D. Nickel, General Partner of the Miller Nickel Family Partnership

Sam Selfridge

Christine M. Warburton

Deborah Marskey

Eric DuVall

Miller DuVall

Trustee

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Cynthia B. Selfridge

Cynthia B. Selfridge

John S. Selfridge

John S. Selfridge

Nancy N. Resor

George Wilmarth Nickel, III

Kathleen D. Nickel, General Partner of the Miller Nickel Family Partnership

Sam Selfridge

Christine M. Warburton

Christine M. Warburton

Deborah Marskey

Eric DuVall

Miller DuVall

Trustee

Erin D. Nickel, Special Needs Trust

Heidi N. Michael

Kara N. Lucas

Cynthia B. Selfridge

Cynthia B. Selfridge

John S. Selfridge

John S. Selfridge

Nancy N. Resor

George Wilmarth Nickel, III

Kathleen D. Nickel, General Partner of the Miller Nickel Family Partnership

Sam Selfridge

Christine M. Warburton

D. Marskey

Deborah Marskey

Eric DuVall

Miller DuVall

Trustee

Erin D. Nickel, Special Needs Trust

Heidi N. Michael

Kara N. Lucas

Cynthia B. Selfridge

Cynthia B. Selfridge

John S. Selfridge

John S. Selfridge

Nancy N. Resor

George Wilmarth Nickel, III

Kathleen D. Nickel, General Partner of the Miller Nickel Family Partnership

Sam Selfridge

Christine M. Warburton

Deborah Marskey

Eric DuVall

Miller DuVall

Trustee

Erin D. Nickel, Special Needs Trust

Heidi N. Michael

Kara N. Lucas

Cynthia B. Selfridge

Cynthia B. Selfridge

John S. Selfridge

John S. Selfridge

Nancy N. Resor

George Wilmarth Nickel, III

Kathleen D. Nickel, General Partner of the Miller Nickel Family Partnership

Sam Selfridge

Christine M. Warburton

Deborah Marskey

Eric DuVall

Miller DuVall

Erin D. Nickel, Special Needs Trust

Heidi Michael

Heidi N. Michael

Kara N. Lucas

Cynthia B. Selfridge

Cynthia B. Selfridge

John S. Selfridge

John S. Selfridge

Nancy N. Resor

George Wilmarth Nickel, III

Kathleen D. Nickel, General Partner of the Miller Nickel Family Partnership

Sam Selfridge

Christine M. Warburton

Deborah Marskey

Eric DuVall

Miller DuVall

Trustee

Erin D. Nickel, Special Needs Trust

Heidi Michael

Heidi N. Michael

Kara N. Lucas

Kara N. Lucas

James C. Nickel

Brian Murphy

Sarah Murphy

Turner Resor

Miller Resor

LOST HILLS FARMING COMPANY

By:

James L. Nickel, General Manager

James C. Nickel

Brian Murphy

Sarah Murphy

Turner Resor

Miller Resor

LOST HILLS FARMING COMPANY

By:

James L. Nickel, General Manager

James C. Nickel

Brian Murphy

Sarah Murphy

Turner Resor

Miller Resor

LOST HILLS FARMING COMPANY

By:

James L. Nickel, General Manager

James C. Nickel

Brian Murphy

Sarah Murphy

Turner Resor

Miller Resor

LOST HILLS FARMING COMPANY

By:

James L. Nickel, General Manager

James C. Nickel

Brian Murphy

Sarah Murphy

Turner Resor By Nancy N. Resor (Mother)
Turner Resor

Miller Resor By Nancy N. Resor (Mother)
Miller Resor

LOST HILLS FARMING COMPANY

By:
James L. Nickel, General Manager

RESOLUTION

WHEREAS, Nickel Family LLC has negotiated a "Contract to Transfer Lower River Water Rights on the Kern River" by and between Nickel, Olcese Water District, and Kern County Water Agency; and,

WHEREAS, the Contract provides substantial benefits to Nickel and, therefore, its execution is in the best interests of Nickel.

Now and therefore, the Management Committee of Nickel Family LLC does hereby approve the "Contract to Transfer Lower River Water Rights on the Kern River" and hereby authorizes and directs its President to enter into said contact.

Executed as of the 2nd day of December, 2000.

Management Committee
Nickel Family LLC

By: _____
George W. Nickel, Jr.

By: Adele R Nickel
Adele R. Nickel

By: _____
James L. Nickel

RESOLUTION

WHEREAS, Bravo Management Company entered into a Management Agreement by and between Bravo Management Company (Bravo) and Nickel Family LLC (Nickel) dated December 14, 1996 in which Bravo was hired to manage the assets of Nickel; and,

WHEREAS, Nickel proposes to enter into a "Contract to Transfer Lower River Water Rights on the Kern River" with Kern County Water Agency and Olcese Water District; and,

WHEREAS, the Bravo Board of Directors has determined that entering into the proposed Contract is in the best interest of Nickel;

Now and therefore, the Board of Directors of Bravo Management Company hereby authorizes James L. Nickel, President of both Nickel Family LLC and Bravo Management Company, to enter into the proposed contract.

Executed this 2nd day of December, 2000.

BRAVO MANAGEMENT COMPANY

By: _____
George W. Nickel, Jr.

By: _____
Adele R. Nickel

By: _____
Sally N. Zanze

By: _____
Kinzie S. Murphy

By: _____
Susan N. DuVall

By: _____
Cynthia B. Selfridge

By: _____
Jock S. Selfridge

BEFORE THE BOARD OF DIRECTORS OF THE
OLCESE WATER DISTRICT

RESOLUTION NO. 395

IN THE MATTER OF:	)
	)
LOWER RIVER RIGHT SALE	)
	)
	)

WHEREAS, a contract has been negotiated between Nickel Family LLC, a California limited liability company, the Olcese Water District, and the Kern County Water Agency regarding transfer of the Lower River water rights on the Kern River from the Nickel Family LLC and Olcese Water District to the Kern County Water Agency; and

WHEREAS, this District will receive valuable consideration for the transfer of its interest in the Lower River water right to the Kern County Water Agency; and

WHEREAS, the Board of Directors of this District has reviewed the Agreement and has determined that said Agreement, and the transfer contemplated therein, is in the best interests of the District and its landowners;

NOW, THEREFORE, BE IT RESOLVED AND ORDERED:

1. All the foregoing is true and correct.

2. The transfer of the Lower River water rights to the Kern County Water Agency as provided in the Agreement previously presented to this Board of Directors be, and it hereby is, approved.

3. The President and Secretary of the District be, and they hereby are, authorized and directed to execute, on behalf of the District, the final form of said Agreement when it is available for signature in substantially the form heretofore presented to the Board of Directors.

4. The Secretary of the District be, and hereby is, authorized and directed to distribute this Resolution as necessary or proper to confirm the action taken this date.

All the foregoing being on the motion of Director McNeill, seconded by Director Gregory, and authorized by the following vote, namely:

AYES: McNeill, Gregory, Davis.

NOES: None.

ABSENT: None.

ABSTAIN: Teagarden, Nickel.

I HEREBY CERTIFY that the foregoing Resolution is the Resolution of the Olcese Water District as duly passed and adopted by said Board of Directors at a legally convened meeting held on the 27th day of November, 2000.

WITNESS my hand this 23 day of January, 2001.

President of the Board of Directors
OLCESE WATER DISTRICT

ATTESTED TO:

Secretary of the Board of Directors
OLCESE WATER DIST.

BEFORE THE BOARD OF DIRECTORS

OF THE

KERN COUNTY WATER AGENCY

In the matter of:

APPROVAL OF PROPOSED AGREEMENT FOR AGENCY ACQUISITION OF LOWER KERN RIVER WATER RIGHTS AND OTHER ASSOCIATED RIGHTS FROM THE NICKEL FAMILY LLP AND OLCESE WATER DISTRICT AND AUTHORIZATION OF THE EXECUTION OF SAME BY THE GENERAL MANAGER

I, PAM BOSWORTH, Secretary of the Board of Directors of the Kern County Water Agency, of the County of Kern, State of California, do hereby certify that the following resolution proposed by Director Radon and seconded by Director Garnett, was duly passed and adopted by said Board of Directors at an official meeting hereof this 15th day of December, 2000 by the following vote to-wit:

Ayes: Garnett, Frick, Radon, Lundquist, Rogers, Mathews & Starrh

Noes: None

Absent: None

Secretary of the Board of Directors
of the Kern County Water Agency

Resolution No. 88-00

WHEREAS, the Kern County Water Agency ("Agency") has previously entered into a long term water supply contract with the State of California for more than 1,000,000 AF of water per year on a firm annual basis, but due to regulatory restrictions the State of California is currently unable, and for the mid-term future will apparently be unable, to meet the obligations of that contract;

WHEREAS, the Agency currently has an opportunity to acquire and manage certain water rights and associated rights on the Lower Kern River currently held by the Nickel Family LLP and Olcese Water District due to funding provided by the State of California as directed by Governor Davis to help alleviate the shortages to the Agency which are anticipated;

WHEREAS, the General Manager has entered into negotiations with the Nickel Family LLP and Olcese Water District to reach agreement on a transaction which would provide for voluntary acquisition of such rights by the Agency;

WHEREAS, the General Manager has reached tentative agreement with the Nickel Family LLP and Olcese Water District on an agreement for such transaction which is attached hereto as Exhibit A and incorporated herein by reference;

WHEREAS, the Agency by virtue of its powers granted by the legislature in the Kern County Water Agency Act is empowered to acquire such rights by agreement; and

WHEREAS, the transaction is part of the Kern River Program previously approved by the Agency Board of Directors, including the analysis of environmental impacts associated therewith and the documentation of the Agency's review and decision regarding the analysis of environmental impacts.

NOW THEREFORE BE IT RESOLVED by the Board of Directors of the Kern County Water Agency that:

1. The foregoing recitals are found to be true and correct, and incorporated herein.
2. The agreement attached hereto as Exhibit A for transfer of the lower river rights of the Kern River, as defined therein is approved.
3. The General Manager is authorized to execute the agreement with the substantive provisions contained therein, subject to approval of the General Manager and General Counsel as to form.

Draft Redline Version dated
12/13/00

CONTRACT TO TRANSFER

LOWER RIVER WATER RIGHTS ON THE KERN RIVER

This Contract is made as of the 21st day of December 2000, by and between Nickel Family, LLC ("Nickel"), a California limited liability company; the Olcese Water District ("Olcese") and the Kern County Water Agency ("Agency"), both of which are public agencies in the State of California, duly organized, existing and acting pursuant to the laws thereof.

RECITALS

WHEREAS, the Governor's Budget Act for 2000, Chapter 52, Statutes of 2000, appropriated to the Department of Water Resources local assistance grant funds in the amount of $161,544,000 by budget item 3860-01-6027, payable from the interim Reliable Water Supply and Water Quality Infrastructure and Management Subaccount, and the Kern County Water Agency's Kern River Restoration Project has been selected for funding in the amount of $23,000,000 from that subaccount; and

WHEREAS, the Agency intends to use money from that appropriation for development of local water supplies and banking programs within Kern County; and

BEFORE THE BOARD OF DIRECTORS

OF THE

KERN COUNTY WATER AGENCY

Post-it® Fax Note 7671	Date 8-16-02	# of pages ▶ 3
To Rita	From Holly Melton	
Co./Dept.	Co. KCWA	
Phone #	Phone # 634-1467	
Fax #	Fax # 634-1428	

In the matter of:

CONSIDERATION OF PROPOSED AGREEMENT FOR AGENCY ACQUISITION OF LOWER KERN RIVER WATER RIGHTS AND OTHER ASSOCIATED RIGHTS FROM THE NICKEL FAMILY LLP AND OLCESE WATER DISTRICT AND FINDING THAT THE WATER PROPOSED FOR UTILIZATION THEREIN IS SURPLUS TO AGENCY NEEDS PURSUANT TO AGENCY ACT SECTIONS 5 AND WATER CODE SECTION 382

I, PAM BOSWORTH, Secretary of the Board of Directors of the Kern County Water Agency, of the County of Kern, State of California, do hereby certify that the following resolution proposed by Director Radon and seconded by Director Garnett, was duly passed and adopted by said Board of Directors at an official meeting hereof this 15th day of December, 2000 by the following vote to-wit:

Ayes: Garnett, Frick, Radon, Lundquist, Rogers, Mathews & Starrh

Noes: None

Absent: None

Pam Bosworth

Secretary of the Board of Directors
of the Kern County Water Agency

Resolution No. 90-00

WHEREAS, the Kern County Water Agency ("Agency") has previously entered into a long term water supply contract with the State of California for more than 1,000,000 AF of water per year on a firm annual

basis, but due to regulatory restrictions the State of California is currently unable, and for the mid-term future will apparently be unable, to meet the obligations of that contract;

WHEREAS, the Agency currently has an opportunity to acquire and manage certain water rights and associated rights on the Lower Kern River currently held by the Nickel Family LLP and Olcese Water District with an average historical yield of 50,000 AF/year of which approximately 40,000 AF/year is subject to capture in the opinion of the Agency General Manager and engineering staff;

WHEREAS, the General Manager has developed a proposed agreement which would provide for voluntary acquisition of such rights by the Agency to be approved by other resolution;

WHEREAS, the Agency by virtue of its powers granted by the legislature in the Kern County Water Agency Act is empowered to acquire such rights by agreement;

WHEREAS, the transaction is part of the Kern River Program previously approved by the Agency Board of Directors, including the analysis of environmental impacts associated therewith and the documentation of the Agency's review and decision regarding the analysis of environmental impacts; and

WHEREAS, this Board has considered the acquisition of such rights which contemplates the utilization of 10,000 AF/year of existing Agency supplies to exchange as part consideration for the transaction which will acquire 50,000 AF/year of water on average of which 40,000 AF/year average is capturable in the expert opinion of the Agency General Manager, who is thoroughly familiar with the rights, and the Agency engineering staff, who are experts in utilization of groundwater recharge and are thoroughly familiar with Agency existing facilities and planning for additional facilities; and

WHEREAS, no opponents to the plan have offered equivalent consideration for the exchange of such water, and there is no substantial evidence to show that the net effect of the transaction will be to enhance Agency supplies by an average of 30,000 AF/year to 40,000 AF/year over the long term.

NOW THEREFORE BE IT RESOLVED by the Board of Directors of the Kern County Water Agency that:

1. The foregoing recitals are found to be true and correct, are incorporated herein, are supported by substantial evidence, and are sufficient basis for the additional findings herein.

2. The agreement approved by Resolution No.88-00 provides for the transfer by the Agency to Nickel Family LLP of 10,000 AF/year of Agency water to obtain water rights which historically have yielded far in excess of that amount.

3. The Agency is capable and will be capable of capturing sufficient amount of such water to provide a substantial net benefit to the Agency in terms of water supply, both quality and quantity.

4. No other entities have offered equivalent consideration for such water.

5. Under the terms of the proposed agreement which provide a significant net benefit to the water supply of the Agency, the water to be offered in exchange is surplus to Agency needs, and to be provided by voluntary conservation efforts, pursuant to the meaning of Agency Act Section 5 and Water Code Section 382.

STANLEY W. KRONICK
EDWARD J. TIEDEMANN
FREDERICK G. GIRARD
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February 22, 2001

Mr. Thomas N. Clark
General Manager
Kern County Water Agency
P.O. Box 58
Bakersfield, California 93302

Re: Purchase of the Kern River Lower River Water Rights

Dear Mr. Clark:

We serve as attorneys to Nickel Family, LLC ("Nickel"). On January 23, 2001, Nickel, the Kern County Water Agency ("Agency") and Olcese Water District ("Olcese") entered into a contract entitled "Contract to Transfer the Kern River Lower River Water Rights", hereinafter referred to as "the Contract". Article 8.1(d) of the Contract, which is one of the conditions precedent to the close of the escrow provided for in the Contract states:

> (d) Opinion Letter of Counsel: Nickel shall deposit into escrow an opinion letter of counsel, satisfactory to the Agency, providing that the conveyances, transfers and assignments provided in this Contract are sufficient to transfer all right, title and interest of Nickel and Olcese to the rights described herein, except those specifically retained by or quitclaimed to Nickel and/or Olcese.

This letter, which is that opinion, traces the ownership of the rights transferred to the Agency by Nickel and Olcese from the Miller-Haggin Agreement of July 28, 1888 to Nickel and Olcese.

The Miller-Haggin Agreement

The Miller-Haggin Agreement of July 28, 1888, was executed by numerous parties, but the principal party representing the Kern River downstream interests was Henry

Miller and the principal party representing the Kern River upstream interests was James B. Haggin. The agreement was entered into after the California Supreme Court issued its decision in *Lux v. Haggin* (1886) 69 Cal.255, holding, among other things, that the riparian rights of downstream owners on the Kern River were not extinguished by the use of upstream appropriators. The parties to the agreement claimed riparian, appropriative and other rights to the waters of the Kern River, Buena Vista Slough, Kern Lake, Buena Vista Lake, and the slough connecting those lakes, and the purpose of the agreement was to compromise and settle all claims among the parties. The Miller-Haggin Agreement, including the November 30, 1889 Supplemental Agreement, is item 1 in Exhibit A accompanying this letter. ("Exhibit A")

The Miller-Haggin Agreement established two points of measurement on the Kern River which were designated and have been known since then as "First Point of Measurement" and "Second Point of Measurement." The water was divided between the parties in two ways. During the months of March through August of each year, the first 300 cubic feet per second (cfs) of water flowing at First Point were given to the Kern Island Irrigating Canal Company and any flows over 300 cfs during that period were divided one-third to the so-called "first parties," which were Henry Miller and the other downstream owners, and the remaining two-thirds was given to the so-called "second parties," which were James B. Haggin and the other upstream users. The agreement further provided that the first parties were entitled to receive their one-third at the Second Point "without diminution by reason of percolation or seepage or any interference whatsoever of or by parties of the second part."

With regard to the flows during the months of September, October, November, December, January and February, the Miller-Haggin Agreement specified that all water flowing in the Kern River above the Second Point of measurement belonged to the second parties who could divert it and use it as they desire. Any water which the second parties did not divert before it reached the Second Point, became the property of the first parties, to be used when and where they desired.

The Miller-Haggin Agreement states that the water given to the various parties may be used and disposed of by them in any manner, at any place, and for any purpose they may think proper, or that they may arrange or agree upon among themselves. The agreement also specifies that if anyone not a party to the contract shall at any time divert water from the Kern River between the first and second points, the loss occasioned to the parties to the contract will be borne one-third by the parties of the first part (Miller, et al.) and two-thirds by the parties of the second part (Haggin, et al.). It also states that if anyone not a party diverts water between those two points, the parties will unite in such suits or proceedings as may be necessary to prevent such diversions and that the costs of such litigation will be borne one-half to the parties of the first part and one-half to the parties of the second part.

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The Miller-Haggin Agreement states it is perpetual and is to be construed as a covenant running with all of the land owned and claimed by all of the parties situated in the various townships described in the agreement. The townships described in the agreement include virtually all of those in the San Joaquin Valley portion of Kern County between the State Aqueduct on the west, the Southern Pacific Railroad on the east, and the north boundary of the Wheeler Ridge-Maricopa Water Storage District on the south. The Miller-Haggin Agreement was recorded in Volume 2 of Contracts and Agreements at page 40 in the Kern County Recorder's Office.

The Miller-Haggin Agreement has been amended and supplemented from time to time, including the September 14, 1955, agreement between the North Kern Water Storage District ("North Kern WSD") and various canal companies, all of which are collectively referred to in that agreement as the "First Point Group," and Buena Vista Water Storage District ("Buena Vista WSD") and such other parties as wish to join in the agreement, which are collectively referred to as the "Second Point Group". In this agreement the First Point Group stated that it owns substantially all the waters apportioned to the second parties to the Miller-Haggin Agreement (Haggin, et al.) and Buena Vista WSD stated that it owned or controlled the major portion of the waters apportioned to the first parties in the Miller-Haggin Agreement (Miller, et al.). This 1955 agreement changed the allocations under the Miller-Haggin Agreement to provide the first parties (the Second Point Group) with a somewhat greater share of the water during the March through August period when the flows at First Point exceed 2,000 cfs, and to give the first parties one-third of the flows over 1,500 cfs during the months of September through February. The agreement states that waters apportioned to any party may be stored in Isabella Reservoir or elsewhere in any surface or underground reservoir and may be taken out, used and disposed of by such party in any manner, at any place and for any useful purpose as the parties may determine from time to time. The September 14, 1955 agreement is item 2 in Exhibit A.

The Miller-Haggin Agreement pertained to land only in Kern County and did not allocate water to the Hacienda Ranch, which is located in Kings County. It was, however, the forerunner of subsequent Kern River water agreements which do involve water rights which are the subject of the Contract.

Kern River Water Rights and
Storage Agreement of December 31, 1962

On December 31, 1962, Buena Vista WSD, North Kern WSD, Tulare Lake Basin Water Storage District ("Tulare Lake BWSD"), and Hacienda Water District ("Hacienda WD") entered into a contract entitled "Kern River Water Rights and Storage Agreement" ("the 1962 Agreement"). Buena Vista WSD stated that it executed the 1962 Agreement for and on behalf of

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itself, Buena Vista Associates, Incorporated, and all the parties of the first part (Miller, et al.), or their successors in interest, to the Miller-Haggin Agreement, who may wish to share in the benefits and obligations of the 1962 Agreement. North Kern WSD stated that it executed the 1962 Agreement for and on behalf of all the parties of the second part (Haggin, et al.), or their successors in interest, to the Miller-Haggin Agreement whose rights on the Kern River were adjudicated among themselves in the so-called "Shaw Decree"[1] who wish to share in the benefits and obligations of the 1962 agreement. Tulare Lake BWSD and Hacienda WD executed the 1962 Agreement on behalf of themselves and all others who establish rights to the waters of the Kern River for use on lands north of Wasco Road who wish to share in the benefits and obligations of the 1962 Agreement. Throughout the 1962 Agreement, Tulare Lake BWSD and Hacienda WD are collectively referred to as the "Downstream Group" and Buena Vista WSD and North Kern WSD are collectively referred to as the "Upstream Group". The 1962 Agreement is item 3 in Exhibit A.

The 1962 Agreement apportions the waters of the Kern River between the Upstream and Downstream Groups. The division between the two groups is set forth in Paragraph 1 of the 1962 Agreement. The 1962 Agreement also apportions the conservation storage space in Isabella Reservoir, with 32% allocated to Buena Vista WSD and the other 68% to North Kern WSD. The Downstream Group was given an option to purchase 20/68th of North Kern's space, which was equal to 20% of the entire space. This is referred to as the "Downstream Space." In addition to this option, which was never exercised, the Downstream Group was given a "perpetual right to rent the Downstream Space in whole or in part from North Kern for the storage of Kern River water allocated to Downstream Group in this contract." This is the method employed by Nickel and Olcese and their predecessors to store Kern River Water in Isabella Reservoir.

Other provisions of the 1962 Agreement which relate to the Downstream Group Rights are contained in Paragraphs 4, 12, and 14. Paragraph 4 states:

4. Covenant Against Claims.

> Each party hereby accepts the water apportionment provisions hereof as a final and permanent settlement of all of its rights and claims in and to the waters of Kern River, and each party hereby covenants and agrees with the others that it will never make or assert against any other party or parties hereto any claim to any of

[1] This is a 1900 Kern County Superior Court decree in which the rights of the second parties (Haggin, et al.) to the Miller-Haggin Agreement were adjudicated among themselves by Judge Lucien Shaw in Farmers Canal Company, et al. v. J.R. Simmons, et al., Action No. 1901.

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> the waters of Kern River except the waters herein expressly apportioned to it. Each party agrees that all waters of the Kern River to which it may become entitled under any application now pending or hereafter filed before the State Water Rights Board, or under any permit or license issued pursuant to any such application, shall serve and be used only to feed and support the respective rights and allocations of the parties hereto in accordance with the provisions of this contract.

Paragraph 12 of the 1962 Agreement required the Kern River Delta Farms (predecessors to Nickel), the then owner of the Hacienda Ranch (which owned substantially all the land in Hacienda WD), to dismiss with prejudice two actions it had brought pertaining to Kern River water. The first was an action in the Kings County superior court and the other was in the United States Court of Claims.

Paragraph 14 provides that the Downstream Group shall have a priority position on any contracts to exchange Kern River water. It states that the Downstream Group may at any time sell Kern River water to which it is entitled under the 1962 Agreement or exchange it for water owned or obtained by other parties from other sources. It then states that North Kern WSD and Buena Vista WSD may independently or together exchange Kern River water to which they are entitled for waters owned or obtained by others from other sources, subject to the right of the Downstream Group to substitute, upon the same terms and conditions, up to the quantity of Kern River entitlement that the Downstream Group then has available, its Kern River water for all or a portion of the North Kern WSD or Buena Vista WSD water that other parties agree to accept. It also provides that the water to be returned by other parties for Kern River water shall first be offered to the Downstream Group to the extent that such group is willing to accept such water and to the extent that the Downstream Group has a credit balance of Kern River water. The Downstream Group is given the right to specify the points of delivery of such exchange water. North Kern WSD and Buena Vista WSD are also required, in any exchanges with third parties, to inform them of these provisions and require the third parties to agree to them.

Downstream Group Agreements

On January 1, 1963, one day after execution of the 1962 Agreement, the Downstream Group (consisting of Hacienda WD and Tulare Lake BWSD) entered into an agreement dividing among themselves their Downstream Group allocation (the "Downstream Group Agreement"). The two districts agreed to a 50/50 split of both the Kern River water and the Isabella Reservoir storage rights apportioned to the Downstream Group. The Downstream Group Agreement also provides that Hacienda WD shall have the right to use Tulare Lake BWSD's share of Kern River water and storage in Isabella Reservoir in return for Hacienda WD

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either paying Tulare Lake BWSD cash for such water or by making State Water Project water available to Tulare Lake BWSD in exchange for such Kern River water. The Downstream Group Agreement did not prohibit or restrict transfers of the right of use by Hacienda WD or require the consent of Tulare Lake BWSD to any such transfer.

This 1963 agreement between Hacienda WD and Tulare Lake BWSD was amended and supplemented on August 8, 1974 to revise the payment an exchange provisions. The agreement as it now stands provides for the establishment of an Exchange Water Account. With regard to Tulare's water in that account, it states:

> The amount of Tulare's water that shall be credited to Tulare in such Exchange Water Account in any one year shall be the amount of water which is divided and apportioned to Tulare under the following formula:

Aggregate Kern River Flow in Thousands of acre-feet	Credit to Tulare
January – March	
First 250	None
All over 250	10%
April – July	
First 550	None
Next 50 (from 550 to 600)	10%*
Next 50 (from 600 to 650)	10%
Next 400 (from 650 to 1050)	13-1/3%
All over 1050	18-1/3%
August – December	

* Only in certain years, namely, each year immediately following a year in which the April - July flow equals or exceeds 600,000 acre-feet.

The maximum credit to the bank account of Tulare in any one calendar year will be 75,000 acre-feet. Any water that the foregoing formula yields to Tulare in any calendar [year] in excess

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> of 75,000 acre-feet may be used by Hacienda free of any charge therefor by Tulare and without obligation to return to Tulare under the exchange formula

In return for this water, Hacienda WD can either deliver State Project Water or make dollar payments. The amount of water to be delivered to Tulare Lake BWSD in each year is either 10,000 acre feet or the quantity in Tulare's Exchange Water Account, whichever is less. if Hacienda WD elects to pay cash in lieu of water deliveries, the payments were set at $5.00 per acre foot, with the amount to be adjusted as necessary on January 1, 1980 and each 5 years thereafter based upon changes in the Consumer Price Index.

Thus, in any year when Tulare's Exchange Water Account has a balance of 10,000 acre feet or more, Hacienda WD must deliver 10,000 acre feet of State Project water or pay an amount in excess of $50,000 (10,000 AF times $5.00 times the change in the Consumer Price Index).

The Downstream Group Agreement and the 1974 amendment are items 4 and 5 in Exhibit A.

The Minimum Pool Agreement

On November 8, 1963, the four parties to the 1962 Agreement entered into an agreement with the County of Kern to provide for a minimum pool of 30,000 acre-feet in Isabella Reservoir for recreational purposes (the "Minimum Pool Agreement"). The Minimum Pool Agreement provides that when the volume in the reservoir is 30,000 acre-feet or less, the parties would not release or withdraw any of their water from Isabella Reservoir for irrigation purposes at any time. The parties also agreed to allocate all seepage and evaporation losses and flood control releases attributable to the 30,000 acre-foot recreational pool as follows: 25% to Buena Vista WSD and 75% to North Kern WSD. The Minimum Pool Agreement is item 6 in Exhibit A.

Federal Contract for Isabella Storage

On October 23, 1964, the four parties to the 1962 Agreement entered into a contract with the United States of America pertaining to storage of Kern River water at Isabella Dam and Reservoir. The four parties stated that they executed the contract for the same respective parties for whom they executed the 1962 Agreement and the 1962 Agreement is attached to and incorporated into this contract with the United States.

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The U.S. contract apportions all of the irrigation storage capacity in Isabella Reservoir, which is set at 535,000 acre feet, in the same manner as the 1962 Agreement, -- *i.e.*, -- 32% to Buena Vista WSD and 68% to North Kern WSD. It also apportions the reimbursable costs and operation and maintenance charges for this storage capacity in the same manner.

In the contract, the United States expressly recognizes the Kern River water rights of the four districts under the Miller-Haggin Agreement, the Shaw Decree, the 1962 Agreement and the Minimum Pool Agreement, and the contract contemplates the use of 100% of the irrigation storage space of Isabella Reservoir by the four districts. However, if parties other than the four districts, and those on whose behalf they executed the contract, establish rights to Kern River water, such other parties will have the right to contract with the United States for the use of a proportionate part of such storage space under the same terms and conditions as the four districts. In such event, there would be a reapportionment of the costs to reflect these new storage rights. The federal contract for Isabella Storage is item 7 in Exhibit A.

Hacienda Ranch Sale Agreements

On October 6, 1978, George W. Nickel and Adele R. Nickel conveyed the Hacienda Ranch to La Hacienda, Inc., together with all water rights appurtenant to the property. This conveyance is item 8 in Exhibit A. On October 16, 1978, La Hacienda, Inc. and George and Adele Nickel sold the Hacienda Ranch to a joint venture group known as "Tulare Lake Representatives" ("TLR"). The sale was consummated by several agreements in which La Hacienda, Inc. and the Nickels are collectively referred to as "Nickel." One of the agreements was designated "Kern River Water and Storage Reservation Agreement." (the "Reservation Agreement.") The Reservation Agreement recited that the Hacienda WD owned and administered or represented certain Kern River water rights and Isabella Reservoir storage entitlements and stated that such water and storage rights were dealt with in various contracts, including some of those referred to in this letter. The agreements with TLR provide that all of the Kern River water rights and Isabella Reservoir storage entitlement owned, administered or represented by Hacienda WD, were reserved to, transferred, or conveyed to "Nickel", subject to the obligations owed to Tulare Lake BWSD or other Tulare Lake Basin interests. The rights reserved or transferred to "Nickel" were also limited to those attributable to the Hacienda Ranch property sold to TLR and such other Kern River water and storage rights then held by Hacienda WD. The Reservation Agreement is item 9 in Exhibit A.

The Reservation Agreement, in Recital 9, recognized that fulfillment of the parties' intentions was subject to various legal and practical contingencies. To better protect the Kern River water reserved to "Nickel" from third-party challenges, the Reservation Agreement further provided that TLR would appoint "Nickel" as its agent in fact for the limited purpose of contracting for, selling, exchanging, transferring, conveying, or otherwise dealing in those water

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rights and that TLR would also, subject to certain fiduciary obligations, cause the Hacienda WD to appoint "Nickel" as agent in fact for these same limited purposes.

Hacienda WD, on or about February 6, 1979, appointed La Hacienda, Inc., as its attorney-in-fact for the limited purpose of contracting for, selling, exchanging, transferring, conveying or otherwise dealing with the Kern River water and storage rights reserved to "Nickel" under the Reservation Agreement. On February 8, 1979, TLR appointed La Hacienda, Inc., as its attorney-in-fact for the limited purpose of contracting for, selling, exchanging, transferring, conveying or otherwise dealing with the Kern River rights reserved to "Nickel" under the Reservation Agreement. At that point in time, La Hacienda, Inc., held the right to contract to sell, exchange, transfer, or convey, or to otherwise deal with, the Downstream Group's water rights under the 1962 Agreement.

Transfers to Olcese

In 1980, Hacienda WD and Tulare Lake BWSD, by formal agreement, consented to La Hacienda, Inc., selling, transferring, assigning and setting over to Olcese all of La Hacienda, Inc.'s rights, title and interest in and to the Kern River water and storage rights allocated to the "Downstream Group" in the 1962 Agreement which were reserved, transferred, or to be transferred to "Nickel" pursuant to the Reservation Agreement. This agreement also provided that, to the extent Hacienda WD and Tulare Lake BWSD held or administered any right, title or interest in such rights, those districts transferred, assigned and set such rights over to Olcese. In addition, Hacienda WD and Tulare Lake BWSD consented to the substitution of Olcese in place of La Hacienda, Inc., as their attorney-in-fact under the special powers of attorney referenced above. Copies of these consents are item 10 in Exhibit A.

By agreement dated March 18, 1981, (the "1981 Agreement"), La Hacienda, Inc. and the Nickels, et al., sold, transferred, assigned and set over to Olcese all of their right, title and interest in all of the Kern River water rights and storage entitlement in Isabella Reservoir referred to in that agreement.. They also substituted Olcese in place of La Hacienda, Inc., as the attorney-in-fact under the special power of attorney granted to La Hacienda, Inc., by Hacienda WD regarding the subject Kern River water and storage rights. In this 1981 Agreement, La Hacienda, Inc. and the Nickels reserved to themselves in their own capacities, and not as agents, the use of all the Kern River water and storage rights transferred to Olcese that is in excess of the needs of Olcese. They retained the right both (a) to use any water that Olcese could not use or spread in any year and (b) to purchase all water that Olcese spread in the City of Bakersfield's Kern River spreading area which is in excess of Olcese's needs as determined by the 1981 Agreement. This excess spread water was referred to as "option water" and was defined as the amount of water in storage in the City of Bakersfield's spreading area in excess of the sum of 5,000 acre-feet and Olcese's requirements for such water for the next 13 years. The agreement

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also provided for payment provisions for the purchase of the "option water." Olcese is obligated, pursuant to this agreement, to cooperate with La Hacienda, Inc. and the Nickels, to enable them to make use of their retained water. The 1981 Agreement is item 11 in Exhibit A.

By agreement entered into on November 9, 1977, Olcese obtained from the City of Bakersfield the right to spread water on the City's 2800-acre spreading area, subject to the City's first priority right (the "City Agreement"). The City Agreement also provides for the sharing of costs between the City and Olcese associated with spreading water and the costs that Olcese must pay the City for water it pumps from the spreading area. On April 15, 1981, the City Agreement was amended to allow Olcese to sell water for non-irrigation use outside Olcese according to terms mutually agreeable to Olcese and the City. This amendment also modified the City's priority right for spreading and recovery of water in return for Olcese's commitment to construct some additional wells and water conveyance facilities. The April 15, 1981 amendment, however, did not modify the provisions of the March 18, 1981 Agreement pursuant to which Olcese is prohibited from selling or otherwise using Downstream Group water outside the boundaries of Olcese and certain property known as the "Rio Bravo Annexation" without the consent of the Hacienda Parties. The City Agreement and the 1981 amendment, along with Buena Vista WSD's April 15, 1981 letter attached, are items 12 and 13 of Exhibit A.

La Hacienda, Inc. – KCWA Agreement

On May 6, 1987, La Hacienda, Inc., entered into an agreement with the Agency entitled "Agreement on Use, Storage & Extraction of Hacienda Kern River Water" ("KCWA Agreement"). The KCWA Agreement provided that the parties would share on an equal basis all "Hacienda Water" diverted into a spreading area to be developed by the Agency for percolation and storage within the Kern River Basin. The KCWA Agreement was contingent upon the Agency acquiring and developing a spreading area consisting of 3,000 acres, or more, for such purpose. The Agency did not acquire and make available the spreading acreage required by the KCWA Agreement, and on September 13, 1994, La hacienda, Inc. sent a letter to the Agency terminating the KCWA Agreement.

Transfers to Garces and the Trust

In an agreement dated March 29, 1988 (the "Transfer Agreement"), George W. Nickel, Adele R. Nickel, Nickel Enterprises, Rio Bravo Resorts, Inc., La Hacienda, Inc., Kern River Development Company and Lekcin Management Company, Inc. collectively referred to as "Transferrors" transferred (a) to Garces Water Company, Inc. ("Garces") an undivided fifteen percent (15%) of the Transferrors' interest in certain Kern River water and storage rights referred to in that agreement as "Water Assets," which included the "Lower River Water Rights" described in the Contract, and (b) to the McNear-Driver Trust (the "Trust") the other undivided

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eighty-five percent (85%) in those assets. At the time of those transfers, Garces and the Trust appointed George W. Nickel and Adele Nickel and La Hacienda, Inc. as its attorney-in-fact to obtain, store, transfer, exchange, market, or sell various water and water rights, including the water which is the subject of the Transfer Agreement. The transfers to the Trust and Garces were subject to a security interest held by Wells Fargo Bank. Olcese concurred in these transfers to Garces and the Trust, including the right of Garces and the Trust to exercise the special powers of attorney granted to La Hacienda, Inc., and the Nickels. This power of attorney and the Wells Fargo security interests referred to in this paragraph were terminated in 1994. The Transfer Agreement is item 14 in Exhibit A.

Other Transfers

In 1990, La Hacienda, Inc., as the attorney-in-fact for Garces and the Trust, sold 98,005 acre-feet of Downstream Group water to the Agency for the benefit of the State of California. The Department of Water Resources (DWR) performed a detailed legal analysis of La Hacienda, Inc.'s rights and was apparently satisfied that La Hacienda, Inc., had legal ability to pass title to the water in issue. This sale and resulting transfer of the water to the DWR occurred without any legal challenge. Also, we have been informed that the DWR has pumped and used a portion of this water without challenge.

On or about November 30, 1992, Judgment was entered in Kern County Superior Court No. 181265 settling litigation commenced by Kern Property Corporation against La Hacienda, Inc., and others. As part of the settlement, La Hacienda, Inc., is contractually obligated to provide up to 3,300 acre-feet of banked groundwater per year to supplement a base supply of 3,300 acre-feet per year of drain water made available by Buena Vista WSD to Kern Property Corporation for use on its lands located north of Wasco Road.

Transfer from Trust to Nickel Family LLC

On April 4, 1997, the Trust transferred its undivided eighty-five percent interest in the "Water Assets" to the Nickel Family LLC. This 1997 transfer agreement without exhibits is item 15 in Exhibit A. Exhibit A to that agreement dealt with so-called "Hydro Assets", not a part of this Contract. Exhibit B was the "Water Assets" which are described in the March 29, 1988 "Transfer Agreement" referred to above (item 14).

On September 1, 2000, the Agency purchased Garces' fifteen percent interest in the "Water Assets". On the close of escrow provided for in the Contract, the Agency will own all of the Lower River Water Rights provided for in the Contract.

Warranties by Nickel and Olcese

In Article 7.1 of the Contract, Nickel and Olcese have given the Agency various warranties. Among those warranties they have warranted that they have the "full power, authority and legal right to execute, deliver and perform the Contract" and that they now possess "the unrestricted right and power to own, use and sell their respective interests in the Lower River Water Rights as set forth in Exhibit A" of the Contract.

Conclusions

Based on our review of the documents discussed in this letter and other information which has been provided to us:

1. It is our opinion that Nickel and Olcese hold such rights and have such obligations with respect to the Lower River Water Rights as are created by the reviewed documents and can transfer those portions of those rights to the Agency as provided for in the Contract. We are not aware of any other documents of any kind or nature or any other facts that would render the description of those rights and obligations set forth in this letter false or misleading, but do not, by this letter, offer an opinion with respect to the nature or extent of those rights and obligations.

These rights are subject to the following obligations, as well as the laws of California governing water rights and the laws of the United States governing the use of Federal facilities:

a. The California constitutional limitation that the water must be put to reasonable beneficial use.

b. The limitation imposed by the Minimum Pool Agreement that you not release or withdraw any of your stored water when the volume in the reservoir is 30,000 acre-feet or less.

c. The obligation to pay Tulare Lake BWSD for any credits it has in its Exchange Water Account, or deliver water to Tulare Lake BWSD pursuant to the Downstream agreement.

d. The obligation to provide water to the Kern Property Corporation pursuant to the November 30, 1992 judgment.

e. The obligation to pay fees for storage in Isabella Reservoir.

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f. The possible obligation to share storage capacity in Isabella Reservoir pursuant to the 1964 federal contract.

g. Any obligations that may be owing to the City of Bakersfield as a result of the City Agreement and amendments thereto referred to above and in items 12 and 13 of Exhibit A.

h. Any other obligations that Nickel and Garces may have had regarding the use of Lower River Water Rights and Isabella storage at the time of the transfer of those rights to the Agency not heretofore disclosed to us.

2. We are not aware of any current or threatened litigation challenging the Nickel's or Olcese's rights to the Lower River Water Rights which are the subject of the Contract. However, litigation exists in the United States District Court which may affect the amount of water you can store in Isabella Reservoir: *Southwest Center for Biological Diversity v. Colonel Dorothy Klasse*, Case CIV S-97-1969 GEB JFM.

3. Assuming the parties to the various agreements described above are bound thereby, there are only two types of persons or entities who theoretically might be able to challenge these water rights. The first type is appropriators and the second is riparians.

a. We are not aware of any existing appropriators not a party to the existing agreements for the Kern River. We are aware of some small diversions from Lake Isabella, but believe these are illegal diversions rather than being pursuant to established rights. The only permits and licenses that have been issued by the State on the Kern River are those given for non-consumptive power generation use. Any other appropriators would have had to have begun their appropriations prior to 1914 and their use would have had to have been continuous since then or their right would be subject to loss for non-use. We have not carried out any independent investigation to determine if there are any existing appropriative rights of which we are not aware.

b. As to potential new appropriators, in 1964, in its Decision D. 1196 denying various applications to appropriate Kern River water, the State Water Rights Board found there was no unappropriated water in the River. In that decision, the Board found that: "The natural flow of Kern River reaching the floor of the San Joaquin Valley has been apportioned among the various users for many years by court decisions and agreements." It then referred specifically to the Supreme Court decision in *Lux v. Haggin*, supra, the Miller-Haggin Agreement and amendments thereto, the Shaw Decree, the Minimum Pool Agreement, and the 1962 Agreement.

c. Again, on November 16, 1989, the State Water Resources Control Board ("State Board"), acting pursuant to Water Code Sections 1205 through 1207, adopted Board Order WR-89-25, entitled "Order Adopting Declaration of Fully Appropriated Stream Systems and Specifying Conditions for Acceptance of Applications and Registration." Exhibit A to the Declaration indicates that the Kern River in Kern County is a fully appropriated stream and that there is no unappropriated water on this system. In 1994, the State Board adopted Order WR-94-1 denying Lost Hills Water District's request to modify Board Order WR-89-25, i.e. that the Kern River is a fully appropriated stream. More recently, the State Board's Division of Water Rights has received four petitions requesting modification of the fully appropriated stream determination for the Kern River and applications for appropriation. The petitions and applications were based on a determination by the Superior Court of Tulare County in *North Kern Water Storage District v. Kern Delta Water District, et al,.* Case 96-172919, that 87,000 acre-feet per year of water held by Kern Delta Water District under a pre-1914 appropriative water right had been forfeited by non-use. The State Board has deferred action on these petitions and applications until completion of the on-going litigation, which is currently on appeal.

d. As for non-party riparians, there are some apparently riparian lands upstream from First Point of measurement. However, we have been informed that their potential use is not considered material. If there are any such users along the river below First Point who were not parties to the above-mentioned agreements or successors in interest to any of the parties, they might be able to assert their riparian rights. However, we are informed that there are very few parcels along the river that meet this test and that none of them are of significant size. We have not independently investigated the extent of riparian lands along the Kern River.

4. Nickel, the Trust and La Hacienda, Inc., as attorneys-in-fact have made several sales and exchanges of Kern River water with various public entities and individuals, such as the sale to the Agency/State of California referenced above. Additional transactions have involved the Agency and its Improvement District #4, County of Kern, North Kern Water Storage District, Buena Vista Water Storage District, Lost Hills Water District, the Kern National Wildlife Refuge, Shell Oil Co., Union Oil Co., Chevron Oil Co. and Paramount Farming Company. These transactions have been accomplished without successful challenge.

The factual matters discussed in this letter are made to the best of our current actual knowledge. We have used due diligence in accumulating and reviewing this material so that the opinion accurately reflects the state of the record as reasonably determinable as of the date of this opinion. In the course of preparing this letter, no information that would give us current actual knowledge of the inaccuracy of such factual statements has come to our attention. We have made no other factual investigations beyond the documents provided.

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This letter should not be construed as a representation that all of the facts necessary to reach any particular conclusion are contained herein. Rather, we represent only that this letter contains those facts within our current actual knowledge that we would deem material in connection with due diligence investigations of transactions of this sort. You should review the documents in their entirety. We are not currently aware of any other agreements, water rights, documents or circumstances that would impair Nickel's or Olcese's ability to carry out their obligations under the Contract, or that would impair the ability of the Contract to function in the manner contemplated by the parties.

We disclaim the use of this letter as warranting title to the water and water rights in issue. We have provided and/or offered to the Agency copies of all of the agreements, assignments, and powers of attorney in our possession which we believe to be relevant to the Kern River Lower River Water Rights which are the subject of the Contract. You have informed us that you have made a thorough independent examination into this matter and have completed your own due diligence review to confirm the information in this letter.

We disclaim any obligation to update this letter for events occurring after the date hereof.

This letter is furnished by us as counsel to Nickel Family, LLC. No attorney-client relationship has existed or exists between our firm and Olcese or Garces in connection with the Contract or by virtue of this letter. This letter is intended solely for the use of the Agency in connection with the Contract, and may not be used, circulated, quoted or otherwise referred to or relied upon for any other purpose or by any other person without our prior written consent.

Respectfully,

KRONICK, MOSKOVITZ, TIEDEMANN & GIRARD
A Professional Corporation

cc: Mr. James L. Nickel

642630.2

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February 22, 2001

Mr. James L. Nickel
Nickel, LLC
P. O. Box 60679
Bakersfield, CA 93386-0679

Via Hand Delivery (Bakersfield)
Scott A. Morris, Esq.
Kronick, Moskovitz, Tiedemann & Girard
400 Capitol Mall, 27th Floor
Sacramento, CA 95814-4416

Re: Purchase of the Lower Kern River Water Rights
(Our File No.: OWD-8.1.2)

Gentlemen:

As you are aware, on January 23, 2001 Nickel Family, LLC ("Nickel"), a California limited liability company; the Olcese Water District ("Olcese") and the Kern County Water Agency("KCWA"), both of which are public agencies in the State of California, executed the Contract to Transfer the Kern River Lower River Water Rights (hereinafter referred to as the "Contract"). Article 8.1(d) of the Contract states:

> (d) Opinion Letter of Counsel: Nickel shall deposit into escrow an opinion letter of counsel, satisfactory to the Agency, providing that the conveyances, transfers and assignments provided in this Contract are sufficient to transfer all right, title and interest of Nickel and Olcese to the rights described herein, except those specifically retained by or quitclaimed to Nickel and/or Olcese.

In order to satisfy Article 8.1(d), I hereby represent that the representations and warranties given by Olcese in Article 7.1(k) are true and correct.

Very truly yours,

Gene R. McMurtrey
Attorney for Olcese Water District

GRM:gg

CONTRACT TO TRANSFER
THE KERN RIVER LOWER RIVER WATER RIGHTS

This Contract is made as of the 23rd day of January 2001, by and between Nickel Family, LLC ("Nickel"), a California limited liability company; the Olcese Water District ("Olcese") and the Kern County Water Agency ("Agency"), both of which are public agencies in the State of California, duly organized, existing and acting pursuant to the laws thereof.

RECITALS

WHEREAS, the Governor's Budget Act for 2000, Chapter 52, Statutes of 2000, appropriated to the Department of Water Resources local assistance grant funds in the amount of $161,544,000 by budget item 3860-01-6027, payable from the interim Reliable Water Supply and Water Quality Infrastructure and Management Subaccount, and the Kern County Water Agency's Kern River Restoration Project has been selected for funding in the amount of $23,000,000 from that subaccount; and

WHEREAS, the Agency intends to use money from that appropriation for development of local water supplies, water quality, conveyance and banking programs within Kern County; and

WHEREAS, the Agency has identified the acquisition of the Lower River Water Rights as a source suitable for such programs; and

WHEREAS, the Lower River Water Rights are Kern River rights that historically have yielded on average 50,000 acre-feet per Year; and

WHEREAS, the Agency has purchased the undivided interest in the Lower River Water Rights, and other water rights and inventories, previously owned by Garces Water Company; and

WHEREAS, Olcese owns the remaining interest in the Lower River Water Rights subject to Nickel's right to use any portion of that water that is excess to Olcese's needs in accordance with the March 18, 1981 contract between Olcese and Nickel; and

WHEREAS, the Agency desires to purchase the remaining interest in the Lower River Water Rights and other interests described herein from Olcese and Nickel on the terms provided for in this Contract; and

WHEREAS, pursuant to the Detachment and Water Sale Contract No. 99-150, dated June 30, 1999, between Olcese, the City of Bakersfield and the California Water Service Company, the City of Bakersfield will provide water to meet the future municipal and industrial needs of lands within Olcese that are within the boundaries of the City of Bakersfield, provided those lands are detached from Olcese; and,

WHEREAS, while there is no current demand from the landowners in Olcese for agricultural water supplies, if there should be a demand for water for agricultural use within Olcese over and above the amount that can be supplied to such lands from riparian rights, Olcese will receive sufficient compensation from the sale of its Lower River Water Rights to enable it to meet those demands from sources other than the Lower River Water Rights; and

WHEREAS, the Olcese Board of Directors has determined that the transfer of the Lower River Water Rights to the Agency as provided for in this Contract is in the best interest of its landowners; and

WHEREAS, the Agency, as the lead agency, and Olcese as a responsible agency, have completed all requirements under the California Environmental Quality Act for all actions provided for in this Contract.

NOW, THEREFORE, Nickel, Olcese and the Agency agree as follows:

ARTICLE 1. DEFINITIONS

When used in this contract, the following terms have the meanings hereinafter set forth:

1.1 "Agency's Return on Investment Rate" means the County of Kern's Treasury Pool investment rate.

1.2 "Agency SWP Entitlement Water" and "SWP Entitlement Water" mean the SWP water provided for in Table A of the Agency's Water Supply Contract.

1.3 "Agency's Water Supply Contract" means the November 15, 1963 Water Supply Contract between the State of California Department of Water Resources and Kern County Water Agency, as amended.

1.4 "Carmel Rights" means those rights and interests described in Exhibit C.

1.5 "Castro Ditch Rights" means those water rights and interests described in Exhibit B.

1.6 "CEQA" means the California Environmental Quality Act, California Public Resources Code sections 21000, *et seq.*

1.7 "Close of Escrow" or "Closing Date" means the day on which all applicable conditions precedent to this Contract are completed to Nickel's, Olcese's and the Agency's satisfaction or waived by the party that benefits from the condition precedent as set forth in Articles 8.1, 9.1 and the assignments provision of Article 10.1.

1.8 "DWR" means the Department of Water Resources of the State of California.

1.9 "Escrow Agent" means Chicago National Title Company in its Bakersfield, California office.

1.10 "Agency Transfer Water" means 10,000 acre-feet of water annually, to be provided by the Agency to Nickel for delivery and sale to third parties from the California Aqueduct.

1.11 "Johnson Ditch Rights" means those water rights described in Exhibit B.

1.12 "Lower River Water Rights" means those water rights described in Exhibit A.

1.13 "Rio Bravo Ranch" means that property described as the southern half of the northeast quarter and that portion of the southern half north of the Kern River of Section 33, the southern half of the southern half of Section 34, the southern half of the northern half and the southern half of Section 35, the southern half of the northern half and the southern half of Section 36, Township 28 South Range 29 East Mount Diablo Base and Meridian; Section 1, Section 2, the portion of Section 3 lying east of the Kern River, the northeast quarter of Section 10, Section 11, Section 12, the western half of the northeast quarter and the northwest quarter of the southeast quarter of Section 13, the northeast quarter of Section 24, Township 29 South, Range 29 East Mount Diablo Base and Meridian; the southern half of Section 5, Section 6 and Section 8, Township 29 South, Range 30 East Mount Diablo Base and Meridian, as depicted on Exhibit F.

1.14 "State" means the State of California.

1.15 "State Funds" means the funds made available to the Agency by the State from appropriations of funds authorized by Chapter 52, Statutes of 2000.

1.16 "SWP" means the State Water Project.

1.17 "Tupman" means the point of delivery on the California Aqueduct more particularly described as milepoint 238.04 located within Reach 12E of the California Aqueduct.

1.18 "Year" means the twelve (12) month period from January 1st through December 31st, both dates inclusive.

ARTICLE 2. GENERAL PROVISIONS

2.1 The Agency is purchasing and Nickel and Olcese are selling to the Agency their Lower River Water Rights and other rights as described and provided for herein. The Agency shall pay Nickel and Olcese for these rights the various considerations provided for in this Contract, including, but not limited to, providing Nickel with 10,000 acre-feet of Agency Transfer Water annually at Tupman which Nickel intends to sell both within and outside of Kern County. The Agency shall assume all the rights, duties and obligations associated with the Lower River Water Rights and other rights being transferred to it. Nickel, the Agency, and Olcese shall cooperate with each other in the

performance of their respective obligations and in the exercise of their respective rights under this Contract.

ARTICLE 3. TERM OF CONTRACT

3.1 This Contract shall continue in perpetuity. However, if Escrow does not close by the date specified in Article 11.1, this Contract shall terminate on that date.

ARTICLE 4. PURCHASE AND PAYMENT TERMS

4.1 Purchase and Sale: Nickel hereby sells to the Agency and the Agency hereby purchases from Nickel all of Nickel's rights, title and interest to the Lower River Water Rights, including, but not limited to, Nickel's right to store, exchange, substitute and regulate the Lower River water as set forth in Exhibit A. Nickel also quitclaims to the Agency the Castro Ditch Rights and the Johnson Ditch Rights as set forth in Exhibit B. Olcese hereby sells to the Agency and the Agency hereby purchases from Olcese all of Olcese's rights, title and interest to the Lower River Water Rights, including, but not limited to, Olcese's right to store, exchange, substitute and regulate the Lower River Water as set forth in Exhibit A. Nickel and Olcese also hereby substitute the Agency as attorney-in-fact for any powers of attorney they may presently have relating to the Lower River Water Rights sold to the Agency. The purchase and sale of all of these rights shall be consummated through the escrow opened with the Escrow Agent. Any escrow instructions given the Escrow Agent by Nickel, Olcese or the Agency shall be consistent with the terms of this Contract unless otherwise agreed to by all parties in writing.

4.2 Cash Payments: By the Close of Escrow, Agency shall pay to Olcese one million dollars ($1,000,000) for the purchase of Olcese's Lower River Water Rights. By the Close of Escrow, Agency shall pay to Nickel six million four hundred twenty-two thousand dollars ($6,422,000) as partial consideration for the purchase of all rights and assets acquired by the Agency from Nickel under this Contract. The Agency shall pay Nickel and Olcese interest at the Agency's Return on Investment Rate on the above sums from the date on which the Agency receives not less than $10,000,000 of State Funds until the Close of Escrow. This interest shall be payable within five days of the Agency's receipt of the County of Kern's calculation of the first quarter of the Year 2001 quarterly interest rate , provided that the escrow closes, to Nickel and Olcese in proportion to the purchase payments to be paid to them respectively as provided for above.

4.3 Internal Revenue Code Section 1031 Exchange: Agency agrees to cooperate with Nickel in completing an exchange qualifying for nonrecognition of gain under Internal Revenue Code section 1031 and the applicable provisions of the California Revenue and Taxation Code. Nickel reserves the right to convert this transaction to an exchange at any time before the Close of Escrow. Nickel and the Agency agree, however, that consummation of the transaction contemplated by this Contract is not conditioned on completion of such an exchange. Nickel shall have the right to transfer and assign to an intermediary all of Nickel's rights and obligations under this Contract in order to complete the exchange. The Agency shall incur no additional liabilities, expenses or costs as a result of or connected with the exchange.

4.4 Water Exchange: Beginning in 2001 the Agency shall deliver to Nickel, annually during the term of this Contract, ten thousand (10,000) acre-feet of the Agency Transfer Water at Tupman as partial consideration for Nickel's interest in the Lower River Water Rights. The Agency shall provide the Agency Transfer Water at Tupman at no cost to Nickel other than the cost set forth in Article 4.5. The Agency shall use its best efforts to obtain and maintain approvals from the DWR for delivery of any Agency Transfer Water into the California Aqueduct, and if such approvals are not obtained after reasonable efforts the parties shall, in good faith, negotiate alternative mechanisms for delivery of Agency Transfer Water.

4.5 Power Charges: In any Year in which the Agency's allocation of SWP Entitlement Water on May 1st is seventy-five percent (75%) or less than its entitlement for that Year, Nickel shall pay the Agency the following power charge within thirty days after the Agency submits an invoice to Nickel, which invoice shall be submitted on or shortly after May 1. The power charge set forth in the invoice shall be an amount determined by the Agency by multiplying 10,000 acre-feet by the Agency's estimated per acre-foot power costs for pumping water from the Agency's Pioneer Project and delivering it to Tupman. The Agency shall estimate this per acre-foot cost using the method set forth in Exhibit D. There shall be no power charge to Nickel in any Year in which the Agency's allocation of SWP Entitlement Water on May 1 is greater than 75% of its SWP entitlement for that Year.

4.6 Treatment Costs: If the Agency is prevented from delivering non-SWP water into the California Aqueduct to meet the ten thousand (10,000) acre-foot obligation to Nickel required by Article 4.4 due to water quality restrictions unless it is treated, the Agency shall pay the cost of treating that water to the level acceptable for delivery into the California Aqueduct.

4.7 California Aqueduct Capacity: The ten thousand (10,000) acre-feet of Agency Transfer Water provided to Nickel shall be transported within the California Aqueduct to the full extent of the Agency's rights to use Aqueduct.

4.8 Scheduling of Agency Transfer Water: The Agency, in consultation with Nickel, shall schedule all Agency Transfer Water deliveries with the DWR at the same time and in the same manner as the Agency schedules deliveries of SWP Entitlement Water to the Agency's Member Units, as set forth in the Agency's contracts with its Member Units as they presently exist or may be changed from time to time.

4.9 Agency Transfer Water Sales: Any sale of the Agency Transfer Water shall be at the sole discretion and direction of Nickel. Nickel may request Agency's assistance, involvement and expertise in negotiating and consummating any sale. The Agency shall cooperate and assist Nickel, as requested, subject to the Agency's legal powers and duties and the direction of the Agency's Board of Directors. The Agency's involvement may include efforts to market Nickel's Agency Transfer water on behalf of Nickel, entering into contracts for the sale of the Agency Transfer Water and efforts to obtain the approval, cooperation and assistance of DWR and the State Water Contractors in obtaining any necessary approvals from regulatory agencies to effect such sales or transfers.

4.10 Proceeds of Agency Transfer Water Sales: All net proceeds of Agency Transfer Water sales shall be distributed as follows: Ninety percent (90%) to Nickel, ten percent (10%) to the Agency. "Net proceeds of Agency Transfer Water sales" shall mean the amount remaining from the proceeds of a sale after deducting any payments to third parties or other costs incurred by Nickel or the Agency that are necessary in order to complete a sale, such as costs for CEQA compliance, regulatory fees and charges, wheeling charges, power charges for transportation beyond Tupman or pursuant to Article 4.5, etc. Neither Nickel's nor the Agency's administrative costs in affecting an Agency Transfer Water sale shall be deemed to be payments to third parties necessary to complete a sale. All costs shall conform with standard industry practice, and are subject to audit at the requesting parties expense. After incurring such costs, Nickel or the Agency may invoice the other party for its respective share of such costs (Nickel 90%, Agency 10%) and payment thereon shall be made within thirty days of mailing.

4.11 Riparian or Carmel Rights: The Agency shall not challenge or contest directly or indirectly any of the Kern River riparian rights, as defined in the March 18, 1981 "Agency Agreement for Riparian Lands – Olcese Water District", of Nickel or Rio Bravo Ranch. The Agency shall not challenge or contest directly or indirectly any of the Carmel Rights of Olcese, Nickel or Rio Bravo Ranch.

4.12 Discharge of Well Water: The Agency shall not challenge or support any challenge to Olcese's or Rio Bravo Ranch's discharge of well water into the Kern River to meet the demands of the Rio Bravo Ranch or Olcese; provided, that the pumping of such well water does not substantially degrade the Kern River water quality to the injury of the Agency. The Agency acknowledges that Nickel has provided the Agency with an April 2000 study by Kenneth D. Schmidt and Associates regarding the origin of the groundwater pumped by Rio Bravo Ranch and Olcese.

4.13 Additional Consideration: At the Close of Escrow:

(a) The Agency shall convey to Nickel all of the Agency's rights, title and interest in the water inventories, more particularly described in Exhibit E.

(b) Olcese shall convey to the Agency all of Olcese's rights, title and interest in the City of Bakersfield's 2,800 acre recharge facility and to any water banked therein, subject to the City of Bakersfield's agreement to release Olcese from the thirteen (13) year supply requirement to meet the demands within Olcese set forth in Agreement 77-07, as amended by Agreement 78-12, Agreement 81-76, and Agreement 90-05.

(c) The Agency shall quitclaim all its rights, title and interest in the Carmel Rights to Olcese.

(d) Garces Deed: The Agency shall quitclaim to Nickel the rights and property identified in Exhibit G which were included in the rights and property granted to the Agency by the Garces Water Company, Inc. in the September1, 2000 grant deed from Garces Water Company, Inc. to the Agency.

(e) Nickel and Olcese shall deliver to the Agency all documents, files, legal files, historical records, communications and correspondence related to the Lower River Water Rights and the Johnson and Castro Ditch rights. Nickel and Olcese may, at their cost, make copies of such records. The Agency shall provide Nickel and Olcese access to any documents relating to the Lower River Water Rights in its possession upon request.

(f) Miller and Lux Facilities: Nickel and its related entities, and Olcese, agree to transfer, assign and convey any water or water related rights acquired from Miller & Lux, and its successors in interests, related to the Kern River within Kern County north of Highway 46. These rights may include, but are not limited to, transportation, spreading, storage and water rights.

ARTICLE 5. WATER PIPELINE EASEMENT

5.1 Nickel shall grant the Agency, for fifty thousand dollars ($50,000), an easement through Nickel's Rio Bravo Ranch for a water pipeline, beginning at the Rio Bravo Hydroelectric Project power plant forebay and roughly paralleling Highway 178. The size, use, location and terms for this easement shall be mutually agreed upon by Nickel and the Agency. If the use of this easement by the Agency causes any damage of facilities, improvements or orchards in the Rio Bravo Ranch, the Agency shall either, at Nickel's election, replace the damaged facilities or compensate Nickel for the fair market value of the damages. Agency's use of the power canal shall be consistent with the Condemnation Settlement Agreement of May 20, 1985. If any Agency facilities in the easement interfere with Nickel's current or future use of the Nickel's property, the Agency, at Nickel's request, shall relocate its facilities at Nickel's expense. Nickel is not obligated to obtain subordination from existing deeds of trust on its property. For the granting of the easement provided for herein, the Agency shall pay all costs to survey and record the easement. Nickel and the Agency shall use their best efforts to record the easement prior to the Close of Escrow; however, if the easement is not recorded within one year from the date of execution of this Contract the Agency's right to the easement will expire, and the $50,000 payment will be retained by Nickel unless failure to record has been caused by Nickel's failure to cooperate or unreasonable disapproval of proposed alignments. The Agency hereby grants Nickel (a) the right to convey water in the Agency's future water pipeline at the Agency's incremental cost to the extent there is capacity in the water pipeline not being used by the Agency and (b) the right to increase the capacity of the Agency's future water pipeline at the incremental cost.

ARTICLE 6. HYDROPOWER

6.1 Hydropower Interests: Nickel's conveyance of its Lower River Water Rights, and the other described rights to the Agency provided for in this Contract does not include Nickel's rights in the Rio Bravo Hydroelectric Project. The parties agree that Nickel retains its eighty-five percent (85%) interest in the Rio Bravo Hydroelectric Project Agreement dated April 29, 1985 between Catalyst Energy Development Corporation, Catalyst Rio Bravo Corporation and Olcese and the Condemnation Settlement Agreement dated May 20, 1985 between Nickel Enterprises and Olcese.

6.2 Right to Take: Nickel and Olcese shall grant to the Agency the right to take water from the Rio Bravo Hydroelectric Project to serve the Agency's proposed water pipeline referred to in Article 5.1. The Agency's right to take such water shall be subordinate at all times to the extent of Nickel's and Olcese's rights for the Rio Bravo Ranch's current or future irrigation demands.

ARTICLE 7. REPRESENTATIONS AND WARRANTIES

7.1 Nickel and Olcese hereby acknowledge, represent and warrant to the Agency that, as of the date of this Agreement and the Close of Escrow:

(a) Recitals and Exhibits: The Recitals and Exhibits to this Contract are true and correct.

(b) Organization: Nickel and Olcese are duly organized and validly exist in good standing under the laws of the State of California. Nickel and Olcese have full power, authority and legal right to execute, deliver and perform this Contract. To the best of Nickel's and Olcese's knowledge (after due diligent investigation and due inquiry), Nickel and Olcese have the unrestricted right and power to own, use and sell their respective interests in the Lower River Water Rights, as set forth in Exhibit A, as provided in and required by this Contract, have complied with all applicable laws and regulations of governmental agencies, officials or authorities, have obtained all necessary permits, licenses and approvals necessary and appropriate to proceed with the conduct of their business in accordance with the requirements of this Contract and have followed all necessary, proper and appropriate procedures in procuring such permits, licenses and approvals.

(c) Authorization: The execution and delivery by Nickel and Olcese of this Contract, and any other agreements or instruments required by this Contract and the performance by Nickel and Olcese of their obligations in connection with this Contract: (1) have been each duly authorized by all necessary boards of directors; and (2) to the best of Nickel's and Olcese's knowledge, after diligent investigation and due inquiry, require no registrations with or approvals of any person not heretofore obtained.

(d) Litigation: To the best of Nickel's and Olcese's knowledge (after diligent investigation and due inquiry), there is no action, suit, claim, cause of action, or proceeding at law or in equity (or by or before any governmental agency, official or authority of any local, State or Federal government) now pending, contemplated by Nickel or Olcese or threatened in writing against or affecting any Lower River Water Rights other than as expressly stated in a writing delivered to Agency at or prior to the Close of Escrow.

(e) No Oral Understandings: In executing this Contract, neither Nickel nor Olcese is relying upon any representation, communication, understanding or expectation (whether express or implied) that is not clearly and expressly stated in this Contract.

(f) Receipt of Information: Nickel and Olcese have received any and all information from the Agency which they desire or expect in connection with the transaction evidenced by this Contract, or any other document related to or required by this Contract. Nickel and Olcese are not relying upon the Agency directly or indirectly to disclose (or to evaluate any other person's disclosure of) any such matters, and Nickel and Olcese excuse and release the Agency from any duty whatsoever to make such disclosures.

(g) No Continuing Obligations: Nickel and Olcese understand and agree that, after the Close of Escrow, the Agency shall have no direct or indirect obligations whatsoever to them except as expressly stated in or required by this Contract.

(h) Separate Obligations: Nickel and Olcese shall be bound by and perform this Contract and each of the other documents related to or required by this Contract to which they are a party, separately and independently from the obligations of any other person or entity and regardless of whether or not any other person or entity performs this Contract or any other documents related to or required by this Contract.

(i) Violations of Applicable Laws: To the best of their knowledge, neither Nickel nor Olcese is in violation of any law, statute, regulation, ordinance or other governmental provisions with respect to any of the Lower River Water Rights to be conveyed to the Agency pursuant to this Contract.

(j) Violations of Other Agreements: The entry into this Contract does not create or result in a breach of any agreements with respect to any of the Lower River Water Rights to which Nickel or Olcese is a party or to which either of them is otherwise subject or bound.

(k) Ownership of Lower River Water Rights: Nickel and Olcese (a) collectively are the sole owners of the remaining of the Lower River Water Rights, as set forth in Exhibit A, being conveyed herein exclusive of any other owner or claimant and (b) have no knowledge and are not aware of any notice or other information concerning any other claims of any kind which would effect Nickel's or Olcese's title or claim to the Lower River Water Rights. The Lower River Water Rights described in Exhibit A constitute a complete description of all water, water storage, exchange entitlements and drainage contracts and other miscellaneous rights of any kind or description relating thereto owned or claimed by Nickel and Olcese. Nickel and Olcese have heretofore supplied the Agency with all documents known to Nickel and Olcese which constitute evidence of any Lower River Water Rights and title and claim thereto by Nickel and Olcese.

(l) Taxes: To the best of Nickel and Olcese's knowledge (after diligent investigation and due inquiry), Nickel and Olcese have paid (or caused to be paid) all property and other taxes required to be paid (and all assessments of which they have notice or acknowledged) with respect to the Lower River Water Rights to the extent such taxes (or assessments) have become due and payable. If there are any unpaid taxes or assessments as of the Close of Escrow, Nickel and Olcese shall be liable for their payment.

7.2 Agency hereby acknowledges, represents and warrants to Nickel and Olcese that, as of the date of this Contract and the Close of Escrow:

(a) Recitals and Exhibits: The Recitals and Exhibits to this Contract are true and correct.

(b) Organization: The Agency is duly organized and validly exists in good standing under the laws of the State of California. The Agency has full power, authority and legal right to execute, deliver and perform this Contract. To the best of the Agency's knowledge (after due diligent investigation and due inquiry) the Agency has complied with all applicable laws and regulations of governmental agencies, officials or authorities, have obtained all necessary permits, licenses and approvals necessary and appropriate to proceed with the conduct of its business in accordance with the requirements of this Contract and has followed all necessary, proper and appropriate procedures in procuring such permits, licenses and approvals, provided, however, that the approvals which are the subject of Article 4.4 shall be governed by that Article.

(c) Authorization: The execution and delivery by the Agency of this Contract, the consummation of the transactions and contracts required or contemplated by it and the performance by the Agency of its obligations in connection with this Contract: (1) have been each duly authorized by the Agency's board of directors; and (2) to the best of the Agency's knowledge, after diligent investigation and due inquiry, require no registrations with or approvals of any person not heretofore obtained.

(d) No Oral Understandings: In executing this Agreement, the Agency is not relying upon any representation, communication, understanding or expectation (whether express or implied) that is not clearly and expressly stated in this Contract.

(e) Receipt of Information: The Agency has received any and all information from Nickel and Olcese which it desires or expects in connection with the transaction evidenced by this Contract, or any other document related to or required by this Contract. The Agency is not relying upon Nickel or Olcese directly or indirectly to disclose (or to evaluate any other person's disclosure of) any such matters, and the Agency excuses and releases Nickel and Olcese from any duty whatsoever to make such disclosures.

(f) No Continuing Obligations: The Agency understands and agrees that, after the Close of Escrow, neither Nickel nor Olcese shall have any direct or indirect obligations whatsoever to the Agency except as expressly stated in or required by this Contract.

(g) Violations of Applicable Laws: To the best of the Agency's knowledge, the Agency is not in violation of any law, statute, regulation, ordinance or other governmental provisions with respect to any of the funds and the Agency Transfer Water to be conveyed to Nickel pursuant to this Contract.

(h) Violations of Other Agreements: The entry into this Contract does not create or result in the breach of any other agreement to which the Agency is a party or to which the Agency is otherwise subject or bound.

(i) Agency Transfer Water: The Agency has a legal right to the Agency Transfer Water to be provided to Nickel pursuant to this Contract whether from Agency SWP Entitlement Water or other sources, with full authority to exchange such water as provided for herein; and that such water is held free and clear of any liens, encumbrances or rights of any other party, other than the obligation of the Agency to make the payments to the State and other obligations, as required by the Agency's Water Supply Contract, and that the Agency shall maintain such water free and clear of any such claims during the term of this Contract.

(j) Kern River Water: The Agency understands the hydrology of the Kern River and the historical yield of the Lower River Water Rights, which has been on average, approximately fifty thousand (50,000) acre-feet per year. The Agency shall not hold Nickel or Olcese liable for any reduction in the yield of the Lower River Water Rights below this average.

(k) Obligations of the Lower River Water Rights: The Agency understands, agrees and assumes all of the Lower River Water Rights obligations, including, but not limited to, the Tulare Lake Basin Water Storage District annual ten thousand (10,000) acre-foot fee, the Lake Isabella storage costs, the Kern River Watermaster charges and legal fees, and the City of Bakersfield accounting fees and the Kern Property Corporation settlement. The Agency shall assume such obligations at the Close of Escrow, at which time all expenses for such obligations shall be prorated as per Article 9.1.

(l) Litigation: To the best of the Agency's knowledge (after diligent investigation and due inquiry), there is no action, suit, claim, cause of action, or proceeding at law or inequity (or by or before any governmental agency, official or authority of any local, State or Federal government) now pending, contemplated by the Agency or threatened in writing against or affecting any funds the Agency shall receive from the State of California pursuant to the Safe Drinking Water, Clean Water, Watershed Protection and Flood Protection Act or wherein an unfavorable decision, ruling or finding would (i) affect the creation, organization, existence or powers of the Agency or the titles and powers of its Board members and officers to their respective offices; (ii) enjoin or restrain the approval and/or execution of this Contract, or (iii) in any way question or affect any of the rights, powers, duties or obligations of the Agency with respect to implementation of this Contract, other than as expressly stated in a writing delivered to Nickel and Olcese at or prior to the Close of Escrow.

ARTICLE 8. CONDITIONS PRECEDENT

8.1 The obligations of Nickel and Olcese to sell the water rights set forth in Exhibits A and B and the resulting obligation of the Agency to pay and provide additional consideration are conditioned upon the satisfaction or waiver of the following conditions precedent prior to the Close of Escrow:

(a) State Funds: The Agency's receipt of State Funds sufficient to make the payments required of the Agency.

(b) Agency Resolution: The Agency shall provide Nickel a resolution adopted by the Agency's Board of Directors, meeting the requirement of Section 5 of the Kern County Water Agency Act (California Statutes of 1961, Chapter 1003, as amended), containing a finding by the Board that the Agency Transfer Water to be provided to Nickel pursuant to this Contract will not be needed for use within the Agency.

(c) Authorizing Resolutions: Nickel, the Agency and Olcese shall each provide the other parties to this Contract resolutions from their respective Boards of Directors authorizing the execution of this Contract.

(d) Opinion Letter of Counsel: Nickel shall deposit into escrow an opinion letter of counsel, satisfactory to the Agency, providing that the conveyances, transfers and assignments provided in this Contract are sufficient to transfer all right, title and interest of Nickel and Olcese to the rights described herein, except those specifically retained by or quitclaimed to Nickel and/or Olcese.

ARTICLE 9. CLOSE OF ESCROW

9.1 Close of Escrow: Agency shall deposit the sum of $7,472,000 into Escrow, and Close of Escrow shall occur when (1) the Agency delivers to the Escrow Agent $7,472,000 as required by Articles 4.2 and 5.1; (2) the Agency delivers to the Escrow Agent its prorated portion of the annual expenses incurred by the Lower River Water Rights; (3) the Agency, Nickel and Olcese have deposited all requisite documents for the transfer of the Lower River Water Rights, and other described rights to be transferred pursuant to this Contract, duly executed, authorized , acknowledged and approved by the parties' respective counsel as sufficient to transfer all purchased rights; and (4) all conditions precedent have occurred. If assignments are not approved, Nickel and Olcese shall in good faith negotiate with the Agency to provide for an operation agreement which will provide the Agency with equivalent rights (in the Agency's judgment) to the failed assignment. All expenses associated with the Lower River Water Rights shall be prorated as of January 1, 2001. The Agency, Nickel and Olcese shall notify by written notice to all parties and the Escrow Agent of the intended date for the Close of Escrow. All closing costs and fees, including without limitation, any transfer taxes, escrow fees, drafting and notary charges and recording fees shall be apportioned equally between the Agency, Olcese and Nickel. Each party shall be responsible for fees and costs of its own counsel.

ARTICLE 10. CONDITIONS SUBSEQUENT

10.1 Completion of All Required Assignments of Rights and/or Obligations: Prior to the Close of Escrow, the parties shall cooperate to achieve all necessary approvals of assignments and transfers of the rights and obligations to the Agency described herein and such approvals shall be deposited into Escrow prior to the Close of Escrow. If such assignments are not approved prior to the Close of Escrow, the parties

shall negotiate a mutually satisfactory amendment, pursuant to Article 12.9, making such approvals a condition subsequent.

ARTICLE 11. ESCROW AGENT'S EXCULPATORY PROVISIONS

11.1 Close of Escrow: Escrow shall be closed as soon as possible, but no later than February 22, 2001 provided that the Escrow may extend beyond February 22, 2001 for six months by written agreement of the parties.

11.2 Neglect, Misconduct: The Escrow Agent will not be liable for any of its acts or omissions unless the same constitutes negligence or willful misconduct.

11.3 Information: The Escrow Agent will have no obligation to inform any party of any other transaction or of facts within the Escrow Agent's knowledge, even though the same concerns water entitlements, provided such matters do not prevent the Escrow Agent's compliance with this Contract.

11.4 Form, Validity, and Authority: The Escrow Agent will not be responsible for (1) the sufficiency or correctness as to form or the validity of any document deposited with the Escrow Agent, (2) the manner of execution of any such deposited document, unless such execution occurs in the Escrow Agent's premises and under its supervision, or (3) the identity, authority, or rights of any person executing any document deposited with the Escrow Agent.

11.5 Conflicting Instructions: Upon receipt of any conflicting instructions, the Escrow Agent shall immediately notify all parties that there is an apparent conflict in the instructions. The Escrow Agent will have the right to take no further action until otherwise directed, either by the parties' mutual written instructions or a final order or judgment of a court of competent jurisdiction.

11.6 Interpleader: The Escrow Agent will have the absolute right, at its election, to file an action in interpleader requiring the parties to answer and litigate their several claims and rights among themselves, and the Escrow Agent is authorized to deposit with the clerk of the court all documents and funds held in Escrow. If such action is filed, the parties will jointly and severally pay the Escrow Agent's termination charges and costs and reasonable attorney's fees that the Escrow Agent is required to expend or incur in the interpleader action, the amount thereof to be fixed and judgment therefor to be rendered by the court. Upon the filing of such action, the Escrow Agent will be and become fully released and discharged from all obligations to further perform any obligations imposed by this Contract.

ARTICLE 12. MISCELLANEOUS

12.1 Reference: The parties to this Contract agree to waive and give up the right to a jury trial and to submit all disputes, controversies, differences, claims or demands, whether of fact or of law or both, relating to or arising out of this Contract, to be resolved at the request of any party, by a trial on Order of Reference conducted pursuant to the provisions of Code of Civil Procedure section 638 *et seq.* or any

amendment, addition or successor section thereto to hear the case and report a statement of decision thereon. The parties intend this general reference agreement to be specifically enforceable in accordance with said provisions. If the parties are unable to agree upon a referee, one shall be appointed by the Presiding Judge of the Kern County Superior Court. The parties shall share equally, by paying their proportionate amount of the estimated fees and costs of the initial reference.

12.2 Indemnity: Each party shall jointly and severally indemnify the other parties hereto against, and hold each other harmless from, any loss, cost, damage (whether general, compensatory, or otherwise), liability, indebtedness, claim, cause of action, judgment, court costs, and legal or other out-of-pocket expense (including attorneys' fees) which any party may suffer or incur as a direct or indirect consequence of (a) any breach by another party of any representation or warranty made in connection with this Contract; (b) any failure of any party to perform any obligation under this Contract which may affect another party.

12.3 Notices: All Notices given hereunder shall be transmitted in writing to the addresses below or to such other address in the State of California as a party may designate by written notice to the other parties:

If to Nickel:	Mr. James Nickel, President Nickel Family, LLC P.O. Box 60679 Bakersfield, California 93386-0679 Facsimile: (661) 872-7141
If to Olcese:	Board of Directors Olcese Water District P.O. Box 651 Bakersfield, California 93302 Facsimile: (661) 872-9956
If to Agency:	Mr. Thomas N. Clark, General Manager Kern County Water Agency P.O. Box 58 Bakersfield, California 93302 Facsimile: (661) 634-1428

All such notices shall be deemed to have been given at the first to occur of time of actual delivery, or, if mailed, forty-eight (48) hours after deposited in certified or registered United States mail, postage prepaid. In case of notice transmitted by an overnight delivery service (which obtains a written receipt upon delivery), notice shall be deemed to be given when delivered by any such service, charges prepaid and the receipt is signed. If any party transmits information to any other party orally or by a means not authorized herein, the party receiving such information shall be entitled to assume that the party giving such information will nevertheless comply with its written notice obligations, and

no notice shall be deemed to have been given until the party receiving the information receives written notice as required herein.

12.4 Cumulative Remedies: Except as otherwise expressly provided herein, all rights and remedies provided for in this Contract are cumulative and shall be in addition to any and all other rights, powers, privileges and remedies provided by law.

12.5 No Third Parties Benefited: This Contract is made and entered into for the sole protection and benefit of the parties hereto, their successors and assigns, and no other person shall be a direct or indirect beneficiary of, or have any direct or indirect cause of action or claim in connection with, this Contract.

12.6 Time: Time is of the essence in this Contract.

12.7 Governing Law: This Contract shall be governed by and be construed according to the law of the State of California.

12.8 Counterparts: This Contract may be executed in any number of counterparts, each of which shall be deemed an original, but all such counterparts together shall constitute but one and the same instrument.

12.9 Amendments: This Contract contains the entire and exclusive agreement of the parties hereto. This Contract may only be modified or amended by a written contract executed by Nickel and the Agency. This Contract supersedes all prior drafts and communications with respect thereto. Neither such principles of interpretation nor the express language herein shall be impaired or adversely affected by the language of any prior discussion form or draft of this Contract or any other documents. Furthermore, this Contract has been the subject of negotiations by the parties, and this Contract shall not be construed against any party merely because of that party's involvement in their preparation.

12.10 Force Majeure: If the performance by any party to this Contract of any of its obligations or undertakings under this Contract is interrupted or delayed by any occurrence not occasioned by the conduct of any party to this Contract, whether that occurrence is an act of God or public enemy, or whether that occurrence is caused by war, riot, storm, earthquake, or other natural forces, or by the acts of anyone not party to this Contract, then that party shall be excused from any further performance for whatever period of time after the occurrence is reasonably necessary to remedy the effects of that occurrence.

12.11 Post-Escrow Cooperation: Following Close of Escrow, Nickel, Olcese, and Agency shall in good faith cooperate to ensure the complete transfer of all assets as specified in this Contract including, but not limited to, the execution and delivery of documents, deeds, assignments, and other instruments required to achieve the asset transfers specified in this Contract. The parties currently believe George W. Nickel Jr., Adele R. Nickel, and La Hacienda, Inc. do not possess an independent interest in the assets specified in the Contract, but if such interest is discovered they will cooperate to achieve the asset transfers specified in this Contract.

12.12 List of Exhibits: The following shall constitute all of the Exhibits to this Contract and by this reference are fully incorporated herein:

Exhibit A	Lower River Water Rights
Exhibit B	Johnson Ditch Rights and Castro Ditch Rights
Exhibit C	Carmel Water Rights
Exhibit D	Power Charges for Agency Transfer Water
Exhibit E	Water Inventories
Exhibit F	Map of Rio Bravo Ranch
Exhibit G	Garces Property Description

Dated: January 23, 2001

Kern County Water Agency

By _____
General Manager

Attested:

By _____
Secretary, Kern County Water Agency

Dated: January 23, 2001

Olcese Water District

By _____
President, Board of Directors

Attested:

By _____
Secretary, Olcese Water District

Dated: January 23, 2001

Nickel Family, LLC

By _____
President, Board of Directors

Dated: January 23, 2001

George W. Nickel, Jr.

_____

Dated: January 23, 2001

Adele R. Nickel

_____

Dated: January 23, 2001

La Hacienda, Inc.

By _____
President

Recording Requested By:
CHICAGO TITLE COMPANY
ESCROW NO. 673298-MM

When Recorded Mail to:
KERN COUNTY WATER AGENCY
Attention: JOHN STOVALL
P.O. BOX 58
BAKERSFIELD, CA 93302-0058

GRANT DEED

DOCUMENTARY TRANSFER TAX $ -0-
( ) COMPUTED ON FULL VALUE OF PROPERTY CONVEYED, OR ( ) COMPUTED ON FULL VALUE LESS LIENS AND ENCUMBRANCES REMAINING THEREON AT TIME OF SALE.

_____
Signature of declarant or agent determining tax – Firm Name

( ) Unincorporated Area ( ) City of _____

Assessor's Parcel No.: _____

NICKEL FAMILY, LLC, a California limited liability company and OLCESE WATER DISTRICT, a California public agency, for valuable consideration, receipt of which is hereby acknowledged, DO HEREBY GRANT TO KERN COUNTY WATER AGENCY, a California public agency, the real property in the county of Kern, State of California, described on Exhibit A attached hereto and incorporated herein by this reference, together with all improvements thereon and all easements, rights of way, and other rights appurtenant thereto, subject, however, to the lien of non-delinquent real property taxes and assessments and covenants, conditions, restrictions, easements, rights-of-way and servitudes of record.

DATE: _____, 2001

SELLERS:

Nickel Family, LLC

By: _____
Title: _____

Olcese Water District

By: _____
Title: _____

(ALL SIGNATURES MUST BE ACKNOWLEDGED)
MAIL TAX STATEMENTS TO GRANTEE AT ADDRESS ABOVE

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

STATE OF CALIFORNIA)
) ss.
COUNTY OF KERN)

On _____, before me, _____,
Date — Name and Title of Officer (e.g. "Jane Doe, Notary Public")

personally appeared _____,
Name of Signers

☐ personally known to me – **OR** – ☐ proved to me on the basis of satisfactory evidence to be the persons whose names are subscribed to the within instrument and acknowledged to me that they executed the same in their authorized capacities, and that by their signatures on the instrument the persons, or the entity upon behalf of which the persons acted, executed the instrument.

WITNESS my hand and official seal.

_____
Signature of Notary Public

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY(IES) CLAIMED BY SIGNER(S)

☐ Individual
☐ Corporate Officer

_____
Titles

☐ Partners ☐ Limited ☐ General
☐ Attorney-In-Fact
☐ Trustees
☐ Guardian/Conservator
☐ Other: _____

Signer is Representing:
Name of Persons or Entity(ies)

_____

_____

DESCRIPTION OF ATTACHED DOCUMENT

_____
Title or Type of Document

_____
Number of Pages

_____
Date of Document

_____
Signers Other Than Named Above

EXHIBIT A

TO GRANT DEED FROM NICKEL FAMILY, LLC AND OLCESE WATER DISTRICT TO THE KERN COUNTY WATER AGENCY

The real property transferred pursuant to this Grant Deed consists of the undivided interests held by Grantors, Nickel Family, LLC and Olcese Water District in and to the real property described in EXHIBIT A-1 attached hereto.

EXHIBIT A-1

The property referred to in this Contract is set forth below. For the purposes of this Water Asset Description, the term "Sellers" shall refer collectively to the following:

> Nickel Family, LLC, a California limited liability company (sometimes herein called "Nickel") and the Olcese Water District, a California public agency (sometimes herein called "Olcese"), George W. Nickel, Jr., Adele R. Nickel, and La Hacienda, Inc..

A. LOWER RIVER WATER RIGHTS. Any and all of Sellers' right, title and interest now owned in any right or title to divert that certain present and future allocation of the natural flow of the Kern River, including, but not limited to, those rights arising pursuant to the following series of agreements and commonly known as the Lower River Water Rights, and any powers of attorney relating thereto which Sellers may now have:

1. Kern River Water Right and Storage Allocation Agreement. That certain Kern River Water Right and Storage Allocation Agreement (the "Allocation Agreement") dated March 10, 1961, by and among Hacienda Water District and Kern River Delta Farms, as first parties, and Robert Burhans, Jr., Gertrude B. Burhans and Burhans & Trew, Inc., as second parties, recorded January 25, 1967, Book 4019, Page 311, Kern County which grants certain water and storage rights to the second parties ("Burhans") which rights were transferred, or modified, as follows:

(a) That certain Assignment dated March 10, 1961, recorded January 25, 1967, Book 4019, Page 309, Kern County, by which Burhans transferred their rights under the Allocation Agreement to Miller & Lux Incorporated; and

(b) That certain Agreement dated September 30, 1966, recorded January 25, 1967, Kern County, Book 4019, Pages 305-322 and recorded in Book 899, Pages 824-842 of the Official Records of Kings County ("Kings County"), by and among Hacienda Water District, George W. Nickel, Jr. dba Kern River Delta Farms and Miller & Lux Incorporated confirmed and ratified by the Kern River Water Right and Storage Allocation Agreement; and

(c) That certain Assignment dated January 11, 1974, recorded January 22, 1974, Book 4822, Page 952, Kern County, by which Miller & Lux, Incorporated assigned all of its rights under the Allocation Agreement to J.G. Boswell Company ("Boswell"); and

(d) That certain unrecorded Assignment dated October 4, 1974, by which J.G. Boswell transferred all of its rights under the Allocation Agreement to George W. Nickel, Jr.;

2. 1962 Kern River Water Rights and Storage Agreement. That certain Kern River Water Rights and Storage Agreement (the "1962 Agreement"), dated

December 31, 1962, by and between Buena Vista Water Storage District ("Buena Vista"), North Kern Water Storage District ("North Kern"), collectively the "Upstream Group," and Tulare Lake Basin Water Storage District ("Tulare Lake") and Hacienda Water District ("Hacienda"), collectively the "Downstream Group," and recorded April 5, 1963, in Book 3594 at Page 3, Kern County, which agreement further allocates diversion rights to Kern River water subject to the Miller-Haggin Agreement, and, in addition, certain storage and exchange rights for water so diverted in Isabella Reservoir, between the Upstream Group and the Downstream Group as successors in interest to the parties to the Miller-Haggin Agreement; and

3. Water Settlement Agreements. That certain Kern River Water Settlement Agreement dated January 1, 1963, which divides and apportions the Downstream Group's water and storage and provides for the exchange of water, and that certain Supplement to Kern River Water Settlement Agreement dated August 8, 1974, in which Hacienda has the option of delivering water from the California Aqueduct to Tulare Lake or making dollar payments to Tulare Lake, or both, and both agreements are by and between Tulare Lake and Hacienda (collectively, the "Tulare Lake-Hacienda Agreement") and neither agreement has been recorded; and

4. Agreement of Sale of Hacienda Ranch. That certain Agreement of Sale, and that certain Kern River Water and Storage Reservation Agreement (the "Reservation Agreement") both agreements dated October 16, 1978, and entered into by and between La Hacienda-TLR Agreement"), a California joint venture (the "La Hacienda-TLR Agreement"), and that certain Memorandum of Agreement dated October 12, 1978, recorded October 24, 1978, Book 1130, Page 957, Kings County, which agreements reserve to George Nickel, Adele Nickel and La Hacienda the Kern River water and storage rights allocated to the Downstream Group pursuant to the 1962 Agreement and, in addition, certain other water rights formerly held by Hacienda; and

5. Special Power of Attorney. That certain Special Power of Attorney from Hacienda to La Hacienda dated February 14, 1979, recorded Book 1184, Page 120, Kings County and recorded September 18, 1980, Book 5315, Page 1253, Kern County, as authorized by Hacienda Resolution No. 79-1; and that certain Special Power of Attorney from the Tulare Lake Representatives to La Hacienda dated February 8, 1979, both of which grant all rights to utilize the water and storage rights reserved under the Agreement of Sale of Hacienda Ranch referred to in subparagraph A.4 above for the limited purpose of contracting for, selling, exchanging, transferring, conveying or otherwise dealing with Kern River rights reserved by George Nickel, Adele Nickel, and La Hacienda; and

6. 1980 Contract. That certain Contract by and between Hacienda, Olcese, La Hacienda, George Nickel and Adele Nickel dated on or about August 20, 1980; and

7. Olcese-La Hacienda Agreement. That certain contract for the Purchase and Sale of Kern River Water and Storage Rights (the "Olcese-La Hacienda

Agreement"), dated March 18, 1981, by and between Olcese Water District ("Olcese"), La Hacienda, George Nickel and Adele Nickel, recorded May 26, 1981, Book 5377, Page 349, Kern County, which purports to transfer into Olcese the Kern River water and storage rights set forth in subparagraphs A.4 and A.1.a-d above, but reserves to La Hacienda, George Nickel and Adele Nickel "Excess Water" rights, "Option Water" rights, and other "Residential Rights," including the use of the special powers of attorney referred to in subparagraph A.5 above to the extent necessary to exercise Nickel's reserved rights.

8. Water Transfer Agreement. That certain contract entered into on March 29, 1988, by and between George W. Nickel, Jr., Adele R. Nickel, Nickel Enterprises, Rio Bravo Resort, Inc., La Hacienda, Inc., Kern River Development Company, and Lekcin Management Company, Inc., as Transferors and Garces Water Company, Inc. and the McNear-Driver Trust, which transferred eighty-five percent (85%) of the Transferors' combined interest in the Kern River water and storage rights reserved to the Transferors in the Olcese-La Hacienda Agreement referred to in subparagraph A.7 above to the McNear-Driver Trust and the remaining fifteen percent (15%) of those reserved interests to Garces Water Company, Inc. The March 29, 1988 contract granted Garces the right of first refusal to purchase the Trust's interest in those assets upon a sale or disposition of any of them by the Trust.

9. Water Transfer Agreement: Amendment and Consent to Ownership Transfer. That certain contract between the McNear-Driver Trust and Nickel Family, LLC, George W. Nickel, Jr., Adele R. Nickel, Nickel Enterprises, La Hacienda, Inc. and Garces Water Company, Inc. in which the Ttrust stated its desire to transfer the interests it obtained from the Transferors in the Water Transfer Agreement referred to in subparagraph A.8 above to Nickel, LLC, and in which Garces consented to such a transfer.

10. January 1, 1997 Transfer Agreement. That certain transfer agreement dated January 1, 1997, by and between Dudley L. Drake, Trustee of the McNear-Driver Trust and Nickel, LLC, wherein the Trustee granted and conveyed to Nickel LLC the undivided eighty-five percent (85%) interest in the assets obtained by the Trust in the Water Transfer Agreement referred to in subparagraph A8 above.

B. STORAGE RIGHTS. Any and all Sellers' right, title and interest in any right to store water, in Isabella Reservoir including, but not limited to the following:

1. Storage Rights In Isabella Reservoir. The perpetual right of Sellers to rent from North Kern (which has a right to storage space in Isabella Reservoir pursuant to the 1962 Agreement referred to in subparagraph A.2 above and that certain Contract among the United State of America, North Kern, Buena Vista, Tulare Lake and Hacienda, dated October 23, 1964) storage space in Isabella Reservoir for storage of their Kern River water, including Excess Water, as such right is set forth on behalf of the Downstream Group in Paragraph 9 of the 1962 Storage Agreement (such right to rent storage space reserved by Sellers in the Reservation Agreement referred to in subparagraph A.4 currently entitles Sellers

to twenty percent (20%) of the storage capacity of Isabella Reservoir); and

2. 1964 Contract with the United States of America. Any and all of Sellers' right to store water pursuant to the Contract with the United States of America, Number 14-06-200-1360A; and

3. Settlement Agreements. Any and all of Sellers' right to store water pursuant to the Reservation Agreement referred to in subparagraph A.4and the Kern River Water Settlement Agreement and the Supplement to Kern River Water Settlement Agreement referred to in subparagraph A.3 above; and

4. Minimum Pool Agreement. Any and all of Sellers' right to store water pursuant to the Agreement for Establishment and Maintenance of Minimum Recreation Pool of 30,000 acre feet in Isabella Reservoir by and between Buena Vista, North Kern, Tulare Lake, Hacienda, and the County of Kern dated November 8, 1963; and

5. Allocation Agreement. Any and all of Sellers' right to store water pursuant to the Allocation Agreement referred to in subparagraph A.1 above assigned to Miller & Lux, Inc. pursuant to the Assignment referred to in subparagraph A.1.a above and confirmed and ratified by the Agreement dated September 30, 1966, referred to in subparagraph A.1.b above; and

6. Spreading Agreements. Any and all of Sellers' rights under the Olcese-La Hacienda Agreement, referred to in subparagraph A.6 above, to store water in the Bakersfield Spreading Area pursuant to the Agreement No. 77-07 W.B. and Agreements No. 78-12 W.B. and 81-76 W.B.; and

C. WATER EXCHANGE AGREEMENTS. Any and all of Sellers' right, title and interest to, exchange water and entitlements arising as a result of contracts executed by Sellers for deliveries of water pursuant to various water exchange agreements for water originating in Kern County regardless of where delivered or regardless of whether the water for which it is exchanged originated in Kern County, including, but not limited to, the following:

1. 1962 Agreement; Water Exchange Rights. Such rights and entitlements of Sellers as from time to time arise pursuant to the priority position of Sellers to substitute its Kern River water for Kern River water to be delivered by Buena Vista or North Kern to third parties, and to receive water being returned to such parties in payment of prior exchanges, to the extent Sellers have a credit balance of water to be delivered, as such priority is set forth in Paragraph 14 of the 1962 Agreement; and

2. Right To Purchase Option Water. The annual right of Nickel to purchase all Olcese water in the Bakersfield Spreading Area which is in excess of that needed by Olcese as determined by Sections 8 and 9 of the Olcese-La Hacienda Agreement referred to in subparagraph A.6 above ("Option Water"), on the terms and conditions set forth in Section 10 of the Olcese-La Hacienda Agreement; and

3. Hacienda Water Substitution Agreement. The right of Sellers to substitute Hacienda water for all or a portion of Buena Vista water in exchange for Buena Vista entitlement of State Aqueduct water pursuant to the Water Substitution Agreement dated November 14, 1972, by and between Buena Vista and Hacienda; and

4. Buena Vista-La Hacienda Water Exchange Agreement. The right of Nickel to exchange Option Water for the Kern River water of Buena Vista pursuant to Paragraph 3(f) of the Buena Vista-La Hacienda Agreement; and

5. California Aqueduct Water Exchange Agreement. The right of Sellers to receive California Aqueduct Water from the Kern County Water Agency Improvement District No. 4 (the "Agency") in return for amounts of Kern River water delivered by Sellers or their predecessors to the Agency, pursuant to the terms and conditions set forth in that certain Water Exchange Agreement dated April 17, 1982, by and between the Agency and Nickel; and

D. CONTRACT RIGHTS. Any and all Sellers' right, title and interest in any contract rights relating to the sale or exchange of water originating in Kern County, whether general intangibles or otherwise, including, but not limited to the following:

1. TLR-La Hacienda Agreement. The right of Sellers to the first opportunity to sell Kern River water to TLR for use on that real property commonly referred to as the "Hacienda Ranch" or within the Tulare Lake Basin area, as set forth in Section 2(h) of the Kern River Water and Storage Reservation Agreement referred to in subparagraph A.4 above, and the right of Sellers to payment from TLR as set forth in Section 2 thereof; and

E. TRANSPORTATION RIGHTS. Those certain miscellaneous rights of Sellers to utilize canals, ditches, or other water transportation methods or conveyances or delivery facilities, and pumping equipment such as is necessary to exercise the water conveyance, transportation, and delivery rights, storage rights, water rights, water exchange entitlements, contract rights or any other rights or entitlements Sellers may have now, including, but not limited to, the rights specified in the following agreements:

1. That certain Common Use Agreement Between Buena Vista Water Storage District and Hacienda Water District dated June 18, 1973; and

2. That certain Agreement of Sale referred to in subparagraph A.4 above, as more particularly set forth in Section 2(h) thereof, including the canal parallel to and one mile north of state Highway 46 as said canal is described therein; and

3. That certain 1964 Amendment to Miller-Haggin Agreement referred to in subparagraph A.1.a. above which provides for use of first-point conduit to transport second-point group water pursuant to Section 5 thereof; and

4. That certain Kern River Canal Extension Agreement dated October 14, 1964, by and between Buena Vista, Buena Vista Associates Incorporated, and Miller & Lux Incorporated as more particularly set forth in Section VI thereof; and

5. Any and all agreements that now exist with respect to or regarding the Johnson Ditch.

6. Certain Agreements. Any rights, to the extent owned by Sellers, under the following agreements:

a. That certain Goose Lake Canal Agreement dated May 13, 1979 by and between Buena Vista as first party, and La Hacienda and Twin Farms, Inc., as second parties, recorded June 5, 1979, Kern County, Book 5203, Page 487; and

b. That certain goose Lake Canal Allocation of Water and Operating Agreement dated May 13, 1979 by and between La Hacienda, and Nickel Enterprises and Twin Farms: and

c. That certain Agreement for Joint Use of Burhans Canal System and Introduction of Nondistrict Water Into Burhans Ranch Area dated May 14, 1979, by and between Nickel Enterprises and Lost Hills Water District.

F. EXCLUSIONS. The following rights held by Sellers shall not be included within the definition of Lower River Water Rights:

1. Riparian Rights. Any rights not discussed above that are legally defined as riparian rights under California law; and

2. Groundwater. The right to pump groundwater that naturally occurs beneath land owned by Sellers; and

3. Public Agency Water. The right to obtain water from any Public Agency exclusively for use on land owned or leased by Sellers within that agency's service area.

RECORDING REQUESTED BY:
CHICAGO TITLE COMPANY

WHEN RECORDED MAIL TO
AND MAIL TAX STATEMENTS TO:

NAME	**KERN COUNTY WATER AGENCY** Attention: JOHN STOVALL
ADDRESS	P.O. BOX 58
CITY	BAKERSFIELD
STATE & ZIP	CALIFORNIA 93302-0058

QUITCLAIM DEED

TITLE NO. **ESCROW. NO. 673298-MM** **APN:**

THE UNDERSIGNED GRANTOR(s) DECLARE(s)
DOCUMENTARY TRANSFER TAX is $ -0- (No Consideration) CITY TAX $_____
☐ Computed on full value of property conveyed, or ☐ Computed on full value less value of liens or encumbrances remaining at time of sale,
☐ Unincorporated area: ☐ City of Bakersfield, and

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, NICKEL FAMILY, LLC, a California limited liability company hereby remise, release and forever quitclaim to KERN COUNTY WATER AGENCY, a California public agency, receipt of which is its interest in the real property described in Exhibit B attached hereto and incorporated herein by this reference, together with all improvements thereon and all easements, rights of way, and other rights appurtenant thereto, subject, however, to the lien of non-delinquent real property taxes and assessments and covenants, conditions, restrictions easements, rights-of-way and servitudes of record in the County of Kern, State of California.

See Attached Exhibit B

Dated_____, 2001 _____

_____

(ALL SIGNATURES MUST BE ACKNOWLEDGED)

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

STATE OF CALIFORNIA)
) ss.
COUNTY OF KERN)

On _____, before me, _____,
Date — Name and Title of Officer (e.g. "Jane Doe, Notary Public")

personally appeared _____,
Name of Signers

☐ personally known to me – **OR** – ☐ proved to me on the basis of satisfactory evidence to be the persons whose names are subscribed to the within instrument and acknowledged to me that they executed the same in their authorized capacities, and that by their signatures on the instrument the persons, or the entity upon behalf of which the persons acted, executed the instrument.

WITNESS my hand and official seal.

_____
Signature of Notary Public

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY(IES) CLAIMED BY SIGNER(S)

☐ Individual
☐ Corporate Officer

_____
Titles

☐ Partner(s) ☐ Limited ☐ General
☐ Attorney-In-Fact
☐ Trustee(s)
☐ Guardian/Conservator
☐ Other: _____

Signer is Representing:
Name of Persons or Entity(ies)

_____

_____

DESCRIPTION OF ATTACHED DOCUMENT

_____
Title or Type of Document

_____
Number of Pages

_____
Date of Document

_____
Signers Other Than Named Above

EXHIBIT B

TO QUITCLAIM DEED FROM NICKEL FAMILY, LLC TO KERN COUNTY WATER AGENCY

The real property transferred pursuant to this Quitclaim Deed consists of the undivided interests held by Grantor, NICKEL FAMILY, LLC in and to the real property described in EXHIBIT B-1 attached hereto.

EXHIBIT B-1

A. CASTRO DITCH WATER RIGHTS. Any and all of Nickel's right, title and interest now owned in the so-called Castro Right to divert water from the Kern River evidenced by various instruments, conveyances, contracts and agreements, including, but not limited to, the following:

1. That certain Indenture dated April 5, 1894, recorded April 6, 1894 Kern County, Book 54, Deeds, Pages 30 and 31, by which H.H. Fish, George Daggett, and H.A. Blodget conveyed an undivided 1/18th interest in the Castro Ditch and water right to James M. Keith; and

2. That certain Indenture dated April 5, 1894, recorded April 6, 1894, Kern County, Book 54, Deeds, Pages 32 and 33, by which H.H. Fish, George Daggett, and H.A. Blodget conveyed an undivided 1/9th interest in the Castro Ditch and water right to S.W. Wible; and

3. That certain Indenture dated May 20, 1896, recorded May 20, 1896, Kern County, Book 60, Deeds, Pages 640 and 641, by which Tomas Castro and Manual Castro conveyed an undivided 2/18ths part of the Castro Ditch and all the branches thereof and of the water and water rights appurtenant thereto to William S. Tevis; and

4. That certain Indenture dated May 20, 1896, recorded May 22, 1896 Kern County, Book 60, Deeds, Pages 644 and 645, by which W.L. Dixon and Florence G. Dixon, his wife, conveyed an undivided 2/18ths part of the Castro Ditch and all the branches thereof and of the water and water rights appurtenant thereto to William S. Tevis; and

5. That certain Agreement dated March 31, 1905, which provides for the right to appropriate and divert water from the Kern River at the head of Stine Canal Extension up to 20 cfs; and

6. That certain Corporation Quitclaim Deed dated February 4, 1982, recorded February 25, 1982, Kern County, Book 5440, Pages 2241-2242, by which Miller & Lux, Inc., remised, released and quitclaimed to La Hacienda, Inc., Assessors Parcel Number 700-980-24-00-8; and

7. That certain Corporation Quitclaim Deed recorded February 25, 1982, Kern County, Book 5440, Pages 2243-2244, by which Miller & Lux, Inc., remised, released and quitclaimed to La Hacienda, Inc., Assessors Parcel Number 700-980-25-00-1; and

8. That certain Quitclaim Deed dated November 25, 1986, by which La Hacienda, Inc., remised, released and quitclaimed to the City of Bakersfield the physical facilities of the Castro Ditch excepting all Kern River Rights appurtenant to eight shares of stock in the Castro Ditch; and

9. Any other or additional right, title or interest in or to the Castro Ditch and water right now owned by Nickel.

B. JOHNSON DITCH WATER RIGHTS. The so-called Johnson Right to divert water from the Kern River of which Nickel owns a part as a result of various instruments, conveyances, contracts, and agreements, including, but not limited to, the following:

1. That certain Corporation Quitclaim Deed dated February 4, 1982, recorded February 25, 1982, Kern County, Book 5440, Pages 2245-2246, by which Miller & Lux, Inc., remised, released and quitclaimed to La Hacienda, Inc., Assessors Parcel Number 700-980-26-00-4; and

2. Any other or additional right, title or interest in or to the Johnson Ditch and water right now owned by Nickel.

RECORDING REQUESTED BY:
CHICAGO TITLE COMPANY

WHEN RECORDED MAIL TO
AND MAIL TAX STATEMENTS TO:

NAME **OLCESE WATER DISTRICT**
Attention: Board of Directors
ADDRESS P.O. BOX 651

CITY BAKERSFIELD

STATE & ZIP CALIFORNIA 93302

QUITCLAIM DEED

TITLE NO. **ESCROW. NO. 673298-MM** **APN:**

THE UNDERSIGNED GRANTOR(s) DECLARE(s)
DOCUMENTARY TRANSFER TAX is $ -0- (No Consideration) CITY TAX $_____
☐ Computed on full value of property conveyed, or ☐ Computed on full value less value of liens or encumbrances remaining at time of sale,
☐ Unincorporated area: ☐ City of Bakersfield, and

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, KERN COUNTY WATER AGENCY, a California public agency, hereby remise, release and forever quitclaim to OLCESE WATER DISTRICT, a California public agency, receipt of which is its interest in the real property described in Exhibit C attached hereto and incorporated herein by this reference, together with all improvements thereon and all easements, rights of way, and other rights appurtenant thereto, subject, however, to the lien of non-delinquent real property taxes and assessments and covenants, conditions, restrictions easements, rights-of-way and servitudes of record in the County of Kern, State of California.

See Attached Exhibit C

Dated_____, 2001 _____

_____

(ALL SIGNATURES MUST BE ACKNOWLEDGED)

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

STATE OF CALIFORNIA)
) ss.
COUNTY OF KERN)

On _____, before me, _____,
Date — Name and Title of Officer (e.g. "Jane Doe, Notary Public")

personally appeared _____,
Name of Signers

☐ personally known to me – **OR** – ☐ proved to me on the basis of satisfactory evidence to be the persons whose names are subscribed to the within instrument and acknowledged to me that they executed the same in their authorized capacities, and that by their signatures on the instrument the persons, or the entity upon behalf of which the persons acted, executed the instrument.

WITNESS my hand and official seal.

_____
Signature of Notary Public

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY(IES) CLAIMED BY SIGNER(S)

☐ Individual
☐ Corporate Officer

_____
Titles

☐ Partner(s) ☐ Limited ☐ General
☐ Attorney-In-Fact
☐ Trustee(s)
☐ Guardian/Conservator
☐ Other: _____

Signer is Representing:
Name of Persons or Entity(ies)

_____

_____

DESCRIPTION OF ATTACHED DOCUMENT

_____
Title or Type of Document

_____
Number of Pages

_____
Date of Document

_____
Signers Other Than Named Above

EXHIBIT C

TO QUITCLAIM DEED FROM KERN COUNTY WATER AGENCY TO OLCESE WATER DISTRICT

The real property transferred pursuant to this Quitclaim Deed consists of the undivided interests held by Grantor, KERN COUNTY WATER AGENCY in and to the real property described in EXHIBIT C-1 attached hereto.

EXHIBIT C-1

A. CARMEL WATER RIGHT. The so-called Carmel Water right to 3.956% of Kern River water allocated to the Miller-Haggin First Parties of which Nickel's predecessors in interest owned a part as a result of various instruments, conveyances, contracts, and agreements as follows:

1. That certain Agreement dated October 24, 1945, between Buena Vista Water Storage District as first party, and C.E. Houchin and George L. Bradford, co-partners doing business as Carmel Cattle Company, as second party, recorded December 1, 1945, Kern County, Book 1290, Page 176, by which the second party reserved said Carmel Water Right; and

2. That certain Deed dated February 23, 1956, in which Kathryn Houchin, Francis L. Houchin, and Anna Lumis, as executors of the estate of C.E. Houchin, deceased, conveyed to Miller & Lux, Inc. said Carmel Water Right; and

3. That certain Deed dated February 24, 1956, recorded February 1956, Kern County, Book 2567, Page 0527, document no. 11922, in which Miller & Lux, Inc. conveyed to C. Ray Robinson and Pauline Robinson, husband and wife, an undivided 15% of said Carmel Water Right; and

4. That certain Quitclaim Deed Agreement dated August 31, 1973, recorded September 24, 1973, Kern County, Book 4805(?), Page 812(?) by which C. Ray Robinson, as grantor and as successor in interest to Pauline Robinson in said Deed to Mr. & Mrs. Robinson, thereafter transferred all his then remaining 12.75% undivided interest in and right to either water or income in said Carmel Water Right to George Nickel; and

5. That certain Agreement by and between Nickel doing business as Kern River Delta Farms, and Olcese Water District, dated February 27, 1976, to which said 12.75% undivided interest of George Nickel in said Carmel Water Right is subject, pursuant to Sections 1 and 5 thereof.

RECORDING REQUESTED BY:
CHICAGO TITLE COMPANY

WHEN RECORDED MAIL TO
AND MAIL TAX STATEMENTS TO:

NAME NICKEL FAMILY, LLC
Attention: James Nickel, President
ADDRESS P.O. BOX 60679

CITY BAKERSFIELD

STATE & ZIP CALIFORNIA 93386-0679

QUITCLAIM DEED

TITLE NO. **ESCROW. NO. 673298-MM** **APN:**

THE UNDERSIGNED GRANTOR(s) DECLARE(s)
DOCUMENTARY TRANSFER TAX is $ -0- (No Consideration) CITY TAX $_____
☐ Computed on full value of property conveyed, or ☐ Computed on full value less value of liens or encumbrances remaining at time of sale,
☐ Unincorporated area: ☐ City of Bakersfield, and

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, KERN COUNTY WATER AGENCY, a California public agency, hereby remise, release and forever quitclaim to NICKEL FAMILY, LLC, a California limited liability company, receipt of which is its interest in the real property described in Exhibit E attached hereto and incorporated herein by this reference, together with all improvements thereon and all easements, rights of way, and other rights appurtenant thereto, subject, however, to the lien of non-delinquent real property taxes and assessments and covenants, conditions, restrictions easements, rights-of-way and servitudes of record in the County of Kern, State of California.

See Attached Exhibit E

Dated_____, 2001 _____

_____

(ALL SIGNATURES MUST BE ACKNOWLEDGED)

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

STATE OF CALIFORNIA)
) ss.
COUNTY OF)

On _____, before me, _____,
Date — Name and Title of Officer (e.g. "Jane Doe, Notary Public")

personally appeared _____,
Name of Signers

☐ personally known to me – **OR** – ☐ proved to me on the basis of satisfactory evidence to be the persons whose names are subscribed to the within instrument and acknowledged to me that they executed the same in their authorized capacities, and that by their signatures on the instrument the persons, or the entity upon behalf of which the persons acted, executed the instrument.

WITNESS my hand and official seal.

_____
Signature of Notary Public

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY(IES) CLAIMED BY SIGNER(S)

☐ Individual
☐ Corporate Officer

_____
Titles

☐ Partner(s) ☐ Limited ☐ General
☐ Attorney-In-Fact
☐ Trustee(s)
☐ Guardian/Conservator
☐ Other: _____

Signer is Representing:
Name of Persons or Entity(ies)

_____

_____

DESCRIPTION OF ATTACHED DOCUMENT

_____
Title or Type of Document

_____
Number of Pages

_____
Date of Document

_____
Signers Other Than Named Above

Exhibit D

Power Charge = $/KWH X Avg. KWH/AF X 10,000 AF

1. $/KWH is calculated by using the PG&E, AG 5b rate or future equivalent determined prior to May 1 of each year. Currently AG 5b includes demand charges and electric energy charges for on peak, off peak, and partial peak and California Energy Commision taxes. The 10,000 af is assumed to be pumped at a rate of 1,000 AF per month from March 1 to December 31. The average daily rate is 33 AF. Pumping is assumed to occur throughout the entire 24 hour period for each day of the month.

2. The following table will be used to determine the KWH/AF. Average Depth to Groundwater is a value calculated from the measurements of wells in the Pioneer Project during the spring of each year. This data is compiled for the Kern Fan Monitoring Committee.

Spring Average Depth to Groundwater on the Pioneer Project[1]	Average KWH/AF
10	194
20	211
30	229
40	246
50	264
60	281
70	299
80	317
90	334
100	352
110	369
120	387
130	405
140	422
150	440
160	457
170	475
180	493
190	510
200	528
210	545
220	563
230	581
240	598
250	616
260	633
270	651
280	668
290	686
300	704

Example: If groundwater levels are 102 feet.

$224,005 = $0.0631/KWH X 355 KWH/AF X 10,000 AF

[1]If average depth to groundwater drops below 300 feet the KWH/AF will be recalculated.

Summary of Power Costs
Nickel 10,000 AF
2001

Month	AF	KWH	Amount	$/KWH
March	1,000	355,000	$16,972.54	0.05
April	1,000	355,000	16,913.30	0.05
May	1,000	355,000	26,145.30	0.07
June	1,000	355,000	25,853.10	0.07
July	1,000	355,000	26,145.30	0.07
August	1,000	355,000	26,145.30	0.07
September	1,000	355,000	25,853.10	0.07
October	1,000	355,000	26,145.30	0.07
November	1,000	355,000	16,913.30	0.05
December	1,000	355,000	16,972.54	0.05
Total	10,000	3,550,000	$224,059.08	

Average $/KWH..... $0.06

KERN COUNTY WATER AGENCY

POWER BILLING CALCULATION

LOCATION:	Nickel 10,000 AF	*PG&E SCHEDULE No.*	AG-5B	*PERIOD*	B
FACILITY:	Pioneer Project	*MONTH of*	Mar 2001	*CODE*	3

		Usage	*Rate*	*TOTAL $*
CUSTOMER CHARGE:				0.00
METER CHARGE:				0.00
DEMAND CHARGES PER (KW) :		*KW*	*$/KW*	
	per KW of maximum-peak-period demand	564	0.00	0.00
(From PG&E)	per KW of maximum-part-peak-period demand	0	0.00	0.00
	per KW of off-peak-period seasonal billing demand			
	(3 wells - 250 HP @ .74 KW/hp = maximum demand of 555 K	555	4.40	2,442.00

ELECTRIC ENERGY CHARGES:

		Multiplier	*KWH*	*$/KWH*	*Amount $*	
Total KWH			355,000			
Base Energy Charges:						
	On Peak	0.0%	0	0.00000	0.00	
(From PG&E)	Partial Peak	38.4%	136,465	0.04661	6,360.63	
	Off Peak	61.6%	218,535	0.03706	8,098.91	
TOTAL ELECTRIC ENERGY CHARGES:						14,459.54
					Sub Total	$16,901.54

TAXES	*KWH*	*$/KWH*	
California Energy Commission	355,000	0.00020	71.00
	TOTAL BILLING		$16,972.54
	TOTAL NET BILLING		**$16,972.54**

KERN COUNTY WATER AGENCY

POWER BILLING CALCULATION

LOCATION:	Nickel 10,000 AF	*PG&E SCHEDULE No.*	AG-5B	*PERIOD*	B
FACILITY:	Pioneer Project	*MONTH of*	Apr 2001	*CODE*	4

			Usage	*Rate*	*TOTAL $*
USTOMER CHARGE:					0.00
ETER CHARGE:					0.00
EMAND CHARGES PER (KW) :			*KW*	*$/KW*	
	per KW of maximum-peak-period demand		564	0.00	0.00
From PG&E)	per KW of maximum-part-peak-period demand		0	0.00	0.00
	per KW of off-peak-period seasonal billing demand				
	(3 wells - 250 HP @ .74 KW/hp = maximum demand of 555 K		555	4.40	2,442.00

LECTRIC ENERGY CHARGES:

		Multiplier	*KWH*	*$/KWH*	*Amount $*	
otal KWH			355,000			
Base Energy Charges:						
	On Peak	0.0%	0	0.00000	0.00	
From PG&E)	Partial Peak	36.7%	130,262	0.04661	6,071.51	
	Off Peak	63.3%	224,738	0.03706	8,328.79	
OTAL ELECTRIC ENERGY CHARGES:						14,400.30
					Sub Total	$16,842.30

	KWH	*$/KWH*	
AXES			
California Energy Commission	355,000	0.00020	71.00
	TOTAL BILLING		$16,913.30
	TOTAL NET BILLING		**$16,913.30**

KERN COUNTY WATER AGENCY

POWER BILLING CALCULATION

LOCATION:	Nickel 10,000 AF	*PG&E SCHEDULE No.*	AG-5B	*PERIOD*	A
FACILITY:	Pioneer Project	*MONTH of*	May 2001	*CODE*	5

		Usage	*Rate*	*TOTAL $*
JSTOMER CHARGE:				0.00
ETER CHARGE:				0.00
EMAND CHARGES PER (KW) :		*KW*	*$/KW*	
	per KW of maximum-peak-period demand	564	0.00	0.00
From PG&E)	per KW of maximum-part-peak-period demand	555	2.70	1,498.50
	per KW of off-peak-period seasonal billing demand			
	(3 wells - 250 HP @ .74 KW/hp = maximum demand of 555 K	555	6.55	3,635.25

LECTRIC ENERGY CHARGES:

		Multiplier	*KWH*	*$/KWH*	*Amount $*	
otal KWH			355,000			
Base Energy Charges:						
	On Peak	17.7%	62,984	0.14294	9,002.93	
From PG&E)	Partial Peak	0.0%	0	0.00000	0.00	
	Off Peak	82.3%	292,016	0.04086	11,937.61	
OTAL ELECTRIC ENERGY CHARGES:						20,940.55
					Sub Total	$26,074.30

	KWH	*$/KWH*	
AXES			
California Energy Commission	355,000	0.00020	71.00
	TOTAL BILLING		$26,145.30
	TOTAL NET BILLING		**$26,145.30**

KERN COUNTY WATER AGENCY

POWER BILLING CALCULATION

LOCATION:	**Nickel 10,000 AF**	*PG&E SCHEDULE No.*	**AG-5B**	*PERIOD*	**A**
FACILITY:	**Pioneer Project**	*MONTH of*	**Jun 2001**	*CODE*	**6**

		Usage	Rate		TOTAL $
CUSTOMER CHARGE:					0.00
METER CHARGE:					0.00
DEMAND CHARGES PER (KW) :		KW	$/KW		
	per KW of maximum-peak-period demand	564	0.00		0.00
(From PG&E)	per KW of maximum-part-peak-period demand	555	2.70		1,498.50
	per KW of off-peak-period seasonal billing demand				
	(3 wells - 250 HP @ .74 KW/hp = maximum demand of 555 K	555	6.55		3,635.25

ELECTRIC ENERGY CHARGES:

		Multiplier	KWH	$/KWH	Amount $	
Total KWH			355,000			
Base Energy Charges:						
	On Peak	16.9%	60,121	0.14294	8,593.70	
(From PG&E)	Partial Peak	0.0%	0	0.00000	0.00	
	Off Peak	83.1%	294,879	0.04088	12,054.65	
TOTAL ELECTRIC ENERGY CHARGES:						20,648.35
					Sub Total	$25,782.10

	KWH	$/KWH	
TAXES			
California Energy Commission	355,000	0.00020	71.00
	TOTAL BILLING		$25,853.10
	TOTAL NET BILLING		**$25,853.10**

KERN COUNTY WATER AGENCY

POWER BILLING CALCULATION

LOCATION:	Nickel 10,000 AF	*PG&E SCHEDULE No.*	AG-5B	*PERIOD*	A
FACILITY:	Pioneer Project	*MONTH of*	Jul 2001	*CODE*	7

		Usage	*Rate*	*TOTAL $*
USTOMER CHARGE:				0.00
IETER CHARGE:				0.00
)EMAND CHARGES PER (KW) :		*KW*	*$/KW*	
	per KW of maximum-peak-period demand	564	0.00	0.00
(From PG&E)	per KW of maximum-part-peak-period demand	555	2.70	1,498.50
	per KW of off-peak-period seasonal billing demand (3 wells - 250 HP @ .74 KW/hp = maximum demand of 555 K	555	6.55	3,635.25

ELECTRIC ENERGY CHARGES:

		Multiplier	*KWH*	*$/KWH*	*Amount $*	
'otal KWH			355,000			
Base Energy Charges:						
	On Peak	17.7%	62,984	0.14294	9,002.93	
(From PG&E)	Partial Peak	0.0%	0	0.00000	0.00	
	Off Peak	82.3%	292,016	0.04088	11,937.61	
TOTAL ELECTRIC ENERGY CHARGES:						20,940.55
					Sub Total	$26,074.30

TAXES	*KWH*	*$/KWH*	
California Energy Commission	355,000	0.00020	71.00
	TOTAL BILLING		$26,145.30
	TOTAL NET BILLING		**$26,145.30**

KERN COUNTY WATER AGENCY

POWER BILLING CALCULATION

LOCATION:	Nickel 10,000 AF	*PG&E SCHEDULE No.*	AG-5B	*PERIOD*	A
FACILITY:	Pioneer Project	*MONTH of*	Aug 2001	*CODE*	8

		Usage	*Rate*	*TOTAL $*
CUSTOMER CHARGE:				0.00
METER CHARGE:				0.00
DEMAND CHARGES PER (KW) :		*KW*	*$/KW*	
	per KW of maximum-peak-period demand	564	0.00	0.00
(From PG&E)	per KW of maximum-part-peak-period demand	555	2.70	1,498.50
	per KW of off-peak-period seasonal billing demand (3 wells - 250 HP @ .74 KW/hp = maximum demand of 555 K	555	6.55	3,635.25

ELECTRIC ENERGY CHARGES:

		Multiplier	*KWH*	*$/KWH*	*Amount $*
Total KWH			355,000		
Base Energy Charges:					
	On Peak	17.7%	62,984	0.14294	9,002.93
(From PG&E)	Partial Peak	0.0%	0	0.00000	0.00
	Off Peak	82.3%	292,016	0.04088	11,937.61

TOTAL ELECTRIC ENERGY CHARGES: 20,940.55

Sub Total $26,074.30

TAXES	*KWH*	*$/KWH*	
California Energy Commission	355,000	0.00020	71.00
	TOTAL BILLING		$26,145.30
	TOTAL NET BILLING		**$26,145.30**

KERN COUNTY WATER AGENCY

POWER BILLING CALCULATION

LOCATION:	Nickel 10,000 AF	*PG&E SCHEDULE No.*	AG-5B	*PERIOD*	A
FACILITY:	Pioneer Project	*MONTH of*	Sep 2001	*CODE*	9

		Usage	*Rate*	*TOTAL $*
JSTOMER CHARGE:				0.00
ETER CHARGE:				0.00
EMAND CHARGES PER (KW) :		*KW*	*$/KW*	
	per KW of maximum-peak-period demand	564	0.00	0.00
rom PG&E)	per KW of maximum-part-peak-period demand	555	2.70	1,498.50
	per KW of off-peak-period seasonal billing demand (3 wells - 250 HP @ .74 KW/hp = maximum demand of 555 K	555	6.55	3,635.25

LECTRIC ENERGY CHARGES:

		Multiplier	*KWH*	*$/KWH*	*Amount $*	
otal KWH			355,000			
Base Energy Charges:						
	On Peak	16.9%	60,121	0.14294	8,593.70	
From PG&E)	Partial Peak	0.0%	0	0.00000	0.00	
	Off Peak	83.1%	294,879	0.04088	12,054.65	
OTAL ELECTRIC ENERGY CHARGES:						20,648.35
					Sub Total	$25,782.10

	KWH	*$/KWH*	
AXES			
California Energy Commission	355,000	0.00020	71.00
	TOTAL BILLING		$25,853.10
	TOTAL NET BILLING		**$25,853.10**

KERN COUNTY WATER AGENCY

POWER BILLING CALCULATION

LOCATION:	Nickel 10,000 AF	*PG&E SCHEDULE No.*	AG-5B	*PERIOD*	A
FACILITY:	Pioneer Project	*MONTH of*	Oct 2001	*CODE*	10

		Usage	*Rate*	*TOTAL $*
USTOMER CHARGE:				0.00
IETER CHARGE:				0.00
EMAND CHARGES PER (KW) :		*KW*	*$/KW*	
	per KW of maximum-peak-period demand	564	0.00	0.00
From PG&E)	per KW of maximum-part-peak-period demand	555	2.70	1,498.50
	per KW of off-peak-period seasonal billing demand			
	(3 wells - 250 HP @ .74 KW/hp = maximum demand of 555 K	555	6.55	3,635.25

ELECTRIC ENERGY CHARGES:

		Multiplier	*KWH*	*$/KWH*	*Amount $*	
Total KWH			355,000			
Base Energy Charges:						
	On Peak	17.7%	62,984	0.14294	9,002.93	
(From PG&E)	Partial Peak	0.0%	0	0.00000	0.00	
	Off Peak	82.3%	292,016	0.04088	11,937.61	
TOTAL ELECTRIC ENERGY CHARGES:						20,940.55
					Sub Total	$26,074.30

TAXES	*KWH*	*$/KWH*	
California Energy Commission	355,000	0.00020	71.00
	TOTAL BILLING		$26,145.30
	TOTAL NET BILLING		**$26,145.30**

KERN COUNTY WATER AGENCY

POWER BILLING CALCULATION

LOCATION:	Nickel 10,000 AF	*PG&E SCHEDULE No.*	AG-5B	*PERIOD*	B
FACILITY:	Pioneer Project	*MONTH of*	Nov 2001	*CODE*	11

		Usage	*Rate*	*TOTAL $*
:USTOMER CHARGE:				0.00
/ETER CHARGE:				0.00
)EMAND CHARGES PER (KW) :		*KW*	*$/KW*	
	per KW of maximum-peak-period demand	564	0.00	0.00
(From PG&E)	per KW of maximum-part-peak-period demand	0	0.00	0.00
	per KW of off-peak-period seasonal billing demand			
	(3 wells - 250 HP @ .74 KW/hp = maximum demand of 555 K	555	4.40	2,442.00

:LECTRIC ENERGY CHARGES:

		Multiplier	*KWH*	*$/KWH*	*Amount $*
'otal KWH			355,000		
Base Energy Charges:					
	On Peak	0.0%	0	0.00000	0.00
(From PG&E)	Partial Peak	36.7%	130,262	0.04661	6,071.51
	Off Peak	63.3%	224,738	0.03706	8,328.79

TOTAL ELECTRIC ENERGY CHARGES: 14,400.30

Sub Total $16,842.30

TAXES	*KWH*	*$/KWH*	
California Energy Commission	355,000	0.00020	71.00
	TOTAL BILLING		$16,913.30
	TOTAL NET BILLING		**$16,913.30**

KERN COUNTY WATER AGENCY

POWER BILLING CALCULATION

LOCATION:	Nickel 10,000 AF	*PG&E SCHEDULE No.*	AG-5B	*PERIOD*	B
FACILITY:	Pioneer Project	*MONTH of*	Dec 2001	*CODE*	12

		Usage	*Rate*	*TOTAL $*
JSTOMER CHARGE:				0.00
ETER CHARGE:				0.00
EMAND CHARGES PER (KW) :		*KW*	*$/KW*	
	per KW of maximum-peak-period demand	564	0.00	0.00
From PG&E)	per KW of maximum-part-peak-period demand	0	0.00	0.00
	per KW of off-peak-period seasonal billing demand			
	(3 wells - 250 HP @ .74 KW/hp = maximum demand of 555 K	555	4.40	2,442.00

:LECTRIC ENERGY CHARGES:

		Multiplier	*KWH*	*$/KWH*	*Amount $*	
Total KWH			355,000			
Base Energy Charges:						
	On Peak	0.0%	0	0.00000	0.00	
(From PG&E)	Partial Peak	38.4%	136,465	0.04661	6,360.63	
	Off Peak	61.6%	218,535	0.03706	8,098.91	
TOTAL ELECTRIC ENERGY CHARGES:						14,459.54
					Sub Total	$16,901.54

TAXES	*KWH*	*$/KWH*	
California Energy Commission	355,000	0.00020	71.00
	TOTAL BILLING		$16,972.54
	TOTAL NET BILLING		**$16,972.54**

EXHIBIT E

TO QUITCLAIM DEED FROM KERN COUNTY WATER AGENCY TO NICKEL FAMILY, LLC

The real property transferred pursuant to this Quitclaim Deed consists of the undivided interests held by Grantor, KERN COUNTY WATER AGENCY in and to the real property described in EXHIBIT E-1 attached hereto.

EXHIBIT E-1

A. WATER INVENTORIES:

1. The Buena Vista Water Storage District forty thousand (40,000) acre-foot inventory;

2. The North Kern Water Storage District five thousand eight hundred eighty-two (5,882) acre-foot inventory;

3. The Preconsolidation fourteen thousand one hundred seventy (14,170) acre-foot inventory;

4. The five thousand (5,000) acre-foot payback water from Kern County Water Agency Improvement District No. 4.

RECORDING REQUESTED BY:
CHICAGO TITLE COMPANY

WHEN RECORDED MAIL TO
AND MAIL TAX STATEMENTS TO:

NAME **NICKEL FAMILY, LLC**
Attention: James Nickel, President
ADDRESS P.O. BOX 60679

CITY BAKERSFIELD

STATE & ZIP CALIFORNIA 93386-0679

QUITCLAIM DEED

TITLE NO. **ESCROW. NO. 673298-MM** **APN:**

THE UNDERSIGNED GRANTOR(s) DECLARE(s)
DOCUMENTARY TRANSFER TAX is $ -0- (No Consideration) CITY TAX $_____
☐ Computed on full value of property conveyed, or ☐ Computed on full value less value of liens or encumbrances remaining at time of sale,
☐ Unincorporated area: ☐ City of Bakersfield, and

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, KERN COUNTY WATER AGENCY, a California public agency, hereby remise, release and forever quitclaim to NICKEL FAMILY, LLC, a California limited liability company, receipt of which is its interest in the real property described in Exhibit G attached hereto and incorporated herein by this reference, together with all improvements thereon and all easements, rights of way, and other rights appurtenant thereto, subject, however, to the lien of non-delinquent real property taxes and assessments and covenants, conditions, restrictions easements, rights-of-way and servitudes of record in the County of Kern, State of California.

See Attached Exhibit G

Dated_____, 2001 _____

_____

(ALL SIGNATURES MUST BE ACKNOWLEDGED)

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

STATE OF CALIFORNIA)
) ss.
COUNTY OF KERN)

On _____, before me, _____,
Date — Name and Title of Officer (e.g. "Jane Doe, Notary Public")

personally appeared _____,
Name of Signers

☐ personally known to me – **OR** – ☐ proved to me on the basis of satisfactory evidence to be the persons whose names are subscribed to the within instrument and acknowledged to me that they executed the same in their authorized capacities, and that by their signatures on the instrument the persons, or the entity upon behalf of which the persons acted, executed the instrument.

WITNESS my hand and official seal.

_____
Signature of Notary Public

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY(IES) CLAIMED BY SIGNER(S)

☐ Individual
☐ Corporate Officer

_____
Titles

☐ Partner(s) ☐ Limited ☐ General
☐ Attorney-In-Fact
☐ Trustee(s)
☐ Guardian/Conservator
☐ Other: _____

Signer is Representing:
Name of Persons or Entity(ies)

_____

_____

DESCRIPTION OF ATTACHED DOCUMENT

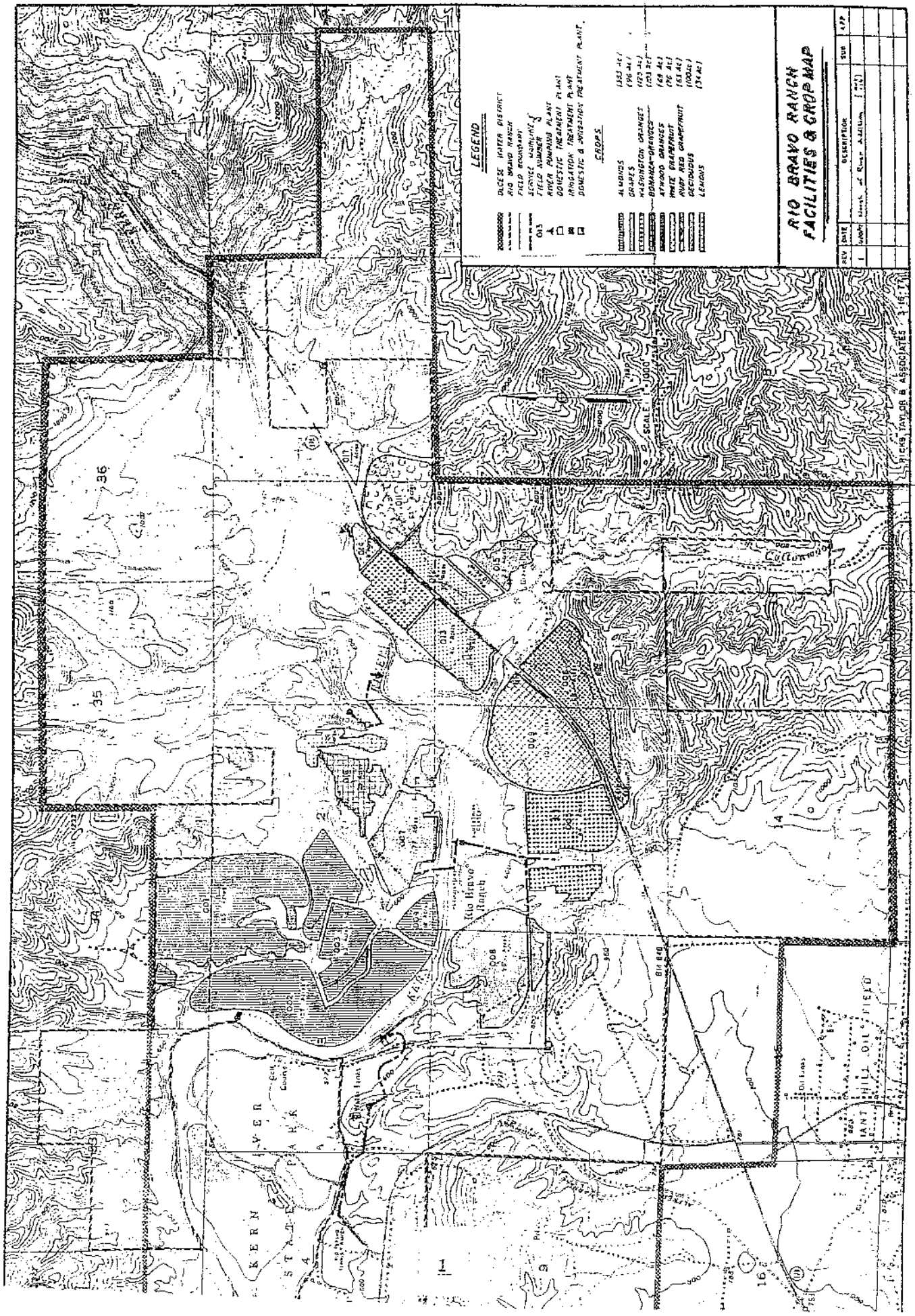
_____
Title or Type of Document

_____
Number of Pages

_____
Date of Document

_____
Signers Other Than Named Above

Exhibit F - Map of Rio Bravo Ranch



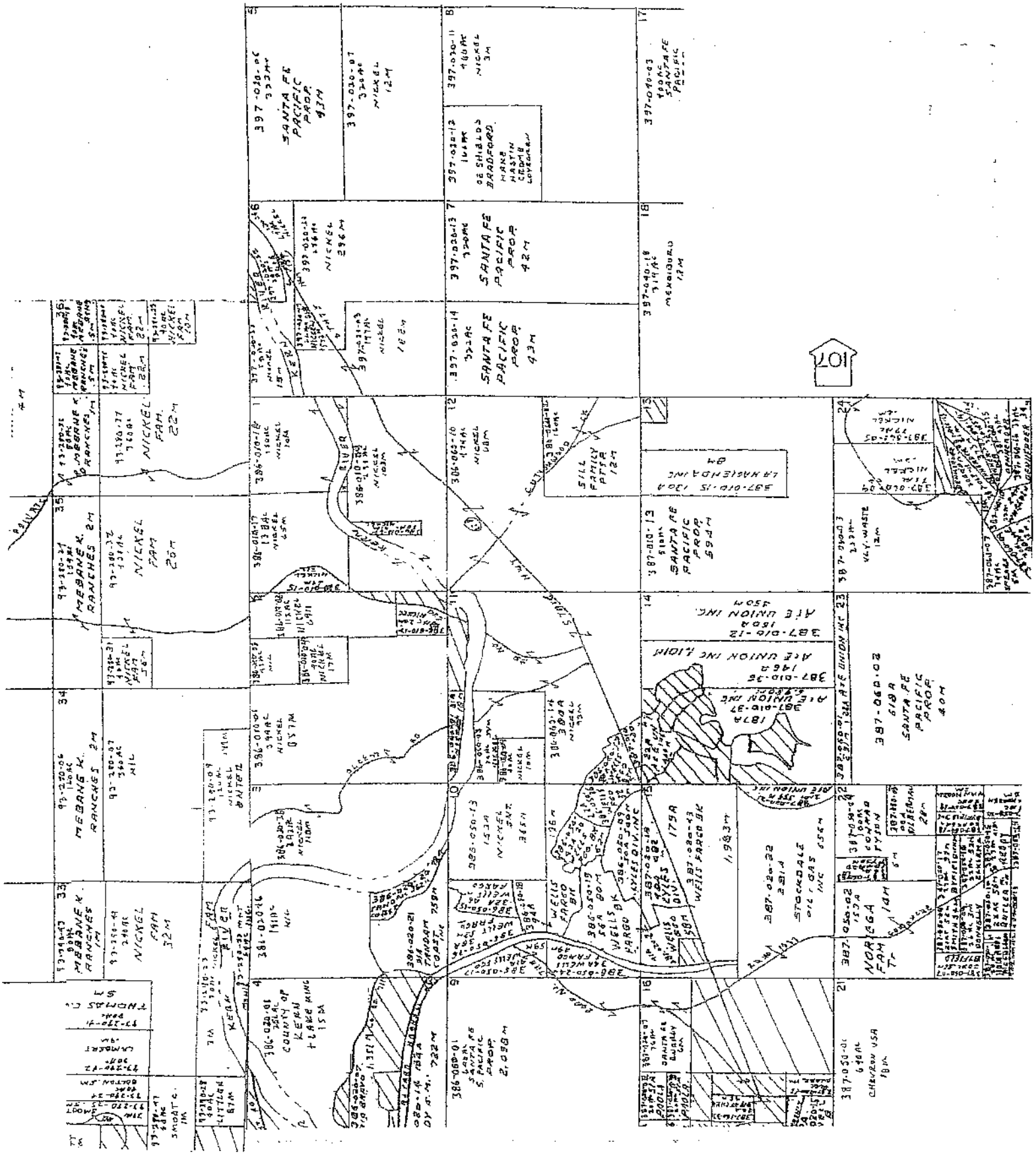

SANTA FE PACIFIC PROP. 43M
SANTA FE PACIFIC PROP. 42M
SANTA FE PACIFIC PROP. 43M
SANTA FE PACIFIC PROP. 594M
SANTA FE PACIFIC PROP. 40M
MEBANE K. RANCHES 2M
NICKEL FAM. 22M
NICKEL FAM. 25M
NICKEL FAM. 32M
NORIEGA FAM. 14M
WELLS FARGO BK
STOCKDALE OIL & GAS INC
CHEVRON USA
107

EXHIBIT G

TO QUITCLAIM DEED FROM KERN COUNTY WATER AGENCY TO NICKEL FAMILY, LLC

The real property transferred pursuant to this Quitclaim Deed consists of the undivided interests held by Grantor, KERN COUNTY WATER AGENCY in and to the real property described in EXHIBIT G-1 attached hereto.

EXHIBIT G-1

On or about September 1, 2000, Garces Water Company, Inc., a California corporation, hereinafter referred to as "Garces" granted to the Kern County Water Agency, a California public agency, hereinafter referred to as the "Agency", various property rights described in the Grant Deed from Garces to the Agency, which is attached hereto and incorporated herein by reference. This Grant Deed was recorded in the Official Records of Kern County on September 8, 2000, as document No. 0200112678 consisting of 24 pages , and is hereinafter referred to as the "Garces Grant Deed". For valuable consideration, receipt of which is hereby acknowledged, the Agency hereby quitclaims to Nickel Family LLC, a California limited liability company, hereinafter referred to as "Nickel LLC", the following described portions of the property and rights the Agency received from Garces in the Garces Grant Deed; it being the intent of the Agency in this Quit Claim Deed to transfer to Nickel LLC only such property and rights described herein as it received from Garces in the Garces Grant Deed and not to transfer to Nickel LLC any other property or rights that the Agency may now or hereafter own . All references hereinafter to Exhibit WTA-1 refer to that exhibit in the attached Garces Grant Deed.

The following Particular Water Rights referred to in Part I of Exhibit WTA-1:

1. Pre-consolidation Return Water. The Agency's right, title and interest in the Pre-Consolidation Return Water described in Item B of Part I of Exhibit WTA-1, which the Agency received from Garces in the Garces Grant Deed.

2. Right to Use Olcese Water. The Agency's right, title and interest in those portions of the right to use Olcese water described in Item C-3 of Part I of Exhibit WTA-1, which the Agency received from Garces in the Garces Grant Deed.

3. Water Rights Arising From Previously Riparian Rights. The Agency's right, title and interest in any riparian water rights appurtenant to the Rio Bravo Ranch in Kern County, described in Item D of Part I of Exhibit WTA-1, which the Agency received from Garces in the Garces Grant Deed.

4. Storage Rights. The Agency's right, title and interest to any storage rights which the Agency received from Garces in the Garces Grant Deed, which may be hereinafter acquired by Nickel LLC.

5. Storage Rights in Buena Vista Water Storage District. The Agency's right, title and interest in the storage rights in Buena Vista Water Storage District described in Item E-7 of Part I of Exhibit WTA-1, which the Agency received from Garces in the Garces Grant Deed.

6. Buena Vista-La Hacienda Water Exchange Agreement. The Agency's right, title and interest in the Buena Vista-La Hacienda Water Exchange Agreement described in Item F-4 of Part I of Exhibit WTA-1, which the Agency received from Garces in the Garces Grant Deed.

7. General Water Exchange Rights. All the Agency's right, title and interest in all water exchange rights and entitlements which may accrue to Nickel LLC in any future contracts and agreements entered into by Nickel LLC, which the Agency received from Garces in the Garces Grant Deed.

15. Hydro Assets. All of the Agency's right, title and interest in any licenses, guarantees, bills of sale, securities, confidential information and other proceeds and products described in Exhibit HTA-1 of the Garces Grant Deed, that may be hereinafter acquired by Nickel LLC in any hydroelectric projects other than the Rio Bravo Hydroelectric Project described in Exhibit HTA-1 of the Garces Grant Deed, which were conveyed to the Agency by Garces in the Garces Grant Deed.

KERN COUNTY WATER AGENCY
A California Public Agency

By: _____
Chairman, Board of Directors

OPTION AND WATER PURCHASE AGREEMENT

THIS AGREEMENT is made and effective as of October __, 2002 (the "Effective Date") by and between Nickel Family, LLC, a California limited liability company ("Nickel") and The Newhall Land and Farming Company, a California limited partnership ("Newhall") with reference to the following facts:

A. Nickel previously held rights to water from the Kern River. Nickel conveyed those rights to the Kern County Water Agency ("KCWA") in exchange for certain other water (the "Exchange Water") to be made available by KCWA for the benefit of Nickel pursuant to the terms of that certain Contract to Transfer the Kern River Lower River Water Rights between Nickel, the Olcese Water District and the KCWA dated January 23, 2001 (the "KCWA Agreement"). A copy of the KCWA Agreement is attached hereto as Exhibit A and incorporated herein by this reference. Pursuant to the terms of KCWA Agreement, Nickel has the right to transfer and sell the use of the Exchange Water to third parties.

B. Newhall wishes to acquire an option to purchase the use of 1,607 acre feet of the Exchange Water (the "Acquired Water") for the exclusive use by Newhall as described herein, each year, for an initial period of 35 years (the "Transfer Term"). Nickel is willing to grant such an option under the terms and conditions set forth in this Agreement.

THEREFORE, the parties hereby agree as follows:

1. Grant of Option. Subject to the terms and conditions set forth in this Agreement, Nickel hereby grants to Newhall an option (the "Option") to purchase and acquire the exclusive right to the use of the Acquired Water each year during the Transfer Term. The term of the Option shall be one year from the date of this Agreement (the "Initial Option Term"); provided, that Newhall may elect to extend the term of the Option for six additional calendar months (the "Extended Option Term") by giving written notice of extension to Nickel in the manner set forth in Section 18 and paying the Second Option Consideration Payment (as defined below) not less than five days prior to the expiration of the Initial Option Term. If the Option is not extended for the Extended Option Term, the Option will expire one year from the Effective Date. If the Option is extended for the Extended Option Term, the Option will expire 18 calendar months from the Effective Date.

2. Option Consideration. As consideration for the grant of the Option, Newhall shall pay $150,000 to Nickel as a First Option Consideration Payment within five days after the Effective Date. If Newhall elects to extend the Option for the Extended Option Term as provided in Section 1 of this Agreement, Newhall shall pay to Nickel a Second Option Consideration Payment of $100,000. Neither the First Option Consideration Payment nor the Second Option Consideration Payment shall be applied as a credit against the Purchase Price, as defined below. Other than as set forth in this Agreement, the First Option Consideration Payment and the Second Option Consideration Payment shall be non-refundable to Newhall.

3. Exercise of Option. Newhall may exercise the Option by giving written notice (the "Option Notice") to Nickel at any time prior to the expiration of the Option. Once the Option has been exercised, Newhall shall be obligated to purchase, and Nickel shall be obligated to sell, the use of the Acquired Water each year of the entire Transfer Term in accordance with the terms of this Agreement. If the Option Notice is delivered on or before September 1, 2003, the Transfer Term shall commence on January 1, 2004. If the Option Notice is delivered after September 1, 2003, the Transfer Term shall commence on January 1, 2005. The first year of the Transfer Term shall be referred to herein as the "First Water Year."

4. Purchase Price; Payment of Purchase Price. If Newhall exercises the Option, the annual purchase price (the "Purchase Price") for the use of the Acquired Water shall be $763,245 if the First Water Year is 2004; provided that the annual Purchase Price shall be increased on each January 1, commencing on January 1, 2005, by multiplying the Purchase Price in effect on the previous January 1 by 1.0325. The annual Purchase Price shall be paid on or before January 15 of each year during the Transfer Term.

5. Right to Extend Transfer Term. Provided that Newhall is not then in default under the terms of this Agreement, Newhall shall have the right to extend the Transfer Term for an additional 35 years by providing Nickel with written notice of Newhall's election to extend the Transfer Term pursuant to this Section 5 at least 90 days prior to the expiration of the initial Transfer Term. The terms and conditions of this Agreement including, without limitation, the amount of the Purchase Price shall apply to the extended Transfer Term, and all references in this Agreement to the Transfer Term shall include the Transfer Term as extended pursuant to this Section 5.

6. Reversion of Acquired Water to Nickel. The use of the Acquired Water shall revert to Nickel at the end of the Transfer Term, including any valid extension thereof, or upon termination of this Agreement.

7. Delivery Schedule; Point of Delivery.

(a) The Acquired Water shall be made available to Newhall at Tupman, free and clear of all liens, encumbrances, or rights of any other party, at the same time and in the same manner as KCWA schedules deliveries of State Water Project Entitlement Water to the KCWA's Member Units, as set forth in the Agency's contracts with its Member Units as they presently exist or may be changed from time to time.

(b) Nickel shall make or cause the Acquired Water to be available to Newhall at the Tupman turnout, as defined in Article 1.17 of the KCWA Agreement ("Tupman"), as provided in Article 4.4 of the KCWA Agreement.

8. Water Charges. Except as expressly provided in this Agreement, Nickel shall be solely responsible for all conveyance or delivery costs and expenses (including without limitation pumping costs) associated with making the Acquired Water available at Tupman. Newhall shall be responsible for all costs or expenses associated with the conveyance and delivery of the Acquired Water beyond Tupman imposed by KCWA and/or the California Department of Water Resources for conveyance of the Acquired Water beyond Tupman. Further, Newhall shall pay to Nickel that portion of those power charges attributable to the Acquired Water in any year in which Nickel is obligated to pay to KCWA the power charges described in Article 4.5 of the KCWA Agreement (the "Power Charges"), which the parties acknowledge is 16.07 percent of the total power charges payable by Nickel in any year in which such charges are payable under Article 4.5 of the KCWA Agreement. Newhall shall pay Nickel the Power Charges within 30 days of Newhall's receipt of an invoice for the Power Charges from Nickel.

9. KCWA Actions. Nickel and Newhall shall jointly request that KCWA and the Castaic Lake Water Agency ("Castaic") enter into a "point of delivery" agreement with the California Department of Water Resources approving delivery of a portion of KCWA's State Water Project Table A entitlement, used as State Water Project exchange water, to Castaic so that the Acquired Water can be delivered to Castaic for the entire Transfer Term (the "Point of Delivery Agreement"). If the Point of Delivery Agreement is not obtained prior to the expiration of the Option, or if Newhall exercises the Option and the Point of Delivery Agreement is not obtained prior to the commencement of the First Water Year, Newhall may at its election terminate this Agreement without liability to Newhall and receive a refund from Nickel of the First Option Consideration Payment, the Second Option Consideration Payment (if it was paid to Nickel) and any Purchase Price paid to Nickel, without interest, so long as Newhall uses reasonable good faith efforts to obtain the Point of Delivery Agreement.

10. Assignment. Nickel acknowledges that Newhall intends to use the Acquired Water on lands owned by Newhall within the service area of the Castaic and/or the Valencia Water Company ("Valencia"). Newhall may assign this Agreement, in whole or in part, to Castaic and/or Valencia upon notice to Nickel without further consent by Nickel. Any other assignment of this Agreement shall be subject to Nickel's advance written consent, which consent shall not be unreasonably withheld; provided, that in no event may Newhall assign the Option to any party other than Castaic or Valencia. Should Newhall assign this Agreement, or any part, as provided in this Section 10, (i) each assignee shall be required to agree, in writing, to be bound by and timely comply with all terms and provisions of this Agreement and (ii) each assignee shall succeed to the specified rights and obligations of Newhall under this Agreement and shall be recognized by Nickel as possessing all such rights and obligations, and all references to "Newhall" herein shall be deemed to refer to such assignee. Any assignment to Castaic, Valencia or otherwise with Nickel's consent shall relieve Newhall of all further obligations under this Agreement. Newhall may

also sell, on a yearly basis and on terms and conditions acceptable to Newhall, the use of any or all of the Acquired Water Newhall purchases that year to one or more third parties without the consent of Nickel; provided, that Newhall expressly acknowledges that Nickel and KCWA are only obligated to make available any Acquired Water sold by Newhall on a yearly basis to Tupman and only in accordance with this Agreement and the KCWA Agreement.

11. Maintenance of Acquired Water. While this Agreement is in effect, Nickel shall not take or omit to take any action that would render Nickel unable to fully perform its obligations under this Agreement. Without limiting the foregoing, while this Agreement is in effect Nickel shall not (i) amend or revise the KCWA Agreement, or (ii) encumber, commit, transfer or otherwise dispose of the Acquired Water, if any of those that actions would render Nickel unable to fully perform its obligations under this Agreement. Further, Nickel shall take all actions necessary to ensure that it can fully perform its obligations under this Agreement. Notwithstanding the above, Nickel shall have the right to annually market the water that will be the Acquired Water prior to the commencement of the Transfer Term so long as the Acquired Water is available to Newhall during the Transfer Term.

12. Representations and Warranties of Nickel. Nickel hereby makes the following covenants, representations and warranties as of the Effective Date:

(a) Nickel has the authority to enter into this Agreement, sell and transfer the use of the Acquired Water to Newhall, and to otherwise perform as set forth herein. Nickel is the sole owner of the Acquired Water and has the unrestricted right and power to transfer the use of it to Newhall under the terms of this Agreement and to make the Acquired Water available at Tupman for the benefit of Newhall pursuant to the KCWA Agreement. The execution and delivery of this Agreement have been validly authorized by all requisite action on the part of Nickel.

(b) Nickel's execution of this Agreement and performance of its obligations hereunder will not violate any agreement, option, covenant, condition, obligation or undertaking of Nickel, nor to the best of Nickel's actual knowledge will it violate any law, ordinance, statute, order, or regulation.

(c) To the best of Nickel's actual knowledge, there are no actions, suits or proceedings of any kind or nature, legal or equitable, pending or threatened, relating to the KCWA Agreement or the Acquired Water, or potentially affecting or arising out of Nickel's ownership, management, or ability to sell the Acquired Water, in any court or before or by any federal, state, county or municipal department, commission, board, bureau, agency, or other governmental instrumentality.

(d) To the best of Nickel's actual knowledge, neither the Acquired Water nor any portion thereof, is subject to or affected by (i) any assessments, whether or not presently constituting a lien thereon, or (ii) any condemnation, eminent domain, or similar proceedings that render Nickel unable to fully perform its obligations under this Agreement.

(e) The Acquired Water is free and clear of any liens, encumbrances, or rights of any other party, that would render Nickel unable to fully perform its obligations under this Agreement, and Nickel shall maintain the Acquired Water free and clear of any such liens, encumbrances, or rights imposed against Nickel that render Nickel unable to fully perform its obligations under this Agreement while this Agreement is in effect.

(f) To the best of Nickel's actual knowledge, except for the KCWA Agreement and Nickel's obligations to KCWA under the KCWA Agreement, there are no contracts, licenses, commitments, agreements or undertakings respecting the Acquired Water by which Nickel would be obligated or liable to any person.

(g) Except as expressly contemplated by this Agreement, no approval is required from KCWA in order for the transactions contemplated by this Agreement to occur, and no approval is required from any other party in order for the Acquired Water to be made available to Newhall by Nickel at Tupman.

(h) No proceedings are pending or threatened in which Nickel may be adjudicated as bankrupt or discharged from any and all of its debts or obligations or granted an extension of time to pay its debts or a reorganization or readjustment of its debts.

(i) As reasonably requested by Newhall, Nickel shall cooperate with Newhall in obtaining the necessary approvals for the transfer of the Acquired Water for use by Newhall at any time while this Agreement is in effect; provided, that no such assignment or transfer shall extend beyond the Transfer Term. Newhall shall reimburse Nickel for Nickel's reasonable out-of-pocket expenses incurred in connection with any such cooperation requested by Newhall. Notwithstanding the foregoing, Nickel's obligation to cooperate with Newhall shall be subject to the availability of appropriate representatives of Nickel. In no event shall the cooperation required of Nickel impose a material burden on Nickel.

(j) To the best of Nickel's actual knowledge, there is no action, suit, claim, cause of action, or proceeding at law or in equity (or by or before any governmental agency, official or authority of any local, State or Federal government) now pending, wherein an unfavorable decision, ruling or finding would (i) affect the creation, organization, existence or powers of the Nickel or the titles and powers of its Board members and officers to their respective offices; (ii) enjoin or restrain the approval and/or execution of this Agreement, or (iii) in any way question or affect any of the rights, powers.

(k) Nickel is unaware of any fact or circumstance that would prevent Nickel from being able to fully perform its obligations under this Agreement, or that would prevent Newhall from acquiring or using the Acquired Water as contemplated by Newhall.

13. Representations and Warranties of Newhall. Newhall hereby makes the following covenants, representations and warranties as of the Effective Date of this Agreement:

(a) Newhall has the authority to enter into this Agreement, purchase the Acquired Water, and to otherwise perform as set forth herein. The execution and delivery of the Agreement has been validly authorized by all requisite action on the part of Newhall.

(b) Newhall's execution of this Agreement and performance of its obligations hereunder will not violate any agreement, option, covenant, condition, obligation or undertaking of Newhall, nor to the best of Newhall's knowledge will it violate any law, ordinance, statute, order, or regulation.

(c) To the best of Newhall's actual knowledge, there is no action, suit, claim, cause of action, or proceeding at law or in equity (or by or before any governmental agency, official or authority of any local, State or Federal government) now pending, wherein an unfavorable decision, ruling or finding would (i) affect the creation, organization, existence or powers of the Newhall or the titles and powers of its Board members and officers to their respective offices; (ii) enjoin or restrain the approval and/or execution of this Agreement, or (iii) in any way question or affect any of the rights, powers, duties or obligations of the Newhall with respect to implementation of this Agreement.

(d) No proceedings are pending or threatened in which Newhall may be adjudicated as bankrupt or discharged from any and all of its debts or obligations or granted an extension of time to pay its debts or a reorganization or readjustment of its debts.

(e) Newhall has received any and all information from Nickel, KCWA and any other source which it desires or expects in connection with the transactions contemplated by this Agreement. Except as set forth in this Agreement, Newhall is not relying upon Nickel to disclose (or to evaluate any other person's disclosure of) any such matters, and Newhall excuses and releases Nickel from any duty whatsoever to make such disclosures.

14. Condition Precedent to Nickel's Obligations to Perform. If Newhall exercises the Option, Nickel's obligation to transfer the Acquired Water in any year of the Transfer Term is hereby expressly conditioned on satisfaction or waiver by Nickel of the following condition precedent:

(a) Newhall shall have timely performed each of the acts to be performed by it hereunder including, without limitation, payment of the annual Purchase Price.

15. Conditions Precedent to Newhall's Obligation to Perform. If Newhall exercises the Option, Newhall's obligation to purchase the Acquired Water in any year of the Transfer Term is hereby expressly conditioned on satisfaction or waiver by Newhall of each and every one of the following conditions precedent:

(a) Nickel shall have timely performed each of the acts to be performed by it hereunder.

(b) Newhall shall have received any necessary governmental or other consents for the receipt of the Acquired Water at Tupman in that year. Newhall shall diligently pursue such necessary governmental or other consents for this condition precedent to apply.

(c) The Acquired Water is available and can be made available at Tupman in accordance with the terms of this Agreement.

(d) The Point of Delivery Agreement is in effect.

Should any of the foregoing conditions precedent not be satisfied in any year, and as a result thereof Nickel cannot make the Acquired Water available to Newhall at Tupman that year in accordance with the terms of this Agreement, and/or the Point of Delivery Agreement is not in effect, Newhall shall provide written notice thereof to Nickel in accordance with Section 18 of this Agreement. If such condition exists 15 days after Nickel's receipt of such written notice, Newhall shall be under no obligation to purchase the Acquired Water in that year (although Newhall may nevertheless waive such condition). However, this Agreement shall remain in effect during the entire Transfer Term. If Newhall does not purchase the Acquired Water in any year pursuant to this Section, Nickel shall have the right to use, or sell the use of the Acquired Water in that year, so long as the Acquired Water is available to Newhall during the remainder of the Transfer Term.

16. Costs and Expenses. Except as otherwise provided herein, Newhall shall pay all costs and fees associated with the transfer of the Acquired Water under this Agreement, including without limitation any transfer taxes associated with the Acquired Water. Each party shall be responsible for their own attorneys' and other professional fees and internal administrative costs associated with the preparation of this Agreement and the transfer of the Acquired Water.

17. Brokerage Commissions. Newhall and Nickel each represents and warrants to the other that it has not engaged the services of any broker, agent or finder, nor done any other act nor made any statement, promise or undertaking which would result in the imposition of liability for the payment of any brokerage commission, finder's fee or otherwise in connection with the transaction described in this Agreement. In the event that any person or entity perfects a claim for a brokerage commission, finder's fee or otherwise, based upon any agreement, statement or act, the party through whom such person or entity makes such claim shall be responsible therefor and shall indemnify, defend and hold the other party and the Acquired Water harmless from and against such claim and all loss, cost and expense associated therewith, including attorneys' fees.

18. Notices. All notices under this Agreement shall be effective upon personal delivery or confirmed facsimile transmission to Nickel or Newhall, as the case may be, or three business days after deposit in the United States mail, registered or certified, postage fully prepaid and addressed to the respective parties as follows:

To Nickel: James L. Nickel
President
Nickel Family, LLC
P.O. Box 60679
Bakersfield, CA 93386-0679
Facsimile: 661-872-7141

To Newhall: Steven Zimmer
Vice President
The Newhall Land and Farming Company
23823 Valencia Boulevard
Valencia, CA 91355
Facsimile: 661-288-1052

or such other address as the parties may from time to time designate in writing.

19. No Third Party Beneficiaries. Except for assignees receiving valid assignments made pursuant to Section 10 of this Agreement, Nickel and Newhall hereto agree that it is not their intent to create any rights or benefits in any third parties and that no third party beneficiaries shall be created or shall be deemed created by this Agreement.

20. Attorneys' Fees. In the event of any action between Newhall and Nickel seeking enforcement of any of the terms and conditions of this Agreement or in connection with the Acquired Water, the prevailing party in such action shall be awarded its reasonable costs and expenses, including but not limited to taxable costs, and its reasonable attorneys' fees.

21. Remedies. The parties understand and agree that use of the Acquired Water is unique, may not be replaceable in the event it is not transferred to Newhall in accordance with this Agreement, and will be relied upon by Newhall through the Transfer Term, including any extension thereof, in connection with its development activities in Los Angeles County. Therefore, in addition to a claim for damages for a breach or default, and in addition and without prejudice to any other right or remedy available at law or in equity Newhall may have in the event of a threatened or actual breach of this Agreement by Nickel, Newhall shall be entitled to injunctive relief, specific performance and other equitable remedies. Nickel acknowledges that in the event of a threatened or actual breach of this Agreement by Nickel, Newhall will be irreparably damaged in the event that this Agreement is not specifically enforced and that equitable relief would be appropriate. If Newhall breaches, or defaults in the performance of its obligations under this Nickel may pursue any remedies available to it at law or in equity for such default or breach. Notwithstanding the foregoing, if one party threatens to breach, breaches or defaults in the performance of its obligations under this Agreement (the "defaulting party"), no remedy at law or equity will be sought until written notice is provided to the defaulting party in accordance with Section 18 and the threat of breach, breach or default exists 15 days after the defaulting party's receipt of written notice of such default.

22. Entire Agreement. This Agreement and items incorporated herein contain all of the agreements of the parties hereto with respect to the matters contained herein, and no prior agreement or understanding pertaining to any such matter shall be effective for any purpose. No provisions hereof may be amended or modified in any manner whatsoever except by an agreement in writing signed by duly authorized representatives of each of the parties.

23. Successors. The terms, covenants and conditions hereof shall be binding upon and shall inure to the benefit of the heirs, executors, administrators and assignees of the respective parties hereto.

24. Further Action. The parties agree to perform all further acts, and to execute, acknowledge, and deliver any documents that may be reasonably necessary, appropriate or desirable to carry out the purposes of this Agreement. Without limiting the foregoing, at the request of Newhall, Nickel shall assist Newhall in obtaining any and all consents or assistance from the KCWA necessary or desirable in connection with the transfer of the use of the Acquired Water to Newhall including, without limitation, any requests for assistance pursuant to Article 4.9 of the KCWA Agreement.

25. Waiver. A waiver of any breach of this Agreement by any party shall not constitute a continuing waiver or a waiver of any subsequent breach of the same or any other provision of this Agreement.

26. Choice of Laws. This Agreement shall be governed by the laws of the State of California and any question arising hereunder shall be construed or determined according to such law.

27. Headings. Headings at the beginning of each numbered Section of this Agreement are solely for the convenience of the parties and are not a part of this Agreement.

28. Time. Time is of the essence, it being understood that each date set forth herein and the obligations of the parties to be satisfied by such dates have been the subject of specific negotiations by the parties.

29. Counterparts. This Agreement may be signed by the parties in different counterparts and the signature pages combined to create a document binding on all parties.

27. Force Majeure. If the performance by any party to this Agreement of any of its obligations or undertakings under this Agreement is interrupted or delayed by any occurrence not occasioned by the conduct of a party to this Agreement, whether that occurrence is an act of God or public enemy, or whether that occurrence is caused by war, riot, storm, earthquake, or other natural forces, or by the acts of anyone not a party to this Agreement, then that party shall be excused from any further performance for whatever period of time after the occurrence is reasonably necessary to remedy the effects of that occurrence. The Transfer Term shall be extended by the period of time such performance is so excused.

28. Quitclaim. Upon the expiration of this Agreement for any reason, including the failure to timely exercise the Option in the manner provided herein, Newhall shall properly execute, acknowledge, and deliver to Nickel a quitclaim in a form suitable to establish the termination of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement on the date first hereinabove written.

NICKEL FAMILY, LLC

By: _____
James L. Nickel, President

THE NEWHALL LAND AND FARMING COMPANY
(a California Limited Partnership)

By: NEWHALL MANAGEMENT LIMITED PARTNERSHIP, Managing General Partner

By: NEWHALL MANAGEMENT CORPORATION, Managing General Partner

By: _____
Steven Zimmer, Vice President

EXHIBIT A

"The KCWA Agreement"

APPENDIX 2.5(c)

Nickel Environmental Documentation

KERN COUNTY WATER AGENCY

INITIAL STUDY AND

PROPOSED NEGATIVE DECLARATION

FOR THE

KERN RIVER RESTORATION

AND

WATER SUPPLY PROGRAM

Prepared by the Kern County Water Agency, July 27, 2000

KERN COUNTY WATER AGENCY
Environmental Initial Study Form
[for CEQA Guideline section 15063]

1. Project title: Kern River Restoration and Water Supply Project

2. Lead agency name and address:

Kern County Water Agency
P.O. Box 58
3200 Rio Mirada Drive
Bakersfield CA 93302-0058

3. Contact person and phone number: Thomas N. Clark, General Manager, 661-634-1400

4. Project location: The Project is located in the City of Bakersfield primarily along the Kern River corridor from the projected extension of Haley Street on the east side, to the California Aqueduct on the west end, and south and west of Bakersfield in the unincorporated portion of the county along the Cross Valley Canal and Arvin-Edison Canal and including other local water conveyance facilities. Also, see attached Project location maps.

5. Project sponsor's name and address: Same as lead agency.

6. Description of project:

Summary. Project proposes to provide significant water quality, water supply, environmental and community benefits for the metropolitan Bakersfield area and a broad range of Kern County water users through the coordinated implementation of a number of program components including: (1) acquisition of the Lower Kern River water right (Lower Right), i.e., Hacienda/Garces pre-1914 water right, including associated Lake Isabella Storage; (2) Purchase of land from Castle and Cooke California, Inc., for additional recharge and recovery facilities; (3) construction of 12 new agricultural water recovery wells and construction of enough Urban area wells to achieve a flow capacity of 60 cfs; and (4) Construction of water exchange facilities, interconnection of water conveyance facilities and modification of the Pool 1 portion of the Cross Valley Canal.

Expanded Description. See attached Initial Study Project Description.

7. General plan designation and zoning: No change to the existing General Plan or Zoning laws is anticipated.

8. Surrounding land uses and environmental setting: The Kern River Parkway Plan and EIR were adopted in 1988 by the City of Bakersfield. The natural site presently includes 1,400 acres along the majestic Kern River corridor extending from Manor Street on the northeast side of the City of Bakersfield to a point one mile below the Stockdale Highway bridge on the city's western edge. A bike path meanders alongside the course of the Kern River, providing for 12 miles of uninterrupted scenic activity. The primary benefits of the Parkway include flood control, water recharge and conservation, preservation and restoration of native riparian habitats and open space for greenbelt and recreational uses. The Kern River Parkway is a community project involving active, on-going public participation and has resulted in improved community image and attractiveness of the natural environment; a unique family oriented recreational area for all to enjoy. Major features of the Kern River Parkway include: 1) 320 acres of primary river channel; 2) 275 acres of natural and riparian land; 3) 460 acres of natural habitat for educational studies; 4) 25 acre Truxtun Lake Recharge Area; 5) 12 miles of uninterrupted bike path with 9 rest areas; 6) 8 miles of equestrian trails; 7) Multi-station exercise par course; 8) 3 professional quality sand volleyball courts; 9) 4 public parks with group picnic areas.

In November of 1999, a landmark water agreement was approved between the City of Bakersfield and the Kern County Water Agency designed to keep water flowing in the Kern River during the May through September recreation period in years when ID4's SWP entitlement allocation is 50% or greater. The proposed Project helps the historic pact to ensure a that in most years water will flow in the river throughout the summer months, even during years of less than 50% SWP supplies, providing for expanded recreational activities, especially at the popular Beach Park and Yokuts Park.

Also the proposed Project will complement and supplement existing and ongoing urban and agricultural programs to recharge water in wet years for recovery of recharged water through extraction by wells in dry years. The proposed Project is fully compatible with existing land uses and environmental settings.

9. Other public agencies whose approval is required: None.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:
The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐	Aesthetics	☐	Agriculture	☐	Resources Air Quality
☐	Biological Resources	☐	Cultural Resources	☐	Geology /Soils
☐	Hazards & Hazardous Materials	☐	Hydrology / Water Quality	☐	Land Use/ Planning
☐	Mineral Resources	☐	Noise	☐	Population / Housing
☐	Public Services	☐	Recreation	☐	Transportation/Traffic
☐	Utilities / Service Systems	☐	Mandatory Findings of Significance	■	None.

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

■ find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects of the (a) have been analyzed adequately in the Previous CEQA Documents pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to the Previous CEQA Documents, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Thomas N. Clark
General Manager
Kern County Water Agency

July 27, 2000
Date

California Environmental Quality Act
INITIAL STUDY
Project Description of the Kern River Restoration and Water Supply Program

The Kern River Restoration and Water Supply Program proposes the integration of newly acquired assets and coordinated operation of existing and new water recharge, recovery and conveyance facilities. The Kern County Water Agency, (Agency) along with other local water leaders have been working to implement the Kern River Restoration and Water Supply Program, (Project) utilizing funds from the "Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Act" (Proposition 13). The purpose of the Project is to generate broad local water supply, environmental and community benefits, and targeted drinking water quality benefits within the metropolitan Bakersfield area. The proposed Project consists of the four following broad components, and further defined below.

1. Acquisition of the Kern River Lower Water Right
2. Construction of enough urban area water wells to achieve a flow capacity of about 60 cfs
3. Construction of water quality exchange facilities
4. Construction and acquisition of local facilities to enhance groundwater recharge and recovery opportunities and associated appurtenances, including modification of the Pool 1 portion of the Cross Valley Canal (CVC), and interconnection of other existing canals.

Water quality and water supply benefits from the Project will be realized through the acquisition of the high flow Lower Kern River water right (Lower Right), i.e., La Hacienda and Garces pre-1914 water right to the Kern River. This high flow water is estimated to be available when the Kern River is at or above 120% of normal run-off or in about one out of every five years. Table 1 below shows a 105 year summary of historical annual Kern River entitlements for La Hacienda.

TABLE 1

Year	First Point flows in (AF)	April-July flows (AF)	% of Normal	La Hacienda Entitlement (AF)		
				Jan-Mar	Apr-Jul	Total
1895	1,023,051	694,729	146	0	36,181	36,181
1897	893,433	654,262	138	0	18,375	18,375
1906	1,900,540	1,391,636	293	0	399,190	399,190
1907	990,900	678,748	143	0	45,649	45,649
1909	1,838,644	1,218,975	256	40,306	294,730	335,036
1911	1,013,385	701,168	147	0	39,014	39,014
1914	1,113,515	685,012	144	10,512	31,906	42,418
1916	2,520,149	1,571,597	331	165,981	508,066	674,047
1917	823,083	560,304	118	0	3,401	3,401
1922	964,080	617,710	130	0	5,844	5,844
1937	1,260,182	852,047	179	7,358	105,401	112,759
1938	1,358,688	961,769	202	0	170,179	170,179
1941	1,401,078	995,657	209	0	168,590	168,590
1943	1,220,628	697,182	147	53,036	37,260	90,296
1952	1,500,998	1,119,815	236	0	234,738	234,738
1958	1,104,730	831,669	175	0	96,435	96,435
1967	1,396,229	924,005	197	0	137,063	137,063
1969	2,461,369	1,747,874	373	65,152	614,714	679,866
1973	979,652	723,768	154	0	48,958	48,958
1978	1,653,505	1,094,376	249	29,209	219,348	248,557
1980	1,639,968	991,025	225	67,337	166,551	233,888
1982	1,271,139	796,794	171	0	81,089	81,089
1983	2,489,131	1,545,810	323	79,848	508,966	588,814
1986	1,444,941	886,674	184	48,645	120,637	169,282
1995	1,353,037	929,221	199	658	139,357	140,015
1996	1,038,261	599,331	128	0	16,279	16,279
1997	1,181,969	571,476	122	73,010	0	73,010
1998	1,717,967	1,137,373	239	27,587	245,361	272,948
Total	39,554,452	26,180,006		668,639	4,493,282	5,161,921

As can be seen from the Table 1, deliveries of the Lower Right are highly variable from year to year. For example, over the 105 year period of record, 1969 was the maximum total delivery year with a quantity of 679,866 acre-feet.
During seventy-seven (77) years over the 105 year period, no Lower Right flow is available. The lowest quantity on record of the years Lower Right flow was available was 3,401 acre-feet delivered in 1917. As shown in Table 1, Lower Right water has a high range of variability in flow. A goal of the Project is to maximize the opportunities to use this water for urban and agricultural purposes, either for direct urban use or for groundwater recharge. The long-term average annual yield of the Lower Right water is estimated at 40,000 acre-feet. Another one of the goals of the Project is to make available for urban use, the highest quality water. Due to the high quality nature of Kern River water, when available for use up to a maximum of 40,000 acre-feet of annual Lower Right water will be given priority for delivery to the Improvement District No. 4 (ID4) Henry C. Garnett Water Purification Plant (Purification Plant) and delivered for urban use in the greater Bakersfield area. This will assist the Purification Plant in meeting existing and future water quality standards for the public water supplies as administered by the Environmental Protection Agency and other government regulators responsible for Public Health. Annual Lower Right water available above the amount used by the Treatment Plant will be used for groundwater recharge and provide a water supply benefit to local agricultural water districts as described elsewhere in the description.

Environmental and community benefits are an important part of the Project. The Project plans to assure through acquisition of the Lower Right and by annual water exchanges with local water district having other Kern River water rights, that the heart of the City of Bakersfield (from Manor Street downstream to Allen Road) will enjoy a 12 mile stretch of re-watered Kern River, at least from May through September. This stretch of the Kern River has been usually dry since the mid-1950's, except in wet years, and will complement the existing Kern River Parkway Plan and EIR adopted in 1988 by the City of Bakersfield.

An integral component of the program is the proposed construction of urban area wells along the right-of-way of the Kern Island and Cross Valley Canals, east of Highway 99 (see attached maps). In dry years, estimated to be when the Kern River is at or below 50% of normal, these wells will be pumped as part of the exchange to keep the Kern River channel wet between Manor Street on the east end, and the Stockdale bridge at the west end of the City. Water that has previously been released down the Kern River channel and percolated will be recaptured and recirculated by these wells. The ability to recirculate water is accomplished by an exchange among ID4 and Kern Delta WD (KD)/North Kern WSD (NK). These wells will only be pumped during the driest of years to pay water back when NK and KD for release of their Kern River water into the Channel. This component of the Project will serve to keep the river flowing during the peak recreational use months of May through September, without decreasing the supplies that are needed during the critical water short years. The Table below shows an example of an operation during a year when the wells will be maximized and water is available for reregulation in Isabella by NK and KD.

TABLE 2

Month	Water delivery to KD and NK from urban area wells via Kern Island and Beardsley Canals (AF)	Change in Isabella Storage do to reregulation (AF)	KD and NK entitlement Kern River deliveries (AF)	KD/NK deliveries to wet the Kern River Channel (AF)
Jan	2,918	2,918		0
Feb	2,918	2,918		0
Mar	2,918	2,918		0
Apr	2,918	2,918		0
May	2,916	(4,084)	2,916	4,084
Jun	2,916	(4,084)	2,916	4,084
Jul	2,916	(4,084)	2,916	4,084
Aug	2,916	(4,084)	2,916	4,084
Sep	2,916	(4,084)	2,916	4,084
Oct	2,916	2,916		0
Nov	2,916	2,916		0
Dec	2,916	2,916		0
Total	35,000	0	14,580	20,420

When required, the KCWA/ID4 will annually provide up to 35,000 acre-feet of water directly or by exchange for delivery into the Kern River Channel beginning at Manor Street in order to help maintain the flow for recreational, community and environmental benefits to the citizens of Metropolitan Bakersfield. The target period to wet the Kern River Channel is the months of May through September or a 150 day continuos period. It is estimated with a high degree of confidence, that a total flow of 35,000 acre-feet is required to wet the targeted River Channel area for the 5-month period. To allocate a continuous flow of the 35,000 acre-feet over this period requires an approximate instantaneous capacity of 117 cfs. The exchange to keep the Kern River Channel wet for the 5-month period would be accomplished under the following programs:

- No use of wells, normal Kern River hydrology: KD and NK release a combined flow capacity of 117 cfs of their respective Kern River entitlement in the Kern River Channel during the months of May through September, that would otherwise have been delivered to the districts, via the Beardsley and Kern Island Canals. In exchange (either simultaneously or by payback), ID4 conveys an equal amount of SWP water entitlement or other water in the CVC for delivery to KD/NK via the CVC extension, the Arvin-Edison turnout, or the proposed cross river pipeline.
- Use of wells, dry SWP and/or Kern River hydrology: KCWA pumps the Urban area wells. The east wells pump water into the CVC and/or Kern Island Canal for delivery to KD and for delivery to NK via the Beardsley Canal. In addition, wells pump recovered water into the CVC for delivery to KDWD via the Arvin-Edison turnout and connection to the Kern Island Canal. The wells supply approximately 35,000 acre-feet over a 10 to 12 month period. KD and NK reregulate their Kern River supply during the first and last months of the year as shown in the example in Table 2 above and deliver water out of storage down the Kern River channel during the May through September period.
- In the wettest years: During wet years on the Kern River, there will be plenty of high flow water available to wet the Channel and no water will be required from ID4 and KD/NK.

1. To facilitate the water exchanges described above, a number of new facilities would be constructed described below:
   a. Facilities would be modified as needed on the Arvin-Edison Canal used to divert water to the various canal owned by KD. These diversion facilities would have a targeted capacity of 150 cfs. See attached map for facility locations.
   b. A pipeline would be constructed in order to divert well water, SWP and/or Friant-Kern water from the CVC to the Kern Island Canal to a point just east of Manor Street. This pipeline facility would have a targeted capacity of 150 cfs.
   c. As an alternative to item "b" above, the existing eastside pipeline owned and operated by ID4 would be modified to deliver water from the CVC to the same location in the Kern Island Canal. This pipeline facility has a targeted capacity of 60 cfs.

In years when the Lower Right water is available, the first 40,000 acre-feet will be used to meet the needs of the ID4 Purification Plant for delivery to the Urban Bakersfield area. The next increment of yield (40,000 acre-feet to 125,000 acre-feet) can be regulated within the same year. Any yield above that will be available for immediate delivery. Historically, the flows have been as high as 550,000 acre-feet. Currently not all the water can be captured.

Another program component is to acquire and construct facilities to enhance local groundwater recharge and recovery operations. To accomplish this goal, additional regulation/recharge basins will be constructed on approximately 80 acres property which has been targeted for acquisition from Castle and Cooke California, Inc. The property is located along both sides of the Kern River near the Stockdale bridge. Portions of the property will be dedicated to groundwater recharge and other portions will be used for a multi-propose Park facility, with groundwater recharge given a priority when the Kern River is in a high flow year, thus combining a prominent water feature into the park.

Lower Right water available for use above what is needed by the Purification Plant would be recharged in the facilities listed below:

- In the new land acquired from Castle and Cooke California, Inc., (CCC) located near the Stockdale bridge on both sides of the Kern River. These lands will consist of one 10-acre recharge pond north of the River and one 5-acre recharge pond south of the Kern River. A potential annual recharge of 5,500 acre-feet can be achieved in these ponds, based on a recharge rate of 1.0ac-ft/ac/day.
- In the 40 new acres of land acquired from CCC located on the north side of the Kern River near the Stockdale bridge. This land is proposed to be used as a multi-purpose recreation facility and during wet years will be used to recharge the high flow months that Lower Right water is available. A potential monthly recharge of 120 acre-feet can be achieved in this area, based on a recharge rate of 1.0ac-ft/ac/day.
  The existing banking projects will also have access to this water.
- The Berrenda Mesa Project recharge facility. This Project has a potential annual recharge capacity of 58,000 acre-feet. The Pioneer Project recharge facility has a potential annual recharge capacity of 146,000 acre-feet. The Kern Water Bank Project has a potential annual recharge capacity of 450,000 acre-feet.
- This water may also be used to meet other Ag, urban or groundwater management purposes.

To enhance the capability of existing canals to convey recovered water, the Project proposes to interconnect the Kern River Canal with the Kern Water Bank canal and to raise the lining of the CVC in Pool 1. The CVC would be modified to "float" off the Aqueduct to increase the operational opportunity for water exchanges. The modification will also reduce water over-topping the lining, increase flexibility to move water around the County, reduce energy costs, and reduce operations and maintenance costs. This work covers the portion of the CVC that extends from the California Aqueduct turnout near Tupman to the forebay of Pumping Plant 1. All work would be done within the existing CVC right-of way.

The Project proposes to construct 12 new agricultural groundwater recovery wells. The 12 wells will be located on either the Agency's Pioneer property, Kern Water Bank, and/or private land in the vicinity of existing projects. The wells are estimated to have an annual

recovery capacity of 36,000 acre-feet. In dry years the banked Lower Right water will be recovered using the 12 new agricultural wells constructed as described above. The recovered banked water will be delivered to the CVC, Kern River Canal or the Kern Water Bank Canal and directly or by exchange delivered to the Participants of the Banking Projects to supplement shortages in surface water deliveries. The operation of the urban and agricultural wells will be governed by the principles substantially similar to those found in the Memorandum of Understanding (MOU) regarding the Operation and Monitoring of the Kern Water Bank Groundwater Banking Program. The MOU outlines the terms, methods and procedures for the monitoring program appropriate for groundwater recharge and recovery projects. Each year, a report will be published by the Monitoring Committee which presents the following information:

A. A summary of ground water levels collected during the year;

B. A summary of water quality analyses of water collected during the year from recovery wells and monitoring wells;

C. Records of water recharged during the year and its source;

D. Records of water recovered during the year.

E. The status of current accounts of stored water, including losses, and the quantities of water available for recovery;

F. Information regarding any ongoing groundwater quality remedial concerns that may arise from time to time.

Environmental Checklist:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
I. AESTHETICS – Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒
II. AGRICULTURE RESOURCES - - Would the project:				
a) Convert/reduce Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒
III. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
IV. BIOLOGICAL RESOURCES – Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
VI. GEOLOGY AND SOILS – Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
VII. HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
) Create a significant hazard to the public or the environment through easonably foreseeable upset and accident conditions involving the elease of hazardous materials into the environment?	☐	☐	☐	☒
) Emit hazardous emissions or handle hazardous or acutely azardous materials, substances, or waste within one-quarter mile of n existing or proposed school?	☐	☐	☐	☒
l) Be located on a site which is included on a list of hazardous naterials sites compiled pursuant to Government Code Section 5962.5 and, as a result, would it create a significant hazard to the ublic or the environment?	☐	☐	☐	☒
) For a project located within an airport land use plan or, where such plan has not been adopted, within two miles of a public airport or ublic use airport, would the project result in a safety hazard for people esiding or working in the project area?	☐	☐	☐	☒
) For a project within the vicinity of a private airstrip, would the project esult in a safety hazard for people residing or working in the project rea?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or leath involving wildland fires, including where wildlands are adjacent o urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒
VIII. HYDROLOGY AND WATER QUALITY -- Would the roject:				
a) Violate any water quality standards or waste discharge equirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially vith groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒
IX. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
X. MINERAL RESOURCES – Would the project:				

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
XI. NOISE – Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
XII. POPULATION AND HOUSING -- Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XIII. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☒
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒
XIV. RECREATION --				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
XV. TRANSPORTATION/TRAFFIC – Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☐	☒
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒
<u>XVI. UTILITIES AND SERVICE SYSTEMS</u> -- Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XVII. MANDATORY FINDINGS OF SIGNIFICANCE –				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

EXPLANATION OF RESPONSES
INITIAL STUDY CHECKLIST

Project: Kern River Restoration and Water Supply Program

Agency: Kern County Water Agency

I. **Aesthetics.**

a. The Project will have the potential to increase the aesthetic value of the Kern River corridor area during wetting periods.

b. The Project will not damage scenic visual character or quality because new activities are complementing existing operations.

c. See 1b above.

d. The Project may create a new source of light during well construction, since well drilling occurs around the clock. However, this will be a temporary effect.

II. **Agriculture Resources.**

a. No farmland will be taken out of production as a result of construction and acquisition of assets proposed under this Project.

b. No. None of the lands at the Project locations proposed for facility construction are under a Williamson Act contract.

c. No

III. **Air Quality.**

a. The project will result in increased air emissions from vehicles and equipment during the construction and operation and maintenance periods. However, the emissions will be short term and no more than from existing urban and agricultural activities.

b. During construction and operation, the Project will not result in violation of any air quality standards or generate any objectionable odors.

c. The project is not expected to generate a cumulative net increase in any pollutant for which the region is in non-attainment under federal or state standards.

d. No.

e. No.

IV. Biological Resources.

a. No threatened or endangered, or other sensitive plant or wildlife species, pursuant to State and Federal Endangered Species Act, are known to be present at or near the proposed project sites. The project is not expected to reduce or enhance the diversity of native plants at the project site. All construction will occur in existing maintained right-of-way, or on actively farmed land, or on an area with an existing Habitat Conservation Plan permitted for such activity.

b. The Project will not have any adverse impact on riparian habitat or other sensitive natural communities. The Project may have a positive benefit on riparian habitat identified in the Kern River Parkway, since one of the goals of this Project is to maintain a wetted 12-mile stretch of Kern River Channel through the center of Bakersfield.

c. No federally protected wetlands pursuant Section 404 of the Clean Water Act will be impacted by the Project.

d. Construction and operation on project sites will not impact migration of fish, movement of native residents or wildlife species because construction and operation will occur on actively farmed areas or in existing maintained project right-of-ways areas.

e. No. In fact, the Project as proposed will complement existing polices and ordinances pertaining to the City of Bakersfield Kern River Parkway Plan and Environmental Impact Report adopted in 1988. No large trees, such as the heritage oak, will be removed by the Project.

f. It is the intent of the proposed project to the extent practical, to cooperate and complement the existing Metropolitan Bakersfield Habitat Conservation Plan and the Kern Water Bank Habitat Conservation Plan.

V. Cultural Resources.

a. Preliminary field reconnaissance surveys indicate that historical and archeological sites are present in areas of higher elevation on portions of project lands. However, no construction will occur on or near any known sites.

b. Based on the best information available to the Agency no impacted are expected..

c. No known paleoontological resource or unique geologic feature will be impacted.

d. Based on the best information available to the Agency no impacted are expected.

VI. Geology and Soils.

a. The Project as proposed will not expose people or structures to potential substantial adverse effects resulting from earthquakes, seismic ground shaking, seismic-related ground failure or landslides.

b. No

c. The project will not uncover or expose any unstable earth conditions and/or unstable geologic substructures or unit.

d. No.

e. No.

VII. Hazards and Hazardous Materials.

a. The project will not involve the use of any hazardous substances.

b. No.

c. No.

d. No.

e. No.

f. No.

g. No.

h. No.

VIII. Hydrology and Water Quality

a. No.

b. This project is designed to enhance local groundwater supplies by maximizing recharge and use of Kern River flood flows that would other be loss to the Kern County groundwater basin. During recharge periods, the project will change the absorption rate and pattern at the project where the recharge/regulation ponds are to be built, because water will be impounded in recharge ponds. Surface runoff patterns at the site will be slightly altered due to construction of the shallow ponds. Recovery of previously recharged groundwater will lower groundwater levels but not less than pre-project conditions. Over the term of the project, recovery of water will not be more than has been recharged by the project, after accounting for recharge losses. Therefore, nearby wells will not be impacted by the project, or will be mitigated to less than significant pursuant to the Kern Fan Monitoring Committee.

c. No.

d. Because the a purpose of the proposed project is to maximize recharge of flood and other Kern River water, flooding of the recharge ponds and the multipurpose recreational facility may occur during flood flows on the Kern River. The flooding will have no impact because

facilities are designed for this operation and this is expected to occur about 20% of the years.

e. No.

f. No.

g. No.

h. As has been previously described elsewhere in this section, the purpose of the project is to maximize opportunities for beneficial use of Kern River water that would otherwise be loss to the Kern County groundwater basin. As such, the project proposes to construct facilities that will divert, imped and redirect flood flows. However, any impacts to the environment will be less than significant.

i. No.

j. No.

IX. Land Use and Planning.

a. No

b. The Kern River Parkway Plan and EIR were adopted in 1988 by the City of Bakersfield. The natural site presently includes 1,400 acres along the majestic Kern River corridor extending from Manor Street on the northeast side of the City of Bakersfield to a point one mile below the Stockdale Highway bridge on the city's western edge. A bike path meanders alongside the course of the Kern River, providing for 12 miles of uninterrupted scenic activity. The primary benefits of the Parkway include flood control, water recharge and conservation, preservation and restoration of native riparian habitats and open space for greenbelt and recreational uses. The Kern River Parkway is a community project involving active, on-going public participation and has resulted in improved community image and attractiveness of the natural environment; a unique family oriented recreational area for all to enjoy. Major features of the Kern River Parkway include: 1) 320 acres of primary river channel; 2) 275 acres of natural and riparian land; 3) 460 acres of natural habitat for educational studies; 4) 25 acre Truxtun Lake Recharge Area; 5) 12 miles of uninterrupted bike path with 9 rest areas; 6) 8 miles of equestrian trails; 7) Multi-station exercise par course; 8) 3 professional quality sand volleyball courts; 9) 4 public parks with group picnic areas.

c. No. See response number IX b, above.

X. Mineral Resources

a. No.
b. No.

XI. Noise

a. Construction of new facilities and operation of well drilling equipment will temporarily increase local noise levels. Operation of wells in dry years may cause noise. However, noise levels are expected to be no greater than existing urban and agricultural activities and there are no noise-sensitive land uses in proximity to the proposed facilities that could be affected.

b. Persons living south of Stockdale Highway may be able to here elevated noise levels. See "a" above

c. No.

d. Yes. See answer XI a, above

e. No.

f. No.

XII. Population and Housing.

a. No.

b. No.

c. No.

XIII. Public Services.

a. The project as proposed will have no effect on any public service, including fire protection, police protection, schools, and parks, and/or other public facilities.

XIV. Recreation.

a. The Kern River Parkway adjacent to and at the center of the project and would be completed by the project. See answer to IX b above.

b. No.

XV. Transportation and Traffic.

a. There will be additional vehicular and truck traffic on local roads and highways, and on dirt roads within the project sites, during construction. However, the volume of this short-term traffic is expected to be very low and readily accommodated by available capacity on local public roads and highways.

b. The project will not alter existing public road systems or circulation patterns because no public road will be closed or re-aligned as a result of the project. Construction of the project may increase the number and location of private access roads within the sites.

c. No.

d. No.

e. No.

f. No.

g. No.

XVI. **Utilities and Services Systems.**

a. No.

b. No.

c. No.

d. Yes, the project proposes acquisition of the Lower Kern River right from the pre-1914 La Hacienda/Garces right.

e. No.

f. No.

g. Yes.

XVII. **Mandatory Findings of Significance.**

a. The project will not have an adverse effect on environment, substantially reduce the habitat of fish or wildlife populations, threaten or eliminate a plant or animal community, or adversely impact sensitive plants and wildlife, reduce the number or restrict the range of a rare or endangered plant or animal species. This is because the project as proposed will construct, operate and maintain facilities in existing maintained right-of-ways, farm land, areas having an existing Habitat Conservation Plan permitting the activities and/or areas not considered as habitat or occupied by threatened or endangered species or any sensitive species.

b. The project is designated to achieve long-term enhancement of local water supplies by increasing reliability of local supplies in the future. As such, the long-term environmental benefits of the project are primary. Project is to be implemented concurrent with similar ongoing projects by City of Bakersfield, Berrenda Mesa WD, Rosedale Rio-Bravo WSD, Buena Vista WSD, West Kern WD and the Kern Water Bank Authority. The proposed project could have cumulative impacts on ground water due to concurrent and overlapping impacts of these similar projects. Participation in the Kern Fan Monitoring Committee under

the Memorandum of Understanding regarding operation and monitoring of the Kern Water Bank ground water banking programs will oversee these projects and recommend measures to mitigate these impacts to less than significant.

c. The project does not have the environmental effects to potentially cause substantive adverse effects on human beings either directly or indirectly.

EXHIBIT A

KERN COUNTY WATER AGENCY
PROPOSED NEGATIVE DECLARATION

This is prepared pursuant to the California Environmental Quality Act of 1970 (CEQA), [1] and the State CEQA Guidelines, [2].

NAME OF PROJECT: Kern River Restoration and Water Supply Program.

PROPOSED PROJECT LOCATION: The Project is primarily located along the Kern River corridor from the projected extension of Haley Street on the east side, to the California Aqueduct on the west end, and south and west of Bakersfield in the unincorporated portion of the county along the Cross Valley Canal and Arvin-Edison Canal and including other local water conveyance facilities. Also, see attached Project location maps.

DESCRIPTION OF PROPOSED PROJECT: Summary. Project proposes to provide significant water quality, water supply, environmental and community benefits for the metropolitan Bakersfield area and a broad range of Kern County water users through the coordinated implementation of a number of program components including the: (1) acquisition of the Lower Kern River water right (Lower Right), i.e., Hacienda/Garces pre-1914 water right, including associated Lake Isabella Storage; (2) Purchase of land from Castle and Cooke California, Inc., for additional recharge and recovery facilities; (3) construction of 12 new water Ag recovery wells and enough Urban wells to achieve a maximum flow capacity of 60 cfs; and (4) Construction of water exchange facilities and modification of the Pool 1 portion of the Cross Valley Canal.

Expanded Description. See Initial Study for Proposed Project, attached.

FINDINGS WHICH SUPPORT NEGATIVE DECLARATION: After making an assessment of the possible impacts of the proposed Project and reviewing an Initial Study dated July 27, 2000, the Board of Directors of the Kern County Water Agency has determined that the proposed Project as presented will not have any significant effect on the environment, either directly or indirectly.

INITIAL STUDY: A copy of the Initial Study and environmental checklist prepared by Agency staff, dated July 27, 2000, is attached.

EXHIBIT A

MITIGATION MEASURES: Mitigation measures which have been incorporated into the proposed Project to avoid potentially significant environmental effects are as follows:

1. Throughout the term of the proposed Project, Project water quality, groundwater monitoring, and groundwater recharge losses will be consistent with the Memorandum of Understanding Regarding Operation and Monitoring of the Kern Water Bank Groundwater Banking Program, dated October 26, 1995, and consistent with the Operation and Monitoring Procedure for the Pioneer Project, dated May 28, 1998.

2. Project recharge and recovery well areas will be designed and located to avoid areas suspected to have hydrocarbon contamination, and to the extent practical, not to interfere with oil (crude or refined) or natural gas pipelines or other sensitive oilfield areas.

3. Project recharge and recovery well areas will be designed and located to minimize potential impacts to the Agency's Cross Valley Canal.

4. A mitigation, Monitoring and Reporting Program (attached as Exhibit D)

CONTACT PERSON, TELEPHONE NUMBER: Mr. Thomas N. Clark, General Manager, Kern County Water Agency, P.O. Box 58, Bakersfield, CA. 93302; (661)-634-1400. If you require additional information regarding this proposed Project, please contact Mr. Kane Totzke, Kern County Water Agency, (661) 634-1468; e-mail: kane@kcwa.com

Thomas N. Clark, General Manager

9-7-00
Date

1. Public Resources Code, Section 2100, et seq.

2. Title 14, Division 6, California Administrative Code, as amended.

EXHIBIT B
CEQA Notice of Determination

To: X Office of Planning and Research
1400 Tenth Street, Room 121
Sacramento, CA 95814

From: Kern County Water Agency
P.O. Box 58
3200 Rio Mirada Drive
Bakersfield, CA 93302

X County Clerk
County of Kern
1115 Truxton Ave., 1st Floor
Bakersfield, CA 93301-4639

Subject: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

Project Title: Kern River Restoration and Water Supply Program

State Clearinghouse Number: SCH #2000081017
(If submitted to Clearinghouse)

Lead Agency: Kern County Water Agency
Contact Person: Thomas N. Clark, General Manager
Telephone: (661) 634-1400

Project Location: See attached Negative Declaration.
(include county)

Project Description: See attached Negative Declaration.

This is to advise that on September 7, 2000, the Kern County Water Agency (as lead agency) approved the project (more particularly described in the attached Negative Declaration) and has determined that no additional environmental review is required.

An Initial Study and Subsequent Negative Declaration with findings were prepared for the Agency's recent action pursuant to the provisions of CEQA Guidelines sections 15070 through 15075 concluding that no additional environmental review is required. The recent action will not have any significant effect on the environment. Mitigation measures were made a condition of the Agency's recent action on the project. A Statement of Overriding Considerations was not adopted in connection with the Agency's recent action on this project.

This is to certify that the Initial Study with comments and responses and record of project approval is available to the general public at: Kern County Water Agency, P.O. Box 58, 3200 Rio Mirada Drive, Bakersfield, Kern County, CA 93302.

Signature, _____
Thomas N. Clark, General Manager, Kern County Water Agency

Date 9-7-00

Date received for filing at OPR: _____

EXHIBIT C

CALIFORNIA DEPARTMENT OF FISH AND GAME

CERTIFICATE OF FEE EXEMPTION

De Minimis Impact Finding

Project Title: Kern River Restoration and Water Supply Program

Location: Kern River Corridor area, fromMetropolitan Bakersfield to the California Aqueduct, Kern County

Project Description: This project will generate broad local water supply, environmental and community benefits, and targeted drinking water quality benefits within the metropolitan Bakersfield area.
The Project consists of the four components, generally described below.

1. Acquisition of the Kern River lower water right;
2. Construction of enough urban area wells to achieve a flow capacity of about 60 cfs;
3. Construction of water conveyance exchange facilities;
4. Construction and acquisition of local facilities to enhance groundwater recharge and recovery opportunities.

Findings of Exemption:

1. The project consists of water right transfer and minimal construction and/or modification of water transfer and exchange facilities.

2. The lead agency has no evidence before it, including the information in the Initial Study and comments of appropriate reviewing agencies, to indicate that the proposed project could have any potential for adverse effects on fish and wildlife resources.

Certification:

I hereby certify that the public agency has made the above finding(s) and that the project will not individually or cumulatively have an adverse effect on wildlife resources, as defined in Section 71.2 of the Fish and Game Code.

Date: September 7, 2000 Local Lead Agency: Kern County Water Agency

Title: General Manger Manager

EXHIBIT D

MITIGATION, MONITORING AND REPORTING PROGRAM

OVERVIEW

Comments received on the Proposed Negative Declaration regarding the Kern River Program highlight a significant feature of the design of the program: the program has been designed and will be implemented to comply with all aspects of existing law. Important laws with which the project has been designed to comply are the Federal Endangered Species Act, State Endangered Species Act, and a variety of laws and regulations governing water quality and impacts on legal users of water. While compliance with such laws and regulations is an integral feature of the program, the Agency understands that some entities would prefer a formal acknowledgment of intended compliance as a form of mitigation, and appropriate monitoring and reporting. Accordingly, the Agency agrees to clarify the following mitigation measures which are part of the program as designed and adopt appropriate monitoring and reporting measures.

MONITORING & REPORTING FOR DESIGNED MITIGATION ELEMENTS

1. ADOPTED MITIGATION ELEMENT: Federal and State Endangered Species Act

(a) Program Design:

The program has been designed to avoid any impact on known endangered or threatened species, federal or state, or other species of concern. In the first instance, the program has been designed to have an extremely small footprint of disrupted land in the construction of facilities. Additionally, the facility construction will occur primarily on existing highly cultivated farmland or highly maintained rights of way in which it is unlikely that such species or their habitat will be encountered. Further, care will be utilized to have such locations examined by personnel knowledgeable in the identification of endangered and threatened

species and their habitat to ensure the avoidance of any impact. In the unlikely event that unavoidable impacts are encountered, the Agency will comply fully with Federal and State Endangered Species Acts to ensure that such impacts are mitigated to insignificance.

In summary, the Agency commits to full compliance with both Federal and State Endangered Species Act requirements. While no impact on such species is contemplated due to the design of the program, any unexpected impacts will be handled in full compliance with federal and state law.

(b) Monitoring & Reporting:

The General Manager is hereby directed to provide knowledgeable staff assistance, and consultants where required, to monitor the progress of construction and implementation to ensure compliance with federal and state endangered species laws and regulations.

(1) During the construction phase of the program, the General Manager shall report to the Board on a quarterly basis regarding the following:

- **(i)** The identification, if any, of any potentially impacted federal or state threatened or endangered species.
- **(ii)** Specification of all measures taken to avoid any impact on such species or on the habitat of such species.
- **(iii)** Where impact proves to be unavoidable, whether a project component was abandoned or whether sufficient mitigation measures were utilized to reduce the level of impact to insignificance.

(2) After construction, the General Manager shall include in annual reports to the Board the following:

- **(i)** Whether any potential significant impacts on federal or state endangered or threatened species have been identified, and
- **(ii)** What measures have been taken to reduce such potential impacts to

insignificance.

2. **ADOPTED MITIGATION ELEMENT: Injury to Rights of Legal Users of Water and Facilities**

(a) **Program Design:**

The program is designed to ensure that all water and facilities utilized by the program are obtained with full protection of the rights of existing legal users. Full compensation will be provided by the Agency where such rights of legal users of water or facilities are impaired, and absent such compensation such rights of legal users will not be impaired. This extends to the legal users of ground water as the program has been designed to avoid significant impact on such users. In the event of disputes regarding the existence of such impacts, the Agency will submit such disputes to the previously established Kern Fan Monitoring Committee for handling under established rules.

(b) **Monitoring and Reporting:**

The General Manager shall include in an annual report to the Board a report on the following items of concern:

(1) The alleged occurrence of any impact on the rights of legal users of water or facilities, including any alleged impacts on groundwater;

(2) The measures utilized to investigate such alleged impacts;

(3) The results of such investigation;

(4) The measures utilized to avoid impacts to such rights of legal users, or the measures utilized to reduce such impacts to insignificance.

3. **ADOPTED MITIGATION ELEMENT: Water Quality**

(a) **Program Design:**

The program is designed to avoid any potential adverse impacts on water quality. Utilization of the water rights acquired under the program will not significantly differ in water quality impacts from the existing uses of such water. The intent of

the program is to secure the benefits of Kern River water quality for drinking water quality and Kern County. The program will be operated to avoid significant adverse impact on the water quality available to any legal user of water.

(b) Monitoring and Reporting:

The General Manager shall include in an annual report to the Board of Directors the following items:

(1) A statement regarding the water quality status of the program during the prior year;

(2) An identification of all problem areas encountered, if any, and the measures taken to avoid any significant adverse impact on the water quality of any legal user of water.

GENERAL REPORTING REQUIREMENTS

The annual report referred to herein shall be prepared under the direction of the General Manager and a registered engineer of the State of California, in consultation with individual(s) knowledgeable in the identification of endangered or threatened species and their habitats. The report may include additional operational, and economic data of interest to the community, but at a minimum shall contain the information specified above as required elements of the report.

KERN COUNTY WATER AGENCY

Directors:

Fred L. Starrh
President
Division 1

Terry Rogers
Division 2

Peter Frick
Division 3

Michael Radon
Division 4

Adrienne J. Mathews
Division 5

Henry C. Garnett
Vice President
Division 6

Gene A. Lundquist
Division 7

Thomas N. Clark
General Manager

John F. Stovall
General Counsel

GROUNDWATER Kern River Program

August 29, 2000

Mr. Rob Quiring, District Manager
Kern Mosquito and Vector Control District
4705 Allen Road
Bakersfield, CA 93312

RE: Response to letter regarding CEQA compliance for the Kern River Restoration and Water Supply Program

Dear Mr. Quiring:

Thank you for your letter dated August 3, 2000 responding to the Kern County Water Agency's (Agency) Initial Study and Proposed Negative Declaration for the Kern River Restoration and Water Supply Program (Program). The Agency has reviewed your concerns expressed in the letter and outlined below is the Agency's response.

Under the Program , two (2) recharge ponds (10 acre and 5 acre) are proposed for construction, both located just east of Allen Road and near the Kern River Stockdale Highway bridge . A proposed 40 acre to 50 acre Soccer field to be constructed may be used for groundwater recharge in the wettest years on the Kern River. This proposed field is also located east of Allen Road and north of the Kern River near the Stockdale bridge. The recharge ponds will be operated very similar to the Truxtun Lake recharge ponds owned by the City of Bakersfield, which we understand have not created a mosquito concern to the surrounding community. The Soccer field will probably be operated by the North of the River Parks and Recreation District under an arrangement with the City of Bakersfield. The two recharge ponds may be jointly managed by the Agency's Improvement District No. 4 and the City of Bakersfield's Water Resources Department. The recharge ponds and Soccer field are planned as part of a community park under a residential and commercial development proposed by Castle and Cooke California, Inc.

As with other existing recharge basins under the Agency's control, we do not anticipate any concerns with mosquitoes , however, we will comply with any applicable regulations and cooperate with your District to address any concerns you may have, should any arise at some future time. Please contact Kane Totzke at (661) 634-1468 with any questions regarding this matter.

Sincerely,

Tom Clark
General Manger

Mailing Address:
P.O. Box 58
Bakersfield, CA 93302-0058
Phone: 661/634-1400
Fax: 661/634-1428

KR/KRP

TRUSTEES
STEVE FRANETOVICH
RICHARD FREELAND
ROY JOHNSON
MORRIS MAHLMANN
ROBERT MAYBORN
WILLIAM PROUT
J.B. SELVIDGE
DC. ZACHARY

MANAGER
ROBERT A. QUIRING
SUPERINTENDENT
TOM BLANTON

KERN
MOSQUITO AND VECTOR CONTROL DISTRICT

DISTRICT OFFICE
4705 ALLEN RD. BAKERSFIELD, CALIFORNIA 93312
PH: (661) 589-2744 FAX: (661) 589-4913 E MAIL: kmvcd@lightspeed.net

RECEIVED
TNC JFS JMB GLB LWF
AUG 16 2000
Kern County Water Agency
RBI DWM JWP SHR SMR ALL

August 3, 2000

Tom Clark, General Manager
Kern County Water Agency
P. O. Box 58
Bakersfield, California 93302-0058

RE: Kern River Restoration & Water Supply Project

Tom:

The District has several comments in regard to the recharge basins that would be constructed as part of this proposed project.

During years when groundwater recharge operations were being conducted, it would not be feasible to treat these basins by aircraft if they produced mosquitoes because of the proximity of residential areas and heavily-traveled roads (i.e Stockdale, Buena Vista, Allen). During the last couple of years when performing mosquito control operations, the District's airplane pilot has encountered increasing numbers of joggers, bikers, horseback riders, etc. in the "2800" and the other recharge areas west of Allen Road. These new basins will, also, attract similar attention by the public.

Ideally, vegetation in the basins would be managed in a manner that would allow the control of the aquatic stage of mosquitoes through the use of mosquitofish. Due to the size of these basins, treatment by ground rigs spraying around the perimeter would be ineffective. The use of insecticides in areas frequented by the public is a real challenge these days due to the increasingly negative reaction by people to pesticide usage in general.

Hopefully, these concerns will be considered by the Agency when the basins are constructed.

Sincerely,

Rob Quiring

Rob Quiring
District Manager

KERN COUNTY WATER AGENCY

Directors:

Fred L. Starrh
President
Division 1

Terry Rogers
Division 2

Peter Frick
Division 3

Michael Radon
Division 4

Adrienne J. Mathews
Division 5

Henry C. Garnett
Vice President
Division 6

Gene A. Lundquist
Division 7

Thomas N. Clark
General Manager

John F. Stovall
General Counsel

GROUNDWATER Kern River Program

August 29, 2000

Ms. Susan Jones
U.S. Fish and Wildlife Service
2800Cottage Way, W-2605
Sacramento, CA 95825

RE: Response to letter regarding CEQA compliance for the Kern River Restoration and Water Supply Program

Dear Ms. Jones:

Thank you for your letter dated August 21, 2000 responding to the Kern County Water Agency's (Agency) Initial Study and Proposed Negative Declaration for the Kern River Restoration and Water Supply Program (Program). We concur with the U.S. Fish and Wildlife Service's (Service) statement that the Program as proposed will provide environmental benefits to the local environment: the Agency believes the Program is an opportunity to secure environmental local benefits along the Kern River corridor for wildlife and the community of Bakersfield.

In response to the Service's concern regarding participation in the Metropolitan Bakersfield Habitat Conservation Plan (HCP), the Agency plans to comply with any regulations including those requiring participation in payment of habitat management fees, where applicable. We note however that,the Program facilities proposed for modification and/or construction taking place within the Metropolitan Bakersfield HCP are projects less than ten (10) acres in size undertaken for strictly public purposes and therefore exempt from the Habitat Management Fees, pursuant to the City of Bakersfield Ordinance 3556.

Other Program facilities, as described in the Initial Study and proposed Negative Declaration may occur on active farmland owned by the Agency, on well maintained right-of-ways owned by the Agency or other local water districts. These proposed facilities will have a very small footprint of permanently disturbed land, e.g., less than 1/10th of an acre disturbance per well site, in areas devoid of species subject to the Federal Endangered Species Act. Furthermore, since no take of threatened or endangered species will occur due to construction of facilities on farmland, fallow land, grazing land or natural land, the Agency believes no incidental take permit or compensation is required for the Program. The Agency will, of course, comply with the regulations if avoidance of impacts is not feasible.

Mailing Address:
P.O. Box 58
Bakersfield, CA 93302-0058
Phone: 661/634-1400
Fax: 661/634-1428

The Agency hopes this letter resolves any concerns you may have with the Program. Again, we believe the overall Program will secure significant water quality, water supply, environmental and community benefits to the citizens of the greater Bakersfield area. The Program will also complement and supplement the existing the Kern River Parkway Plan adopted by the City of Bakersfield in 1988 through cooperative water exchanges and groundwater recovery to keep the Kern River wet through the center of Bakersfield during the peak recreational months of May through September. Please contact Kane Totzke at (661) 634-1468 with any questions regarding this matter.

Sincerely,

Tom Clark
General Manager

GW/KKP

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, W-2605
Sacramento, California 95825

RECEIVED
AUG 2 1 2000
Kern County Water Agency

IN REPLY REFER TO:
1-1-00-TA-2553

August 14, 2000

Mr. Thomas N. Clark, General Manager
Kern County Water Agency
P.O. Box 58
Bakersfield, California 93302-0058

Subject: California Environmental Quality Act (CEQA) Compliance for the Kern River Restoration and Water Supply Program, Kern County, California

Dear Mr. Clark:

This is in response to your July 27, 2000, letter concerning the Initial Study and Proposed Draft Negative Declaration for the Kern River Restoration and Water Supply Program in Kern County, California. We understand from the materials enclosed with your letter that some of the property proposed for development is inside, and some is outside the boundaries of the Metropolitan Bakersfield Habitat Conservation Plan (HCP). We appreciate your efforts to provide water in the river channel for a greater part of the year, and we agree that this will enhance riparian vegetation and could provide habitat for some protected species in an area where they historically occurred, such as the least Bell's vireo (*Vireo bellii pusillus*) and southwestern willow flycatcher (*Empidonax traillii extimus*).

1 We expect that some parts of the project will occur within the boundaries of the Metropolitan Bakersfield HCP, and that fees will be paid into the habitat compensation fund. We think this should be mentioned in the Negative Declaration, as it is a mitigation under CEQA for effects on protected species. We are concerned about the effects of portions of the project outside the Metropolitan Bakersfield HCP on San Joaquin kit foxes (*Vulpes macrotis mutica*), Tipton kangaroo rats (*Dipodomys nitratoides nitratoides*), and blunt-nosed leopard lizards (*Gambelia silus*), which are protected under the Federal Endangered Species Act of 1973, as amended (Act). The map of the project mentions potential agricultural and urban area well sites, and installation of recharge ponds on an 80-acre parcel now belonging to Castle and Cooke. Kit fox are known to forage on, and disperse across natural land, fallow land, farmland in row crops, and grazing
2 land. Any construction of structures on farmland, fallow land, grazing land, or natural land likely will require compensation under the Act. No indication is given of the present land uses and

project footprints for portions of the project outside the MB HCP, so we cannot provide an adequate evaluation at this time.

Section 9 of the Act and its implementing regulations prohibit the "take" of federally listed fish and wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any listed wildlife species. "Harm" in this definition includes significant habitat modification or degradation where it actually kills or injures wildlife, by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR § 17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures. If a Federal agency is involved with the permitting, funding, or carrying out of the project, then initiation of formal consultation between that agency and the Service pursuant to section 7 of the Act is required if it is determined that the proposed project will adversely affect a listed species. Such a consultation would result in a biological opinion that addresses the anticipated effects of the project to the listed species and may authorize a limited level of incidental take. If a Federal agency is not involved with the project, and a listed species may be taken as a result of the project, then an incidental take permit pursuant to section 10(a)(1)(B) of the Act should be obtained. The Service may issue a permit upon completion of a satisfactory HCP for the listed species that would be subject to take as a result of the project. Applicants approved by the Service and the California Department of Fish and Game, as applicable, may satisfy the Act by buying credits and obtaining incidental take authority through the Kern Water Bank HCP and Master Permit.

While the Metropolitan Bakersfield HCP is not applicable to portions of the project outside its borders, it sets a precedent in Kern County for providing endangered species compensation for conversion of farmland to buildings and other structures. For example, we worked with the Kern County Planning Department in the development of the compensation measures that were required for the Rio Bravo Tomato Company plant, which was sited on row crop farmland.

We appreciate you contacting us about your proposed project. We would appreciate receiving more detailed information about the project concerning proposed construction locations and footprints, related access roads if any, and schedule. Thank you for your interest in conserving threatened and endangered species. Please contact Susan Jones or Peter Cross at (916) 414-6600 if you have any questions about this letter.

Sincerely,

Karen J. Miller

Karen J. Miller
Chief, Endangered Species Division

cc: Andy Gordus, CDFG, Fresno, California
Steve Strait, Kern County Planning Department
Cheryl Harding, Kern Water Bank Authority

GW/KRP
Govst/Rwqcb

California Regional Water Quality Control Board

Central Valley Region

Steven T. Butler, Chair

I. Hickox
ry for
onmental
otection

Fresno Branch Office
Internet Address: http://www.swrcb.ca.gov/~rwqcb5
3614 East Ashlan Avenue, Fresno, California 93726
Phone (559) 445-5116 • FAX (559) 445-5910

Gray Davis
Governor

RECEIVED
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AUG 25 2000
Kern County Water Agency

TNC ☐ JBS ☑ JMB ☑ GLB ☐ LWF ☐ ___ ☐
RBI ☑ DWM ☐ JWP ☐ SHR ☐ SMR ☐ ALL ☐
XC: Kane Rick

Mr. Thomas N. Clark, General Manager
Kern County Water Agency
P. O. Box 58
Bakersfield, CA 93302-0058

23 August 2000

SCH # 2000081017, KERN RIVER RESTORATION AND WATER SUPPLY PROJECT, KERN COUNTY

We have reviewed the Initial Study and Proposed Negative Declaration to provide groundwater and surface water augmentations to the Kern River as it flows through the City of Bakersfield. The augmentations will occur during the summer months and be used for recreation. We understand that the project will involve construction of new agricultural and urban wells, modification of existing water exchange facilities and, possibly, construction of an interconnection in the area of the Kern River.

If more than five acres will be disturbed, the construction activities will be subject to regulation under the General Construction Activity Storm Water Permit, State Water Resources Control Board Order No. 99-08-DWQ, National Pollutant Discharge Elimination System, General Permit No. CA000002 (general permit). A copy of the permit is enclosed. Before construction begins, a Notice of Intent to comply with the permit must be submitted to the State Water Resources Control Board at the address indicated in the permit, and a Storm Water Pollution Prevention Plan must be prepared. Further information regarding the storm water program is available at the State Board web site at: http://www.swrcb.ca.gov or you may call Jarma Bennett at (559) 445-6046.

If the construction activities will involve the discharge of dredged or fill material into navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the US Army Corps of Engineers. For more information, please call Kathy Norton with the US Army Corps of Engineers at (916) 557-5260.

If a permit is needed from the US Army Corps of Engineers, certification of conformance with water quality standards pursuant to Section 401 of the Clean Water Act will be needed. Enclosed is a summary of information that we would need to consider a request for water quality certification.

If you have any questions, please call Betty Yee of this office at (559) 445-5128.

Lonnie M. Wass

LONNIE M. WASS
Senior Engineer
RCE No. 38917

Enclosure

'LANNING DEPARTMENT
TED JAMES, AICP, Director
'700 "M" STREET, SUITE 100
AKERSFIELD, CA 93301-2323
hone: (661) 862-8600
FAX: (661) 862-8601 TTY Relay 1-800-735-2929
E-Mail: planning@co.kern.ca.us
eb Address: www.co.kern.ca.us/planning/info.htm

RESOURCE MANAGEMENT AGENCY
DAVID PRICE III, RMA DIRECTOR
Community Development Program Department
Engineering & Survey Services Department
Environmental Health Services Department
Planning Department
Roads Department

September 5, 2000

Tom Clark, General Manager
Kern County Water Agency
P.O. Box 58
Bakersfield CA 93302-0058

Re: Initial Study - Kern River Restoration and Water Supply Program

Dear Mr. Clark:

Thank you for the opportunity to review the Initial Study for this project. The Planning Department has no comments on this phase of the project. If you have any questions, please call Steve Strait at (661) 862-8643.

Very truly yours,

TED JAMES, AICP, Director
Kern County Planning Department

by Steve Strait, Associate Planner

Mr. Thomas N. Clark
August 31, 2000
Page 2

abandonment will be reviewed at that time. If the well cannot be identified, remedial operations may be required.

Thank you for the opportunity to comment on the initial study and proposed negative declaration. If you have questions, or require technical assistance or information, please contact Jack Truschel at the Bakersfield district office: 4800 Stockdale Highway, Suite 417, Bakersfield, CA 93309; or, phone (661) 322-4031. You may also call me at (916) 445-8733.

for Jason Marshall
Assistant Director

cc: Jack Truschel
Division of Oil, Gas, and Geothermal Resources, Bakersfield
Linda Campion
Division of Oil, Gas, and Geothermal Resources, Sacramento

DIRECTORS
WILLIAM D. PHILLIMORE
PRESIDENT
DAVID L. BARGER
VICE PRESIDENT
DAVID K. BANKER
SECRETARY
LARRY STARRH
TREASURER
ROBERT E. BAKER

BELRIDGE WATER STORAGE DISTRICT

J. PAUL HENDRIX
GENERAL MANAGER

WILLIAM C. KUHS
COUNSEL

September 6, 2000

Board of Directors
Kern County Water Agency
P. O. Box 58
Bakersfield, CA 93302-0058

Re: Funding for Kern River Restoration Project, Purchase of Lower River Rights and Associated Activities

Dear Sirs and Madam:

Further to the policy meeting of Tuesday, August 29, 2000, and the Belridge Water Storage District (BWSD) Board meeting held on September 5, 2000, I am writing to you on behalf of the Belridge Board of Directors.

We appreciate the recent efforts of the Kern County Water Agency (KCWA) staff to explain the project as it develops, and acknowledge that this is still an evolving program. While we support the general direction of the Agency in this instance, and in deed applaud the efforts of Agency staff which made such a project possible, we ask that during the finalization of the project that staff attempt to assure that the BWSD is no worse off in its access to banking operations or water than it was prior to the acquisition of the Lower River Rights by the KCWA.

We would also like to point out that currently BWSD has no opportunity to bank high flow river water in times of plenty, in order to withdraw such water during times of shortage. We would very much like to have access to some of this water.

While we know that there have been questions raised as to the equity of the distribution of the monies which, we understand, were originally intended to compensate for shortages on the State Water Project, we are sure that the KCWA Directors and staff will strive to be fair to all. We would hope, however, the substantial benefits that accrue to the City of Bakersfield from the project will lead to the City becoming further involved in water matters within the County. We believe that both the County and the City have

POST OFFICE BOX 1087 BAKERSFIELD, CALIFORNIA 93302-1087 TELEPHONE (661) 762-7316
FAX (661) 762-7223

suffered from the absence of the City on many of the discussions regarding water and how it effects the future of the County. Hopefully this will now change.

Please let us know if there are any questions on any of the above.

Sincerely,

William D. Phillimore
President

WDP/et

GOVERNOR'S OFFICE OF
Planning and Research

1400 Tenth Street • Sacramento, California 95814 • 916-445-0613

FACSIMILE TRANSMITTAL

Date: 9-7-00

Facsimile phone number: 661/634-1428

To: Kane Totzke

At: Kern County

From: Sheila - State Clearinghouse

Special instructions: Closing letter with comments for SCH #2000081017

State Clearinghouse Fax: 916-323-3018

Number of pages
(including cover page)

5

If you do not receive all the pages of this facsimile, please contact:

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse

Gray Davis
GOVERNOR

Steve Nissen
ACTING DIRECTOR

September 6, 2000

Kane Totzke
Kern County Water Agency
P.O. Box 58
3200 Rio Mirada Drive
Bakersfield, CA 93308

Subject: Kern River Restoration and Water Supply Program
SCH#: 2000081017

Dear Kane Totzke:

The State Clearinghouse submitted the above named Negative Declaration to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on September 5, 2000, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Terry Roberts

Terry Roberts
Senior Planner, State Clearinghouse

Enclosures
cc: Resources Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
916-445-0613 FAX 916-323-3018 WWW.OPR.CA.GOV/CLEARINGHOUSE.HTML

Document Details Report
State Clearinghouse Data Base

SCH# 2000081017
Project Title Kern River Restoration and Water Supply Program
Lead Agency Kern County Water Agency

Type **Neg** Negative Declaration

Description Acquisition of Kern River lower right, modification and construction of water conveyance, recharge and recovery facilities.

Lead Agency Contact

Name Kane Totzke
Agency Kern County Water Agency
Phone 661-634-1468 **Fax**
email
Address P.O. Box 58
3200 Rio Mirada Drive
City Bakersfield **State** CA **Zip** 93308

Project Location

County Kern
City Bakersfield
Region
Cross Streets Buena Vista Road
Parcel No.
Township 30 **Range** 26/25 **Section** all **Base** MDB&M

Proximity to:

Highways Stockdale Highway
Airports
Railways
Waterways Kern River
Schools
Land Use Agricultural

Project Issues

Reviewing Agencies Resources Agency; Department of Conservation; Department of Fish and Game, Region 4; Office of Historic Preservation; Department of Parks and Recreation; Reclamation Board; Department of Water Resources; Caltrans, District 6; Department of Health Services; State Water Resources Control Board, Division of Water Rights; Regional Water Quality Control Bd., Region 5 (Fresno); Native American Heritage Commission; State Lands Commission

Date Received 08/07/2000 **Start of Review** 08/07/2000 **End of Review** 09/05/2000

Note: Blanks in data fields result from insufficient information provided by lead agency.

State of California **The Resources Agency**

MEMORANDUM

To: Project Coordinator
Resources Agency

Date: August 31, 2000

CCS 19/5/00

Mr. Thomas N. Clark, General Manager
Kern County Water Agency
P.O. Box 58
Bakersfield, CA 93302-0058

RECEIVED
SEP 1 2000
STATE CLEARINGHOUSE

From: **Department of Conservation**
Office of Governmental and Environmental Relations

Subject: Initial Study and Proposed Negative Declaration for the Kern River Restoration and Water Supply Program, Kern County – **SCH #2000081017**

The Department of Conservation's Division of Oil, Gas and Geothermal Resources (Division) has reviewed the initial study for the referenced project. The Division supervises the drilling, maintenance, and plugging and abandonment of oil, gas and geothermal wells in California. We offer the following comments for your consideration.

The proposed project area encompasses all, or a portion of the following oil fields: Bellevue, Canal, Canfield Ranch, Fruitvale, Kern River, McClung, North Coles Levee, Strand, Stockdale and Ten Section. There are numerous plugged and abandoned, producing and injection wells within or in proximity to these fields. Proposed project construction includes water wells, water quality exchange facilities, and facilities to enhance groundwater recharge and recovery. The project also proposes mitigation measures such as avoiding areas suspected to have hydrocarbon contamination and, where practical, avoiding interference with petroleum pipelines and oilfield areas.

In support of these proposed mitigation measures, the Division recommends that the proposed construction projects be plotted accurately on the appropriate Division maps, and submitted to the Division's Bakersfield office for review. Upon receipt of the maps, the Division will provide locations of the affected wells. Also based on our review of the maps, the Division will convey information to the applicant on any applicable well work requirements. In addition, the Division requests that these oilfield wells be plotted accurately on all future maps related to this project, and that a legible copy of the final project map be submitted to the Division's Bakersfield office.

Finally, the Division district office in Bakersfield must be notified if excavation uncovers a previously plugged and abandoned well. If the well can be identified, its

abandonment will be reviewed at that time. If the well cannot be identified, remedial operations may be required.

Thank you for the opportunity to comment on the initial study and proposed negative declaration. If you have questions, or require technical assistance or information, please contact Jack Truschel at the Bakersfield district office: 4800 Stockdale Highway, Suite 417, Bakersfield, CA 93309; or, phone (661) 322-4031. You may also call me at (916) 445-8733.

for Jason Marshall
Assistant Director

cc: Jack Truschel
Division of Oil, Gas, and Geothermal Resources, Bakersfield
Linda Campion
Division of Oil, Gas, and Geothermal Resources, Sacramento

KERN COUNTY
WATER AGENCY

Directors:

Fred L. Starrh
President
Division 1

Terry Rogers
Division 2

Peter Frick
Division 3

Michael Radon
Division 4

Adrienne J. Mathews
Division 5

Henry C. Garnett
Vice President
Division 6

Gene A. Lundquist
Division 7

Thomas N. Clark
General Manager

John F. Stovall
General Counsel

GW/Kern River Program

September 7, 2000

Mr. Jack Truschel
Division of Oil, Gas, and Geothermal Resources
4800 Stockdale Highway, Suite 417
Bakersfield, CA 93309

RE: Response to letter regarding CEQA compliance for the Kern River Restoration and Water Supply Program

Dear Mr. Truchel:

Thank you for your letter dated August 31, 2000 responding to the Kern County Water Agency's (Agency) Initial Study and Proposed Negative Declaration for the Kern River Restoration and Water Supply Program (Program). The Agency has reviewed your concerns expressed in the letter and outlined below is the Agency's response.

Under the Program, up to 24 water production wells, several recharge areas and modifications to existing canal systems are proposed for construction. Site assessments will be made prior to construction to identify oil and gas wells. As part of the site assessments, the project facilities will be plotted on Division of Oil and Gas maps and submitted to you for review.

The Agency will also notify your office if the proposed Program activities uncover a previously plugged and abandoned oil or gas well. The Agency will comply with any other applicable regulations and cooperate with your District to address concerns you may have, should any arise at some future time. Please contact Rick Iger at 661/634-1469 with any questions regarding this matter.

Sincerely,

Tom Clark
General Manger

Mailing Address:
P.O. Box 58
akersfield, CA 93302-0058
Phone: 661/634-1400
Fax: 661/634-1428

KERN COUNTY
WATER AGENCY

Directors:

Fred L. Starrh
President
Division 1

Terry Rogers
Division 2

Peter Frick
Division 3

Michael Radon
Division 4

Adrienne J. Mathews
Division 5

Henry C. Garnett
Vice President
Division 6

Gene A. Lundquist
Division 7

Thomas N. Clark
General Manager

John F. Stovall
General Counsel

SECRETARY'S CERTIFICATE

I, Pam Bosworth, Secretary of the Board of Directors of the Kern County Water Agency, do hereby certify that the foregoing is a full, true and correct copy of Resolution No. 56-00 duly passed and adopted by said Board of Directors at an official meeting of the Board held on the 24th day of August 2000, by the following vote:

AYES: Garnett, Frick, Radon, Lundquist, Rogers & Mathews

NOES: None

ABSENT: None

Pam Bosworth

Secretary of the Board of Directors
of the Kern County Water Agency

SEAL:

Mailing Address:
P.O. Box 58
Bakersfield, CA 93302-0058
Phone: 661/634-1400
Fax: 661/634-1428

BEFORE THE BOARD OF DIRECTORS

OF THE

KERN COUNTY WATER AGENCY

In the matter of:
ACCEPTANCE OF PROPOSITION 13
GRANT FOR THE KERN RIVER
RESTORATION PROJECT, AUTHORIZATION
OF PRESIDENT TO EXECUTE AGREEMENT,
DESIGNATION OF PROJECT DIRECTOR FOR
ADMINISTRATION AND DWR LIAISON, AND
APPROVAL OF BUDGET, TIMELINE AND INVOICE
_____/

I, PAMELA BOSWORTH, Secretary of the Board of Directors of the Kern County Water Agency, of the County of Kern, State of California, do hereby certify that the following resolution proposed by Director Frick and seconded by Director Radon, was duly passed and adopted by said Board of Directors at an official meeting hereof this 24th day of August, 1998 by the following vote, to-wit:

Ayes: Garnett, Frick, Radon, Lundquist, Rogers & Mathews

Noes: None

Absent: Starrh

Secretary of the Board of Directors
of the Kern County Water Agency

Resolution No. 56-00

WHEREAS, the Governor's Budget Act for 2000, Chapter 52, Statutes of 2000 appropriated to the Department of Water Resources grant funds by budget item 3860-01-6027 for the Interim Water Supply and Water Quality Infrastructure and Management Subaccount to fund among other things the Kern River Restoration Project specified herein;

WHEREAS, DWR has proposed entry into an agreement with the Agency as demonstrated in attached Exhibit A to govern the grant and Agency acceptance thereof along with certain terms and conditions;

WHEREAS, the Agency is prepared to continue implementation of the project and has established a separate "Proposition 13 Fund" to allow for appropriate accounting of all income and expenditures of the project; and

WHEREAS, the General Manager has selected an Agency Executive Manager as Project Director.

NOW THEREFORE BE IT RESOLVED by the Board of Directors of the Kern County Water Agency that:

1. The foregoing recitals are found to be true and correct;

2. The Agency hereby accepts the offered $23 million dollar grant from the Department of Water Resources for the purposes of the project, and authorizes President Fred Starrh to enter into the Department of Water Resources proposed agreement attached as Exhibit A, subject to the approval of General Counsel as to form.

3. Assistant General Manager James M. Beck is designated as the Project Director to be the Agency's representative for the administration of the project and liaison with DWR for submission of required documents.

4. The proposed budget for the project attached as Exhibit B, and the proposed timeline for project development (conditioned upon CEQA compliance) attached as Exhibit C are hereby approved.

5. The Controller is directed to invoice the Department of Water Resources for the $23 million grant in accordance with the terms of the agreement, with the funds to be deposited in the Proposition 13 Fund and to maintain appropriate accounting for such funds in accordance with Generally Accepted Accounting Practices and the agreement.

EXHIBIT A

Advance Copy
Information Only

Mr. Fred L. Starrh, President
Board of Directors
Kern County Water Agency
Post Office Box 58
Bakersfield, California 93302-0058

Interim Water Supply Construction Grant Commitment –
Safe Drinking Water, Clean Water, Watershed Protection and
Flood Protection Act (Proposition 13, Chapter 9, Article 4)

Dear Mr. Starrh:

The Governor's Budget Act for 2000, Chapter 52, Statutes of 2000, appropriated to the Department of Water Resources local assistance grant funds in the amount of $161,544,000 by budget item 3860-01-6027, payable from the Interim Water Supply and Water Quality Infrastructure and Management Subaccount. The Kern County Water Agency's Kern River Restoration Project has been selected for funding from this appropriation. This letter agreement serves as our commitment of $23 million this project.

This letter sets forth the terms and conditions under which the transfer of funds will be made from DWR to KCWA. Before the funds can be transferred your agency must complete the following:

- Submit to DWR a formally adopted resolution of your governing body, accepting the grant, designating a representative to sign this letter agreement, and designating a Project Director to be your agency's representative for the administration of the project and liaison with DWR for submission of required documents.

- Sign and date both originals of this agreement and return one signed original to:

  Division of Planning & Local Assistance
  Department of Water Resources
  Post Office Box 942836
  Sacramento, California 94236-0001
  Attention: Linda Buchanan Herzberg

- Provide to DWR a copy of all memoranda of understanding or other cooperative agreements between your agency and all other participating agencies for the project.

DNA

DPLA/HEADQUARTERS ID:916-327-1648 AUG 18'00 16:22 No.018 P.0

Advance Copy
Information Only

- Provide to DWR an itemized budget projection of project costs and an invoice, on your letterhead, stating the purpose of the funds as outlined in this letter.

- Provide to DWR a detailed description of the proposed project, including a narrative description that details the project's purpose and defines the project scope. Include with your description a detailed list of project components to be funded by this grant and a time line for completion with major benchmarks noted. In addition, attach a map indicating the project location.

By signature of this letter agreement the Kern County Water Agency agrees to comply with the following terms and conditions for completion of your project:

1. Your agency agrees to faithfully and expeditiously perform or cause to be performed all project work, to apply State funds received only to eligible project costs and to expeditiously commence and to continue efficient and economical operation of the project in accordance with applicable law. You further agree to provide for all repairs, renewals, and replacements necessary to the efficient operation of the project; and to maintain in as good and efficient condition as upon its construction, ordinary and reasonable wear and depreciation excepted.

2. Your agency, its contractors, subcontractors, and their respective agents and employees required for performing any work in connection with the project shall act in an independent capacity and not as officers, employees or agents of the State.

3. Your agency is solely responsible for design, construction, operation and maintenance of the project.

4. Your agency shall be responsible for obtaining any and all permits, licenses and approvals required for the design, construction or operation of the project. You shall also be responsible for observing and complying with any applicable federal, state and local laws, rules or regulations affecting such work, specifically including, but not limited to, environmental, procurement and safety laws, rules, regulations and ordinances.

5. Your agency shall be responsible for work and for persons or entities engaged in work, including, but not limited to, subcontractors, suppliers and providers of services. You shall give personal supervision to any work required for the project or employ a competent representative with the authority to act for your agency. Your agency shall give attention to completion of the project, and shall keep work under control.

Advance Copy
Information Only

6. Your agency shall be responsible for any and all disputes arising out of its contracts for work on the project, including but not limited to bid disputes and payment disputes with your contractors and subcontractors. The State will not mediate disputes between your agency and any other entity concerning responsibility for performance of work.

7. During project planning and construction, your agency shall provide semiannual progress reports detailing the activities completed for the reporting period, the amount of funds expended and the purpose of those expenditures. The first report shall be due six (6) months from the date of your agency's signature on this letter agreement. Subsequent reports shall be due every six (6) months thereafter.

8. Your agency must comply with all applicable requirements of the California Environmental Quality Act and the National Environmental Policy Act and complete appropriate environmental documentation including, but not limited to, any required environmental impact reports, environmental impact statements, negative declarations, mitigation agreements and environmental permits, prior to beginning construction.

9. All contracts let for project construction shall be let by competitive bid procedures that assure award of the contract to the lowest responsible bidder, except as may be otherwise authorized under your agency's enabling authority.

10. Procurement of necessary supplies or equipment shall be undertaken in such a manner as to encourage fair and competitive treatment of potential suppliers.

11. The project shall be completed not later than March 8, 2009.

12. Upon completion of the project your agency shall provide for a final inspection and a written certification by a California Registered Civil Engineer that the project has been completed in accordance with final plans and specifications and any modifications thereto. Such certification shall be submitted to the State with a copy of the final report of project expenditures required in item 13 below. You shall keep on file, for the useful life of the project, as built plans and specifications for the project. Such documents shall be made available for inspection by the State upon reasonable notice.

13. Upon project completion your agency shall furnish to the State, within sixty (60) days, a final statement of incurred eligible costs.

14. The State shall withhold ten (10) percent of the total project funding until the audit report, required in item 20, is received and accepted by the State.

DPLA/HEADQUARTERS ID:916-327-1648 AUG 18'00 16:25 No.018 P.0

Advance Copy
Information Only

15. Within a period of sixty (60) days from project completion, your agency shall remit to the State any unexpended funds that were disbursed that were not needed to pay eligible project costs.

16. Pursuant to Government Code Section 8546.7, your agency and its subcontractors shall be subject to the examination and audit of the State for a period of three years after project completion. All of your records or those of your subcontractors shall be preserved for this purpose for at least three years after project completion.

17. Your agency shall account for the money disbursed separately from all other agency funds. You shall maintain audit and accounting procedures that are in accordance with generally accepted accounting principles and practices, consistently applied. You shall keep complete and accurate records of all receipts, disbursements, and interest earned on expenditures of such funds. Your agency shall require its contractors or subcontractors to maintain books, records, and other documents pertinent to their work in accordance with generally accepted accounting principles and practices. Records are subject to inspection by the State at any and all reasonable times, upon reasonable notice.

18. All money disbursed for your project shall be deposited, administered, and accounted for pursuant to the provisions of law applicable to your agency.

19. During regular office hours, each of the parties to this letter agreement and their duly authorized representatives shall have the right to inspect and to make copies of any books, records, or reports of either party pertaining to the project. Each of the parties shall maintain and shall make available at all times for such inspection accurate records of all its costs, disbursements, and receipts with respect to this project.

20. The State reserves the right to conduct an audit at any time between the execution of this letter agreement and the completion of the project, with the costs of such audit borne by the State. Within sixty (60) days of project completion, the State shall require your agency to conduct, at your agency=s expense, a final financial and compliance audit of revenue and expenditures. Such audit shall be conducted and a report prepared by an independent Certified Public Accountant in compliance with generally accepted auditing standards and California government auditing standards. Upon its completion, said report shall submitted to the State for review and acceptance.

21. The State shall have the right to inspect the work being performed at any and all reasonable times during project construction. This right shall extend to any subcontracts, and your agency shall include provisions ensuring such access in all its contracts or subcontracts entered into for completion of the

DPLR/HEADQUARTERS ID:916-327-1648 AUG 18'00 16:26 No.018 P.0

project.

22. Your agency shall not sell, abandon, lease, transfer, exchange, mortgage, hypothecate, or encumber in any manner whatsoever all or any portion of any real or other property necessarily connected or used in conjunction with the project, or with your agency's service of water, without prior approval of the State.

23. Your agency, its contractors and subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code, Section 12900 et seq.), the regulations promulgated thereunder (California Code of Regulations, Title 2, Section 7285.0 et seq.), the provisions of Article 9.5, Chapter 1, Part 1, Division 3, Title 2 of the Government Code (Government Code, Sections 11135-11139.5) and the regulations or standards adopted by the awarding State Agency to implement such article. Your agency, its contractors and subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement. Your agency shall include the nondiscrimination and compliance provisions of this clause in all contracts and subcontracts let for the construction of the project.

24. Your agency agrees, unless exempted, to comply with the nondiscrimination program requirements of Government Code, Section 12990, and Title 2, California Code of Regulations, Section 8103.

25. Your agency shall comply with the provisions of Section 3700 of the California Labor Code, requiring every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and you affirm that the agency will comply with such provisions before commencing the construction of the project and will make the agency=s contractors and subcontractors aware of this provision.

26. Your agency agrees to indemnify the State and its officers, agents, and employees against and to hold the same free and harmless from any and all claims, demands, damages, losses, costs, expenses, or liability due or incident to, either in whole or in part, and whether directly or indirectly, arising out of the project.

27. Your agency, its contractors or subcontractors agree to comply with the requirements of the Drug-Free Workplace Act of 1990 (Government Code 8350 et seq.) and have or will provide a drug-free workplace.

28. The agency agrees to comply with the Americans with Disabilities Act (ADA) of 1990, (42 U.S.C. 12101 et seq.), which prohibits discrimination on the basis of disability, as well as all applicable regulations and guidelines issued pursuant to the ADA.

DPLH/HEADQUARTERS ID:916-327-1648 AUG 18'00 16:27 No.018 P.07

Advance Copy
Information Only

Your expeditious handling of this letter agreement is appreciated. If you have any questions, please contact Linda Buchanan Herzberg at (916) 327-1663.

Approved as to Legal Form and Sufficiency:

Sincerely,

By:_____

Chief Counsel
Department of Water Resources

_____

William J. Bennett, Chief
Division of Planning and Local Assistance

Kern County Water Agency

By:_____ Date:_____

Title:_____

Enclosure

cc: Ms. Linda Adams
Chief Deputy Assembly Relations
Governor's Office, First Floor
Sacramento, California 95814

Honorable Jim Costa
Member of the Senate
State Capitol, Room 5100
Sacramento, California 95814

Honorable Abel Maldonado
Member of the Assembly
State Capitol, Room 4015
Sacramento, California 95814

will add other appropriate Reps.

Mr. Thomas N. Clark
General Manager
Kern County Water Agency
Post Office Box 58
Bakersfield, California 93302-0058

Advance Copy
Information Only

Mr. Rick Iger
Engineering and Operations Manager
Kern County Water Agency
Post Office Box 58
Bakersfield, California 93302-0058

Ms. Holly Melton
Kern County Water Agency
Post Office Box 58
Bakersfield, California 93302-0058

Kern River Program
Capital Budget Projection Summary

Item	Allotment ($ Million)
1) Purchase Water Supplies	
a) Garces undivided interest in Lower Kern River Right	2.5
b) Nickel portion of Lower Kern River Right	7.5
Subtotal	*10*
2) Urban Area Recharge and Recreational Facilities Enhancements	
a) Purchase Property	3
b) Facilities	0.1
Subtotal	*3.1*
3) Urban Area Recovery and Flow Restoration Facilities	
a) Wells	2.9
b) Conveyance	1
Subtotal	*3.9*
4) Exchange Facilities Improvements for Water Quality Benefits	
a) Intertie/Turnout Improvements	0.5
b) Pump Station Improvements	1.5
Subtotal	*2*
5) Banking Project Recovery Facilities Enhancements	
a) Recovery Facilities	1.4
b) Conveyance and Recharge Facilities	2.6
Subtotal	*4*
Total	**23**

GW/KRP
Gov St/Misc

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse

Gray Davis
GOVERNOR

Steve Nissen
ACTING DIRECTOR

ACKNOWLEDGEMENT OF RECEIPT

RECEIVED
AUG 21 2000
Kern County Water Agency

TNC ☐ JFS ☐ JMB ☐ GLB ☐ LWF ☐ ☐
~~BBH~~ ☐ DWM ☐ JWP ☐ SHR ☐ SMR ☐ ALL ☐
KFT

DATE: August 17, 2000

TO: Kane Totzke
Kern County Water Agency
P.O. Box 58
3200 Rio Mirada Drive
Bakersfield, CA 93308

RE: Kern River Restoration and Water Supply Program
SCH#: 2000081017

This is to acknowledge that the State Clearinghouse has received your environmental document for state review. The review period assigned by the State Clearinghouse is:

Review Start Date: August 7, 2000
Review End Date: September 5, 2000

We have distributed your document to the following agencies and departments:

Caltrans, District 6
Department of Conservation
Department of Fish and Game, Region 4
Department of Health Services
Department of Parks and Recreation
Department of Water Resources
Native American Heritage Commission
Office of Historic Preservation
Reclamation Board
Regional Water Quality Control Bd., Region 5 (Fresno)
Resources Agency
State Lands Commission
State Water Resources Control Board, Division of Water Rights

The State Clearinghouse will provide a closing letter with any state agency comments to your attention on the date following the close of the review period.

Thank you for your participation in the State Clearinghouse review process.

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
916-445-0613 FAX 916-323-3018 WWW.OPR.CA.GOV/CLEARINGHOUSE.HTML

KR/KRP

TRUSTEES
STEVE FRANETOVICH
RICHARD FREELAND
ROY JOHNSON
MORRIS MAHLMANN
ROBERT MAYBORN
WILLIAM PROUT
J.R. SELVIDGE
CC. ZACHARY

MANAGER
ROBERT A. QUIRING
SUPERINTENDENT
TOM PLANTON

KERN
MOSQUITO AND VECTOR CONTROL DISTRICT

DISTRICT OFFICE
4705 ALLEN RD. BAKERSFIELD, CALIFORNIA 93312
PH: (661) 589-2744 FAX: (661) 589-4913 E MAIL: kmvcd@lightspeed.net

RECEIVED
AUG 16 2000
Kern County Water Agency
TNC JFS JMB GLB LWF RBI DWM JWP SHR SMR ALL

August 3, 2000

Tom Clark, General Manager
Kern County Water Agency
P. O. Box 58
Bakersfield, California 93302-0058

RE: Kern River Restoration & Water Supply Project

Tom:

The District has several comments in regard to the recharge basins that would be constructed as part of this proposed project.

During years when groundwater recharge operations were being conducted, it would not be feasible to treat these basins by aircraft if they produced mosquitoes because of the proximity of residential areas and heavily-traveled roads (i.e Stockdale, Buena Vista, Allen). During the last couple of years when performing mosquito control operations, the District's airplane pilot has encountered increasing numbers of joggers, bikers, horseback riders, etc. in the "2800" and the other recharge areas west of Allen Road. These new basins will, also, attract similar attention by the public.

Ideally, vegetation in the basins would be managed in a manner that would allow the control of the aquatic stage of mosquitoes through the use of mosquitofish. Due to the size of these basins, treatment by ground rigs spraying around the perimeter would be ineffective. The use of insecticides in areas frequented by the public is a real challenge these days due to the increasingly negative reaction by people to pesticide usage in general.

Hopefully, these concerns will be considered by the Agency when the basins are constructed.

Sincerely,

Rob Quiring

Rob Quiring
District Manager

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, W-2605
Sacramento, California 95825

RECEIVED
AUG 21 2000
Kern County Water Agency

IN REPLY REFER TO:
1-1-00-TA-2553

August 14, 2000

Mr. Thomas N. Clark, General Manager
Kern County Water Agency
P.O. Box 58
Bakersfield, California 93302-0058

Subject: California Environmental Quality Act (CEQA) Compliance for the Kern River Restoration and Water Supply Program, Kern County, California

Dear Mr. Clark:

This is in response to your July 27, 2000, letter concerning the Initial Study and Proposed Draft Negative Declaration for the Kern River Restoration and Water Supply Program in Kern County, California. We understand from the materials enclosed with your letter that some of the property proposed for development is inside, and some is outside the boundaries of the Metropolitan Bakersfield Habitat Conservation Plan (HCP). We appreciate your efforts to provide water in the river channel for a greater part of the year, and we agree that this will enhance riparian vegetation and could provide habitat for some protected species in an area where they historically occurred, such as the least Bell's vireo (*Vireo bellii pusillus*) and southwestern willow flycatcher (*Empidonax traillii extimus*).

We expect that some parts of the project will occur within the boundaries of the Metropolitan Bakersfield HCP, and that fees will be paid into the habitat compensation fund. We think this should be mentioned in the Negative Declaration, as it is a mitigation under CEQA for effects on protected species. We are concerned about the effects of portions of the project outside the Metropolitan Bakersfield HCP on San Joaquin kit foxes (*Vulpes macrotis mutica*), Tipton kangaroo rats (*Dipodomys nitratoides nitratoides*), and blunt-nosed leopard lizards (*Gambelia silus*), which are protected under the Federal Endangered Species Act of 1973, as amended (Act). The map of the project mentions potential agricultural and urban area well sites, and installation of recharge ponds on an 80-acre parcel now belonging to Castle and Cooke. Kit fox are known to forage on, and disperse across natural land, fallow land, farmland in row crops, and grazing land. Any construction of structures on farmland, fallow land, grazing land, or natural land likely will require compensation under the Act. No indication is given of the present land uses and

project footprints for portions of the project outside the MB HCP, so we cannot provide an adequate evaluation at this time.

Section 9 of the Act and its implementing regulations prohibit the "take" of federally listed fish and wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any listed wildlife species. "Harm" in this definition includes significant habitat modification or degradation where it actually kills or injures wildlife, by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR § 17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures. If a Federal agency is involved with the permitting, funding, or carrying out of the project, then initiation of formal consultation between that agency and the Service pursuant to section 7 of the Act is required if it is determined that the proposed project will adversely affect a listed species. Such a consultation would result in a biological opinion that addresses the anticipated effects of the project to the listed species and may authorize a limited level of incidental take. If a Federal agency is not involved with the project, and a listed species may be taken as a result of the project, then an incidental take permit pursuant to section 10(a)(1)(B) of the Act should be obtained. The Service may issue a permit upon completion of a satisfactory HCP for the listed species that would be subject to take as a result of the project. Applicants approved by the Service and the California Department of Fish and Game, as applicable, may satisfy the Act by buying credits and obtaining incidental take authority through the Kern Water Bank HCP and Master Permit.

While the Metropolitan Bakersfield HCP is not applicable to portions of the project outside its borders, it sets a precedent in Kern County for providing endangered species compensation for conversion of farmland to buildings and other structures. For example, we worked with the Kern County Planning Department in the development of the compensation measures that were required for the Rio Bravo Tomato Company plant, which was sited on row crop farmland.

We appreciate you contacting us about your proposed project. We would appreciate receiving more detailed information about the project concerning proposed construction locations and footprints, related access roads if any, and schedule. Thank you for your interest in conserving threatened and endangered species. Please contact Susan Jones or Peter Cross at (916) 414-6600 if you have any questions about this letter.

Sincerely,

Karen J. Miller

Karen J. Miller
Chief, Endangered Species Division

cc: Andy Gordus, CDFG, Fresno, California
Steve Strait, Kern County Planning Department
Cheryl Harding, Kern Water Bank Authority

PLANNING DEPARTMENT
TED JAMES, AICP, Director
2700 "M" STREET, SUITE 100
BAKERSFIELD, CA 93301-2323
Phone: (661) 862-8600
FAX: (661) 862-8601 TTY Relay 1-800-735-2929
E-Mail: planning@co.kern.ca.us
Web Address: www.co.kern.ca.us/planning/info.htm

RESOURCE MANAGEMENT AGENCY
DAVID PRICE III, RMA DIRECTOR
Community Development Program Department
Engineering & Survey Services Department
Environmental Health Services Department
Planning Department
Roads Department

FACSIMILE TRANSMITTAL SHEET

FAX SERVICE FROM: **KERN COUNTY PLANNING DEPARTMENT**

SENT BY: Steve Strait
Name of Sender

****

Date: 9-5-00

FAX NO. _____

TO: KCWA
Company

ATTN: Tom Clark

2 TOTAL PAGES (Including this cover sheet)

COMMENTS: Original to follow in mail.

h:\jvb\planning\faxsht

'LANNING DEPARTMENT
TED JAMES, AICP, Director
700 "M" STREET, SUITE 100
AKERSFIELD, CA 93301-2323
. hone: (661) 862-8600
FAX: (661) 862-8601 TTY Relay 1-800-735-2929
E-Mail: planning@co.kern.ca.us
eb Address: www.co.kern.ca.us/planning/info.htm

RESOURCE MANAGEMENT AGENCY
DAVID PRICE III, RMA DIRECTOR
Community Development Program Department
Engineering & Survey Services Department
Environmental Health Services Department
Planning Department
Roads Department

September 5, 2000

Tom Clark, General Manager
Kern County Water Agency
P.O. Box 58
Bakersfield CA 93302-0058

Re: Initial Study - Kern River Restoration and Water Supply Program

Dear Mr. Clark:

Thank you for the opportunity to review the Initial Study for this project. The Planning Department has no comments on this phase of the project. If you have any questions, please call Steve Strait at (661) 862-8643.

Very truly yours,

TED JAMES, AICP, Director
Kern County Planning Department

by Steve Strait, Associate Planner

KERN COUNTY
WATER AGENCY

MEMORANDUM

GROUNDWATER krp
Agency B. of D.

TO: Kern County Water Agency Board of Directors
Agenda Item No. 1

FROM: John Stovall/Kane Totzke KT

DATE: September 7, 2000

SUBJECT: Agency adoption of a Negative Declaration pursuant to CEQA Guideline section 15072 for the Kern River Restoration Program

Issue:
Consider adoption of the draft Negative Declaration for the Kern River Restoration and Water Supply Program.

Recommended Motion:
At the close of the public hearing and absent any significant comments or testimony received at the hearing, adopt Resolution 59-00 entitled *Determinations and Findings with Respect to the Kern River Restoration and Water Supply Program*, thereby approving the Negative Declaration.

Discussion
At the July 27, 2000, meeting, the Board reviewed an Initial Study, Environmental Checklist, Response to Checklist prepared by staff for the Kern River Restoration and Water Supply Program. The Board also authorized the publication of the "Notice of Intent" to adopt a Negative Declaration and distribution of the documents to interested parties and responsible agencies for comments. During the public review period, the Agency has held a number of meetings with local water districts to address concerns and resolve outstanding issues regarding the proposed Project. As a result of the meeting and to resolve those issues the Agency is proposing to include a Mitigation, Monitoring and Reporting Program as part of the Negative Declaration. The Agency has also received a number of written comments from responsible agencies and these together with our responses are incorporated in the Negative Declaration, which will all be discussed in more detail at the public hearing.

At the public hearing, the Board will receive any additional comments on the environmental assessment of the Project and absent any significant comments or testimony received at the hearing, adopt Resolution 59-00, approving the Negative Declaration for the Project.

D:\WPDOCS\Sep00\bai1.wpd

BEFORE THE BOARD OF DIRECTORS

OF THE

KERN COUNTY WATER AGENCY

In the Matter of:
DETERMINATIONS AND FINDINGS *
WITH RESPECT TO THE *
KERN RIVER RESTORATION AND *
AND WATER SUPPLY PROGRAM *

I, Pam Bosworth, Secretary of the Board of Directors to the Kern County Water Agency, of the County of Kern, State of California, do hereby certify that the following resolution proposed by Director _____ and seconded by Director _____, was duly passed and adopted by said Board of Directors at an official meeting hereof this ___day of _____, 2000, by the following vote, to wit:

Ayes:

Noes:

Absent:

_____
Secretary of the Board of Directors
of the Kern County Water Agency

RESOLUTION NO. 59-00

WHEREAS, the Board of Directors (the "Board") of the Kern County Water Agency (the "Agency") has had prepared, circulated and presented to it, and has reviewed and considered an Initial Study, Environmental Checklist, dated July 27, 2000, and a proposed Negative Declaration (Exhibit "A") attached thereto, all pertaining to the Kern River Restoration and Water Supply Program; and

WHEREAS, the Agency has received comments from several responsible agencies and interested parties and incorporated those comments, together with the Agency's response to those comments, in the appendix of the Negative Declaration; and

WHEREAS, the Agency has incorporated into and made part of the Negative Declaration, a Mitigation, Monitoring and Reporting Program that satisfactorily addresses the Federal and State Endangered Species Act, Injury to Rights of Legal Users of Water and Water Quality issues; and

WHEREAS, in recognition of the Agency securing the $23 million grant pursuant to Proposition 13, the Agency will continue to work with the Member Units and other local water districts to acquire additional grants and loans for the purpose of constructing water supply and/or water management facilities in Kern County.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Agency as follows:

The Board hereby finds and determines that the foregoing recitals, are true and correct.

1. Section 1, Review of Evidence

The Board has reviewed and considered the contents of the Initial Study and proposed Negative Declaration, the presentation to the Board made by staff pertaining to same, and the comments received from the public both during a public hearing conducted by the Board on September 7, 2000 and received during the required environmental review period; and

2. Section 2, Approval of Negative Declaration

Based upon the afore-described evidence, the Board hereby finds;

a) that there is no substantial evidence that the Kern River Restoration and Water Supply Program with the mitigation measures provided therein will have a significant effect on the environment;

b) that the mitigation measures therein are incorporated within the scope of the project, and the project as defined will not have a significant effect on the environment. Therefore, in accordance with such findings, the Board approves the Negative Declaration submitted in conjunction with the Initial Study and hereby

directs staff to prepare and file a Notice of Determination (in the form attached hereto as Exhibit "B") in compliance with the California Environmental Quality Act (Public Resources Code Sections 21000, et seq.); and

3. Section 3. Finding of No Impact on Wildlife

The Board hereby further finds that, when considering the record as a whole, there is no substantial evidence before the Board that the proposed Project will have potential for an adverse effect on wildlife resources or the habitat upon which the wildlife depends on. As such, the Board directs the General manager to sign a Certificate of a De Minimis Impact Finding exempting payment of the $1,250 Department of Fish and Game fee (in the form attached hereto as Exhibit "C"). If subsequent information becomes available indicating potential impacts to Federal and State listed or sensitive species as defined under the State and Federal Endangered Species Act, the Agency will comply with all mandatory State and Federal laws.

4. Section 4, Mitigation, Monitoring and Reporting Program

The Board hereby incorporates the Mitigation, Monitoring and Reporting Program (in the form attached hereto as Exhibit "D") to address concerns with local water districts regarding water use, distribution of benefits and water quality.

5. Section 5, Continued efforts towards securing Proposition 13 funds

The Board hereby directs staff to continue working , in a timely manner, with Member Units and other local Kern County water districts towards maximizing the acquisition additional Proposition 13 grants and loans for local water supply projects and/or other water management projects as deemed appropriate by the General manager.

EXHIBIT A

KERN COUNTY WATER AGENCY
PROPOSED NEGATIVE DECLARATION

This is prepared pursuant to the California Environmental Quality Act of 1970 (CEQA), [1] and the State CEQA Guidelines, [2].

NAME OF PROJECT: Kern River Restoration and Water Supply Program.

PROPOSED PROJECT LOCATION: The Project is primarily located along the Kern River corridor from the projected extension of Haley Street on the east side, to the California Aqueduct on the west end, and south and west of Bakersfield in the unincorporated portion of the county along the Cross Valley Canal and Arvin-Edison Canal and including other local water conveyance facilities. Also, see attached Project location maps.

DESCRIPTION OF PROPOSED PROJECT: Summary. Project proposes to provide significant water quality, water supply, environmental and community benefits for the metropolitan Bakersfield area and a broad range of Kern County water users through the coordinated implementation of a number of program components including the: (1) acquisition of the Lower Kern River water right (Lower Right), i.e., Hacienda/Garces pre-1914 water right, including associated Lake Isabella Storage; (2) Purchase of land from Castle and Cooke California, Inc., for additional recharge and recovery facilities; (3) construction of 12 new water Ag recovery wells and enough Urban wells to achieve a maximum flow capacity of 60 cfs; and (4) Construction of water exchange facilities and modification of the Pool 1 portion of the Cross Valley Canal.

Expanded Description. See Initial Study for Proposed Project, attached.

FINDINGS WHICH SUPPORT NEGATIVE DECLARATION: After making an assessment of the possible impacts of the proposed Project and reviewing an Initial Study dated July 27, 2000, the Board of Directors of the Kern County Water Agency has determined that the proposed Project as presented will not have any significant effect on the environment, either directly or indirectly.

INITIAL STUDY: A copy of the Initial Study and environmental checklist prepared by Agency staff, dated July 27, 2000, is attached.

EXHIBIT A

MITIGATION MEASURES: Mitigation measures which have been incorporated into the proposed Project to avoid potentially significant environmental effects are as follows:

1. Throughout the term of the proposed Project, Project water quality, groundwater monitoring, and groundwater recharge losses will be consistent with the Memorandum of Understanding Regarding Operation and Monitoring of the Kern Water Bank Groundwater Banking Program, dated October 26, 1995, and consistent with the Operation and Monitoring Procedure for the Pioneer Project, dated May 28, 1998.

2. Project recharge and recovery well areas will be designed and located to avoid areas suspected to have hydrocarbon contamination, and to the extent practical, not to interfere with oil (crude or refined) or natural gas pipelines or other sensitive oilfield areas.

3. Project recharge and recovery well areas will be designed and located to minimize potential impacts to the Agency's Cross Valley Canal.

4. A mitigation, Monitoring and Reporting Program (attached as Exhibit C)

CONTACT PERSON, TELEPHONE NUMBER: Mr. Thomas N. Clark, General Manager, Kern County Water Agency, P.O. Box 58, Bakersfield, CA. 93302; (661)-634-1400. If you require additional information regarding this proposed Project, please contact Mr. Kane Totzke, Kern County Water Agency, (661) 634-1468; e-mail: kane@kcwa.com

_____ _____

Thomas N. Clark, General Manager Date

1. Public Resources Code, Section 2100, et seq.

2. Title 14, Division 6, California Administrative Code, as amended.

KERN COUNTY
WATER AGENCY

Directors:

Fred L. Starrh
President
Division 1

Terry Rogers
Division 2

Peter Frick
Division 3

Michael Radon
Division 4

Adrienne J. Mathews
Division 5

Henry C. Garnett
Vice President
Division 6

Gene A. Lundquist
Division 7

Thomas N. Clark
General Manager

John F. Stovall
General Counsel

GROUNDWATER krp

September 7, 2000

Ms. Karen Fowler
Office of the Governor
Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, Ca 95812-3044

RE: SCH # 2000081017 - Notice of Determination and De Minimis Impact Finding

Dear Ms. Fowler:

Transmitted herein are the Kern County Water Agency's (Agency) "Notice of Determination" and a "California Department of Fish and Game Certificate of Fee Exemption -De Minimis Impact Finding" for the *Kern River Restoration and Water Supply Program* Negative Declaration. The Agency Board of Directors took action to adopt the Negative Declaration at a meeting held on September 7, 2000. The De Minimis Impact finding exempts the Agency from the $1,250 filing fee. Please contact Kane Totzke at 661-634-1468 with any questions regarding this matter.

Sincerely,

Tom Clark
General Manager

enclosures

cc: Office of the County Clerk (Kern)

Mailing Address:
P.O. Box 58
Bakersfield, CA 93302-0058
Phone: 661/634-1400
Fax: 661/634-1428

EXHIBIT B
CEQA Notice of Determination

X Office of Planning and Research
1400 Tenth Street, Room 121
Sacramento, CA 95814

From: Kern County Water Agency
P.O. Box 58
3200 Rio Mirada Drive
Bakersfield, CA 93302

X County Clerk
County of Kern
1115 Truxton Ave., 1st Floor
Bakersfield, CA 93301-4639

ect: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

oject Title: Kern River Restoration and Water Supply Program

e Clearinghouse Number: SCH #2000081017
submitted to Clearinghouse)

l Agency: Kern County Water Agency
tact Person: Thomas N. Clark, General Manager
elephone: (661) 634-1400

ect Location: See attached Negative Declaration.
ude county)

oject Description: See attached Negative Declaration.

is to advise that on September 7, 2000, the Kern County Water Agency (as lead agency) approved the project (more particularly escribed in the attached Negative Declaration) and has determined that no additional environmental review is required.

nitial Study and Subsequent Negative Declaration with findings were prepared for the Agency's recent action pursuant to the visions of CEQA Guidelines sections 15070 through 15075 concluding that no additional environmental review is required. The cent action will not have any significant effect on the environment. Mitigation measures were made a condition of the Agency's cent action on the project. A Statement of Overriding Considerations was not adopted in connection with the Agency's recent action his project.

his is to certify that the Initial Study with comments and responses and record of project approval is available to the general public at: ern County Water Agency, P.O. Box 58, 3200 Rio Mirada Drive, Bakersfield, Kern County, CA 93302.

ignature, _____
Thomas N. Clark, General Manager, Kern County Water Agency

Date _____

e received for filing at OPR: _____

EXHIBIT C

CALIFORNIA DEPARTMENT OF FISH AND GAME

CERTIFICATE OF FEE EXEMPTION

De Minimis Impact Finding

Project Title: Kern River Restoration and Water Supply Program

Location: Kern River Corridor area, fromMetropolitan Bakersfield to the California Aqueduct, Kern County

Project Description: This project will generate broad local water supply, environmental and community benefits, and targeted drinking water quality benefits within the metropolitan Bakersfield area.
The Project consists of the four components, generally described below.

1. Acquisition of the Kern River lower water right;
2. Construction of enough urban area wells to achieve a flow capacity of about 60 cfs;
3. Construction of water conveyance exchange facilities;
4. Construction and acquisition of local facilities to enhance groundwater recharge and recovery opportunities.

Findings of Exemption:

1. The project consists of water right transfer and minimal construction and/or modification of water transfer and exchange facilities.

2. The lead agency has no evidence before it, including the information in the Initial Study and comments of appropriate reviewing agencies, to indicate that the proposed project could have any potential for adverse effects on fish and wildlife resources.

Certification:

I hereby certify that the public agency has made the above finding(s) and that the project will not individually or cumulatively have an adverse effect on wildlife resources, as defined in Section 71.2 of the Fish and Game Code.

Date: September 7, 2000 Local Lead Agency: Kern County Water Agency

_____

Title: General Manger Manager

EXHIBIT D

MITIGATION, MONITORING AND REPORTING PROGRAM

OVERVIEW

Comments received on the Proposed Negative Declaration regarding the Kern River Program highlight a significant feature of the design of the program: the program has been designed and will be implemented to comply with all aspects of existing law. Important laws with which the project has been designed to comply are the Federal Endangered Species Act, State Endangered Species Act, and a variety of laws and regulations governing water quality and impacts on legal users of water. While compliance with such laws and regulations is an integral feature of the program, the Agency understands that some entities would prefer a formal acknowledgment of intended compliance as a form of mitigation, and appropriate monitoring and reporting. Accordingly, the Agency agrees to clarify the following mitigation measures which are part of the program as designed and adopt appropriate monitoring and reporting measures.

MONITORING & REPORTING FOR DESIGNED MITIGATION ELEMENTS

1. ADOPTED MITIGATION ELEMENT: Federal and State Endangered Species Act

(a) Program Design:

The program has been designed to avoid any impact on known endangered or threatened species, federal or state, or other species of concern. In the first instance, the program has been designed to have an extremely small footprint of disrupted land in the construction of facilities. Additionally, the facility construction will occur primarily on existing highly cultivated farmland or highly maintained rights of way in which it is unlikely that such species or their habitat will be encountered. Further, care will be utilized to have such locations examined by personnel knowledgeable in the identification of endangered and threatened

insignificance.

2. **ADOPTED MITIGATION ELEMENT: Injury to Rights of Legal Users of Water and Facilities**

(a) **Program Design:**

The program is designed to ensure that all water and facilities utilized by the program are obtained with full protection of the rights of existing legal users. Full compensation will be provided by the Agency where such rights of legal users of water or facilities are impaired, and absent such compensation such rights of legal users will not be impaired. This extends to the legal users of ground water as the program has been designed to avoid significant impact on such users. In the event of disputes regarding the existence of such impacts, the Agency will submit such disputes to the previously established Kern Fan Monitoring Committee for handling under established rules.

(b) **Monitoring and Reporting:**

The General Manager shall include in an annual report to the Board a report on the following items of concern:

(1) The alleged occurrence of any impact on the rights of legal users of water or facilities, including any alleged impacts on groundwater;

(2) The measures utilized to investigate such alleged impacts;

(3) The results of such investigation;

(4) The measures utilized to avoid impacts to such rights of legal users, or the measures utilized to reduce such impacts to insignificance.

3. **ADOPTED MITIGATION ELEMENT: Water Quality**

(a) **Program Design:**

The program is designed to avoid any potential adverse impacts on water quality. Utilization of the water rights acquired under the program will not significantly differ in water quality impacts from the existing uses of such water. The intent of

the program is to secure the benefits of Kern River water quality for drinking water quality and Kern County. The program will be operated to avoid significant adverse impact on the water quality available to any legal user of water.

(b) Monitoring and Reporting:

The General Manager shall include in an annual report to the Board of Directors the following items:

(1) A statement regarding the water quality status of the program during the prior year;

(2) An identification of all problem areas encountered, if any, and the measures taken to avoid any significant adverse impact on the water quality of any legal user of water.

GENERAL REPORTING REQUIREMENTS

The annual report referred to herein shall be prepared under the direction of the General Manager and a registered engineer of the State of California, in consultation with individual(s) knowledgeable in the identification of endangered or threatened species and their habitats. The report may include additional operational, and economic data of interest to the community, but at a minimum shall contain the information specified above as required elements of the report.

KR/KRP

TRUSTEES
STEVE FRANSTOVICH
RICHARD FREELAND
ROY JOHNSON
MORRIS MARLMANN
ROBERT MAYBORN
WILLIAM PRUIT
J.B. SELVIDGE
DC. ZACHARY

MANAGER
ROBERT A. QUIRING
SUPERINTENDENT
TOM BLANTON

KERN
MOSQUITO AND VECTOR CONTROL DISTRICT
DISTRICT OFFICE
4705 ALLEN RD. BAKERSFIELD, CALIFORNIA 93312
PH: (661) 589-2744 FAX: (661) 589-4913 E MAIL: kmvcd@lightspeed.net

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Kern County Water Agency
TNC ☑ JFS ☐ JMB ☑ GLB ☐ LWF ☐ ____ ☐
RBI ☑ DWM ☐ JWP ☐ SHR ☐ SMR ☐ ALL ☐

August 3, 2000

Tom Clark, General Manager
Kern County Water Agency
P. O. Box 58
Bakersfield, California 93302-0058

RE: Kern River Restoration & Water Supply Project

Tom:

The District has several comments in regard to the recharge basins that would be constructed as part of this proposed project.

During years when groundwater recharge operations were being conducted, it would not be feasible to treat these basins by aircraft if they produced mosquitoes because of the proximity of residential areas and heavily-traveled roads (i.e Stockdale, Buena Vista, Allen). During the last couple of years when performing mosquito control operations, the District's airplane pilot has encountered increasing numbers of joggers, bikers, horseback riders, etc. in the "2800" and the other recharge areas west of Allen Road. These new basins will, also, attract similar attention by the public.

Ideally, vegetation in the basins would be managed in a manner that would allow the control of the aquatic stage of mosquitoes through the use of mosquitofish. Due to the size of these basins, treatment by ground rigs spraying around the perimeter would be ineffective. The use of insecticides in areas frequented by the public is a real challenge these days due to the increasingly negative reaction by people to pesticide usage in general.

Hopefully, these concerns will be considered by the Agency when the basins are constructed.

Sincerely,

Rob Quiring

Rob Quiring
District Manager

KERN COUNTY WATER AGENCY

Directors:

Fred L. Starrh
President
Division 1

Terry Rogers
Division 2

Peter Frick
Division 3

Michael Radon
Division 4

Adrienne J. Mathews
Division 5

Henry C. Garnett
Vice President
Division 6

Gene A. Lundquist
Division 7

Thomas N. Clark
General Manager

John F. Stovall
General Counsel

GROUNDWATER Kern River Program

August 29, 2000

Mr. Rob Quiring, District Manager
Kern Mosquito and Vector Control District
4705 Allen Road
Bakersfield, CA 93312

RE: Response to letter regarding CEQA compliance for the Kern River Restoration and Water Supply Program

Dear Mr. Quiring:

Thank you for your letter dated August 3, 2000 responding to the Kern County Water Agency's (Agency) Initial Study and Proposed Negative Declaration for the Kern River Restoration and Water Supply Program (Program). The Agency has reviewed your concerns expressed in the letter and outlined below is the Agency's response.

Under the Program , two (2) recharge ponds (10 acre and 5 acre) are proposed for construction, both located just east of Allen Road and near the Kern River Stockdale Highway bridge . A proposed 40 acre to 50 acre Soccer field to be constructed may be used for groundwater recharge in the wettest years on the Kern River. This proposed field is also located east of Allen Road and north of the Kern River near the Stockdale bridge. The recharge ponds will be operated very similar to the Truxtun Lake recharge ponds owned by the City of Bakersfield, which we understand have not created a mosquito concern to the surrounding community. The Soccer field will probably be operated by the North of the River Parks and Recreation District under an arrangement with the City of Bakersfield. The two recharge ponds may be jointly managed by the Agency's Improvement District No. 4 and the City of Bakersfield's Water Resources Department. The recharge ponds and Soccer field are planned as part of a community park under a residential and commercial development proposed by Castle and Cooke California, Inc.

As with other existing recharge basins under the Agency's control, we do not anticipate any concerns with mosquitoes , however, we will comply with any applicable regulations and cooperate with your District to address any concerns you may have, should any arise at some future time. Please contact Kane Totzke at (661) 634-1468 with any questions regarding this matter.

Sincerely,

Tom Clark
General Manger

Mailing Address:
P.O. Box 58
Bakersfield, CA 93302-0058
Phone: 661/634-1400
Fax: 661/634-1428

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, W-2605
Sacramento, California 95825

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Kern County Water Agency

IN REPLY REFER TO:
1-1-00-TA-2553

August 14, 2000

Mr. Thomas N. Clark, General Manager
Kern County Water Agency
P.O. Box 58
Bakersfield, California 93302-0058

Subject: California Environmental Quality Act (CEQA) Compliance for the Kern River Restoration and Water Supply Program, Kern County, California

Dear Mr. Clark:

This is in response to your July 27, 2000, letter concerning the Initial Study and Proposed Draft Negative Declaration for the Kern River Restoration and Water Supply Program in Kern County, California. We understand from the materials enclosed with your letter that some of the property proposed for development is inside, and some is outside the boundaries of the Metropolitan Bakersfield Habitat Conservation Plan (HCP). We appreciate your efforts to provide water in the river channel for a greater part of the year, and we agree that this will enhance riparian vegetation and could provide habitat for some protected species in an area where they historically occurred, such as the least Bell's vireo (*Vireo bellii pusillus*) and southwestern willow flycatcher (*Empidonax traillii extimus*).

1 We expect that some parts of the project will occur within the boundaries of the Metropolitan Bakersfield HCP, and that fees will be paid into the habitat compensation fund. We think this should be mentioned in the Negative Declaration, as it is a mitigation under CEQA for effects on protected species. We are concerned about the effects of portions of the project outside the Metropolitan Bakersfield HCP on San Joaquin kit foxes (*Vulpes macrotis mutica*), Tipton kangaroo rats (*Dipodomys nitratoides nitratoides*), and blunt-nosed leopard lizards (*Gambelia silus*), which are protected under the Federal Endangered Species Act of 1973, as amended (Act). The map of the project mentions potential agricultural and urban area well sites, and installation of recharge ponds on an 80-acre parcel now belonging to Castle and Cooke. Kit fox are known to forage on, and disperse across natural land, fallow land, farmland in row crops, and grazing
2 land. Any construction of structures on farmland, fallow land, grazing land, or natural land likely will require compensation under the Act. No indication is given of the present land uses and

project footprints for portions of the project outside the MB HCP, so we cannot provide an adequate evaluation at this time.

Section 9 of the Act and its implementing regulations prohibit the "take" of federally listed fish and wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any listed wildlife species. "Harm" in this definition includes significant habitat modification or degradation where it actually kills or injures wildlife, by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR § 17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures. If a Federal agency is involved with the permitting, funding, or carrying out of the project, then initiation of formal consultation between that agency and the Service pursuant to section 7 of the Act is required if it is determined that the proposed project will adversely affect a listed species. Such a consultation would result in a biological opinion that addresses the anticipated effects of the project to the listed species and may authorize a limited level of incidental take. If a Federal agency is not involved with the project, and a listed species may be taken as a result of the project, then an incidental take permit pursuant to section 10(a)(1)(B) of the Act should be obtained. The Service may issue a permit upon completion of a satisfactory HCP for the listed species that would be subject to take as a result of the project. Applicants approved by the Service and the California Department of Fish and Game, as applicable, may satisfy the Act by buying credits and obtaining incidental take authority through the Kern Water Bank HCP and Master Permit.

While the Metropolitan Bakersfield HCP is not applicable to portions of the project outside its borders, it sets a precedent in Kern County for providing endangered species compensation for conversion of farmland to buildings and other structures. For example, we worked with the Kern County Planning Department in the development of the compensation measures that were required for the Rio Bravo Tomato Company plant, which was sited on row crop farmland.

We appreciate you contacting us about your proposed project. We would appreciate receiving more detailed information about the project concerning proposed construction locations and footprints, related access roads if any, and schedule. Thank you for your interest in conserving threatened and endangered species. Please contact Susan Jones or Peter Cross at (916) 414-6600 if you have any questions about this letter.

Sincerely,

Karen J. Miller

Karen J. Miller
Chief, Endangered Species Division

cc: Andy Gordus, CDFG, Fresno, California
Steve Strait, Kern County Planning Department
Cheryl Harding, Kern Water Bank Authority

KERN COUNTY WATER AGENCY

Directors:

Fred L. Starrh
President
Division 1

Terry Rogers
Division 2

Peter Frick
Division 3

Michael Radon
Division 4

Adrienne J. Mathews
Division 5

Henry C. Garnett
Vice President
Division 6

Gene A. Lundquist
Division 7

Thomas N. Clark
General Manager

John F. Stovall
General Counsel

GROUNDWATER Kern River Program

August 29, 2000

Ms. Susan Jones
U.S. Fish and Wildlife Service
2800Cottage Way, W-2605
Sacramento, CA 95825

RE: Response to letter regarding CEQA compliance for the Kern River Restoration and Water Supply Program

Dear Ms. Jones:

Thank you for your letter dated August 21, 2000 responding to the Kern County Water Agency's (Agency) Initial Study and Proposed Negative Declaration for the Kern River Restoration and Water Supply Program (Program). We concur with the U.S. Fish and Wildlife Service's (Service) statement that the Program as proposed will provide environmental benefits to the local environment: the Agency believes the Program is an opportunity to secure environmental local benefits along the Kern River corridor for wildlife and the community of Bakersfield.

In response to the Service's concern regarding participation in the Metropolitan Bakersfield Habitat Conservation Plan (HCP), the Agency plans to comply with any regulations including those requiring participation in payment of habitat management fees, where applicable. We note however that,the Program facilities proposed for modification and/or construction taking place within the Metropolitan Bakersfield HCP are projects less than ten (10) acres in size undertaken for strictly public purposes and therefore exempt from the Habitat Management Fees, pursuant to the City of Bakersfield Ordinance 3556.

Other Program facilities, as described in the Initial Study and proposed Negative Declaration may occur on active farmland owned by the Agency, on well maintained right-of-ways owned by the Agency or other local water districts. These proposed facilities will have a very small footprint of permanently disturbed land, e.g., less than 1/10th of an acre disturbance per well site, in areas devoid of species subject to the Federal Endangered Species Act. Furthermore, since no take of threatened or endangered species will occur due to construction of facilities on farmland, fallow land, grazing land or natural land, the Agency believes no incidental take permit or compensation is required for the Program. The Agency will, of course, comply with the regulations if avoidance of impacts is not feasible.

Mailing Address:
P.O. Box 58
Bakersfield, CA 93302-0058
Phone: 661/634-1400
Fax: 661/634-1428

The Agency hopes this letter resolves any concerns you may have with the Program. Again, we believe the overall Program will secure significant water quality, water supply, environmental and community benefits to the citizens of the greater Bakersfield area. The Program will also complement and supplement the existing the Kern River Parkway Plan adopted by the City of Bakersfield in 1988 through cooperative water exchanges and groundwater recovery to keep the Kern River wet through the center of Bakersfield during the peak recreational months of May through September. Please contact Kane Totzke at (661) 634-1468 with any questions regarding this matter.

Sincerely,

Tom Clark
General Manager

GW/KRP
Govst/RWQCB

California Regional Water Quality Control Board

Central Valley Region

Steven T. Butler, Chair

ıston H. Hickox
cretary for
vironmental
Protection

Gray Davis
Governor

Fresno Branch Office
Internet Address: http://www.swrcb.ca.gov/~rwqcb5
3614 East Ashlan Avenue, Fresno, California 93726
Phone (559) 445-5116 • FAX (559) 445-5910

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TNC ☐ JES ☑ JMB ☑ GLB ☐ LWF ☐ ☐
RBI ☑ DWM ☐ JWP ☐ SHR ☐ SMR ☐ ALL ☐
xc: Kerr Rick

Mr. Thomas N. Clark, General Manager
Kern County Water Agency
P. O. Box 58
Bakersfield, CA 93302-0058

23 August 2000

SCH # 2000081017, KERN RIVER RESTORATION AND WATER SUPPLY PROJECT, KERN COUNTY

We have reviewed the Initial Study and Proposed Negative Declaration to provide groundwater and surface water augmentations to the Kern River as it flows through the City of Bakersfield. The augmentations will occur during the summer months and be used for recreation. We understand that the project will involve construction of new agricultural and urban wells, modification of existing water exchange facilities and, possibly, construction of an interconnection in the area of the Kern River.

If more than five acres will be disturbed, the construction activities will be subject to regulation under the General Construction Activity Storm Water Permit, State Water Resources Control Board Order No. 99-08-DWQ, National Pollutant Discharge Elimination System, General Permit No. CA000002 (general permit). A copy of the permit is enclosed. Before construction begins, a Notice of Intent to comply with the permit must be submitted to the State Water Resources Control Board at the address indicated in the permit, and a Storm Water Pollution Prevention Plan must be prepared. Further information regarding the storm water program is available at the State Board web site at: http://www.swrcb.ca.gov or you may call Jarma Bennett at (559) 445-6046.

If the construction activities will involve the discharge of dredged or fill material into navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the US Army Corps of Engineers. For more information, please call Kathy Norton with the US Army Corps of Engineers at (916) 557-5260.

If a permit is needed from the US Army Corps of Engineers, certification of conformance with water quality standards pursuant to Section 401 of the Clean Water Act will be needed. Enclosed is a summary of information that we would need to consider a request for water quality certification.

If you have any questions, please call Betty Yee of this office at (559) 445-5128.

Lonnie M. Wass

LONNIE M. WASS
Senior Engineer
RCE No. 38917

Enclosure

PLANNING DEPARTMENT
TED JAMES, AICP, Director
2700 "M" STREET, SUITE 100
BAKERSFIELD, CA 93301-2323
Phone: (661) 862-8600
FAX: (661) 862-8601 TTY Relay 1-800-735-2929
E-Mail: planning@co.kern.ca.us
Web Address: www.co.kern.ca.us/planning/info.htm

RESOURCE MANAGEMENT AGENCY
DAVID PRICE III, RMA DIRECTOR
Community Development Program Department
Engineering & Survey Services Department
Environmental Health Services Department
Planning Department
Roads Department

September 5, 2000

Tom Clark, General Manager
Kern County Water Agency
P.O. Box 58
Bakersfield CA 93302-0058

Re: Initial Study - Kern River Restoration and Water Supply Program

Dear Mr. Clark:

Thank you for the opportunity to review the Initial Study for this project. The Planning Department has no comments on this phase of the project. If you have any questions, please call Steve Strait at (661) 862-8643.

Very truly yours,

TED JAMES, AICP, Director
Kern County Planning Department

by Steve Strait, Associate Planner

State of California The Resources Agency

MEMORANDUM

To: Project Coordinator
Resources Agency

Date: August 31, 2000

CCS 1/9/00

Mr. Thomas N. Clark, General Manager
Kern County Water Agency
P.O. Box 58
Bakersfield, CA 93302-0058

RECEIVED
SEP 1 2000
STATE CLEARINGHOUSE

From: **Department of Conservation**
Office of Governmental and Environmental Relations

Subject: Initial Study and Proposed Negative Declaration for the Kern River Restoration and Water Supply Program, Kern County – **SCH #2000081017**

The Department of Conservation's Division of Oil, Gas and Geothermal Resources (Division) has reviewed the initial study for the referenced project. The Division supervises the drilling, maintenance, and plugging and abandonment of oil, gas and geothermal wells in California. We offer the following comments for your consideration.

The proposed project area encompasses all, or a portion of the following oil fields: Bellevue, Canal, Canfield Ranch, Fruitvale, Kern River, McClung, North Coles Levee, Strand, Stockdale and Ten Section. There are numerous plugged and abandoned, producing and injection wells within or in proximity to these fields. Proposed project construction includes water wells, water quality exchange facilities, and facilities to enhance groundwater recharge and recovery. The project also proposes mitigation measures such as avoiding areas suspected to have hydrocarbon contamination and, where practical, avoiding interference with petroleum pipelines and oilfield areas.

In support of these proposed mitigation measures, the Division recommends that the proposed construction projects be plotted accurately on the appropriate Division maps, and submitted to the Division's Bakersfield office for review. Upon receipt of the maps, the Division will provide locations of the affected wells. Also based on our review of the maps, the Division will convey information to the applicant on any applicable well work requirements. In addition, the Division requests that these oilfield wells be plotted accurately on all future maps related to this project, and that a legible copy of the final project map be submitted to the Division's Bakersfield office.

Finally, the Division district office in Bakersfield must be notified if excavation uncovers a previously plugged and abandoned well. If the well can be identified, its

abandonment will be reviewed at that time. If the well cannot be identified, remedial operations may be required.

Thank you for the opportunity to comment on the initial study and proposed negative declaration. If you have questions, or require technical assistance or information, please contact Jack Truschel at the Bakersfield district office: 4800 Stockdale Highway, Suite 417, Bakersfield, CA 93309; or, phone (661) 322-4031. You may also call me at (916) 445-8733.

Jason Marshall
Assistant Director

cc: Jack Truschel
Division of Oil, Gas, and Geothermal Resources, Bakersfield
Linda Campion
Division of Oil, Gas, and Geothermal Resources, Sacramento

BEFORE THE BOARD OF DIRECTORS

OF THE

KERN COUNTY WATER AGENCY

In the Matter of:
DETERMINATIONS AND FINDINGS *
WITH RESPECT TO THE *
KERN RIVER RESTORATION AND *
AND WATER SUPPLY PROGRAM *

I, Pam Bosworth, Secretary of the Board of Directors to the Kern County Water Agency, of the County of Kern, State of California, do hereby certify that the following resolution proposed by Director Radon and seconded by Director Garnett, was duly passed and adopted by said Board of Directors at an official meeting hereof this 7th day of September, 2000, by the following vote, to wit:

Ayes: Garnett, Radon, Rogers, Mathews & Starrh

Noes: None

Absent: Frick & Lundquist

Secretary of the Board of Directors
of the Kern County Water Agency

RESOLUTION NO. 59-00

WHEREAS, the Board of Directors (the "Board") of the Kern County Water Agency (the "Agency") has had prepared, circulated and presented to it, and has reviewed and considered an Initial Study, Environmental Checklist, dated July 27, 2000, and a proposed Negative Declaration (Exhibit "A") attached thereto, all pertaining to the Kern River Restoration and Water Supply Program; and

WHEREAS, the Agency has received comments from several responsible agencies and interested parties and incorporated those comments, together with the Agency's response to those comments, in the appendix of the Negative Declaration; and

WHEREAS, the Agency has incorporated into and made part of the Negative Declaration, a Mitigation, Monitoring and Reporting Program that satisfactorily addresses the Federal and State Endangered Species Act, Injury to Rights of Legal Users of Water and Water Quality issues; and

WHEREAS, in recognition of the Agency securing the $23 million grant pursuant to Proposition 13, the Agency will continue to work with the Member Units and other local water districts to acquire additional grants and loans for the purpose of constructing water supply and/or water management facilities in Kern County.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Agency as follows:

The Board hereby finds and determines that the foregoing recitals, are true and correct.

1. Section 1. Review of Evidence

The Board has reviewed and considered the contents of the Initial Study and proposed Negative Declaration, the presentation to the Board made by staff pertaining to same, and the comments received from the public both during a public hearing conducted by the Board on September 7, 2000 and received during the required environmental review period; and

2. Section 2. Approval of Negative Declaration

Based upon the afore-described evidence, the Board hereby finds;

a) that there is no substantial evidence that the Kern River Restoration and Water Supply Program with the mitigation measures provided therein will have a significant effect on the environment;

b) that the mitigation measures therein are incorporated within the scope of the project, and the project as defined will not have a significant effect on the environment. Therefore, in accordance with such findings, the Board approves the Negative Declaration submitted in conjunction with the Initial Study and hereby

directs staff to prepare and file a Notice of Determination (in the form attached hereto as Exhibit "B") in compliance with the California Environmental Quality Act (Public Resources Code Sections 21000, et seq.); and

3. Section 3, Finding of No Impact on Wildlife

The Board hereby further finds that, when considering the record as a whole, there is no substantial evidence before the Board that the proposed Project will have potential for an adverse effect on wildlife resources or the habitat upon which the wildlife depends on. As such, the Board directs the General manager to sign a Certificate of a De Minimis Impact Finding exempting payment of the $1,250 Department of Fish and Game fee (in the form attached hereto as Exhibit "C"). If subsequent information becomes available indicating potential impacts to Federal and State listed or sensitive species as defined under the State and Federal Endangered Species Act, the Agency will comply with all mandatory State and Federal laws.

4. Section 4, Mitigation, Monitoring and Reporting Program

The Board hereby incorporates the Mitigation, Monitoring and Reporting Program (in the form attached hereto as Exhibit "D") to address concerns with local water districts regarding water use, distribution of benefits and water quality.

5. Section 5, Continued efforts towards securing Proposition 13 funds

The Board hereby directs staff to continue working , in a timely manner, with Member Units and other local Kern County water districts towards maximizing the acquisition additional Proposition 13 grants and loans for local water supply projects and/or other water management projects as deemed appropriate by the General manager.

EXHIBIT A

KERN COUNTY WATER AGENCY
PROPOSED NEGATIVE DECLARATION

This is prepared pursuant to the California Environmental Quality Act of 1970 (CEQA), [1] and the State CEQA Guidelines, [2].

NAME OF PROJECT: Kern River Restoration and Water Supply Program.

PROPOSED PROJECT LOCATION: The Project is primarily located along the Kern River corridor from the projected extension of Haley Street on the east side, to the California Aqueduct on the west end, and south and west of Bakersfield in the unincorporated portion of the county along the Cross Valley Canal and Arvin-Edison Canal and including other local water conveyance facilities. Also, see attached Project location maps.

DESCRIPTION OF PROPOSED PROJECT: Summary. Project proposes to provide significant water quality, water supply, environmental and community benefits for the metropolitan Bakersfield area and a broad range of Kern County water users through the coordinated implementation of a number of program components including the: (1) acquisition of the Lower Kern River water right (Lower Right), i.e., Hacienda/Garces pre-1914 water right, including associated Lake Isabella Storage; (2) Purchase of land from Castle and Cooke California, Inc., for additional recharge and recovery facilities; (3) construction of 12 new water Ag recovery wells and enough Urban wells to achieve a maximum flow capacity of 60 cfs; and (4) Construction of water exchange facilities and modification of the Pool 1 portion of the Cross Valley Canal.

Expanded Description. See Initial Study for Proposed Project, attached.

FINDINGS WHICH SUPPORT NEGATIVE DECLARATION: After making an assessment of the possible impacts of the proposed Project and reviewing an Initial Study dated July 27, 2000, the Board of Directors of the Kern County Water Agency has determined that the proposed Project as presented will not have any significant effect on the environment, either directly or indirectly.

INITIAL STUDY: A copy of the Initial Study and environmental checklist prepared by Agency staff, dated July 27, 2000, is attached.

EXHIBIT A

MITIGATION MEASURES: Mitigation measures which have been incorporated into the proposed Project to avoid potentially significant environmental effects are as follows:

1. Throughout the term of the proposed Project, Project water quality, groundwater monitoring, and groundwater recharge losses will be consistent with the Memorandum of Understanding Regarding Operation and Monitoring of the Kern Water Bank Groundwater Banking Program, dated October 26, 1995, and consistent with the Operation and Monitoring Procedure for the Pioneer Project, dated May 28, 1998.

2. Project recharge and recovery well areas will be designed and located to avoid areas suspected to have hydrocarbon contamination, and to the extent practical, not to interfere with oil (crude or refined) or natural gas pipelines or other sensitive oilfield areas.

3. Project recharge and recovery well areas will be designed and located to minimize potential impacts to the Agency's Cross Valley Canal.

4. A mitigation, Monitoring and Reporting Program (attached as Exhibit C)

CONTACT PERSON, TELEPHONE NUMBER: Mr. Thomas N. Clark, General Manager, Kern County Water Agency, P.O. Box 58, Bakersfield, CA. 93302; (661)-634-1400. If you require additional information regarding this proposed Project, please contact Mr. Kane Totzke, Kern County Water Agency, (661) 634-1468; e-mail: kane@kcwa.com

_____ _____

Thomas N. Clark, General Manager Date

1. Public Resources Code, Section 2100, et seq.

2. Title 14, Division 6, California Administrative Code, as amended.

KERN COUNTY
WATER AGENCY

Directors:

Fred L. Starrh
President
Division 1

Terry Rogers
Division 2

Peter Frick
Division 3

Michael Radon
Division 4

Adrienne J. Mathews
Division 5

Henry C. Garnett
Vice President
Division 6

Gene A. Lundquist
Division 7

Thomas N. Clark
General Manager

John F. Stovall
General Counsel

GROUNDWATER krp

September 7, 2000

Ms. Karen Fowler
Office of the Governor
Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, Ca 95812-3044

RE: SCH # 2000081017 - Notice of Determination and De Minimis Impact Finding

Dear Ms. Fowler:

Transmitted herein are the Kern County Water Agency's (Agency) "Notice of Determination" and a "California Department of Fish and Game Certificate of Fee Exemption -De Minimis Impact Finding" for the *Kern River Restoration and Water Supply Program* Negative Declaration. The Agency Board of Directors took action to adopt the Negative Declaration at a meeting held on September 7, 2000. The De Minimis Impact finding exempts the Agency from the $1,250 filing fee. Please contact Kane Totzke at 661-634-1468 with any questions regarding this matter.

Sincerely,

Tom Clark
General Manager

enclosures

cc: Office of the County Clerk (Kern)

Mailing Address:
P.O. Box 58
Bakersfield, CA 93302-0058
Phone: 661/634-1400
Fax: 661/634-1428

EXHIBIT B
CEQA Notice of Determination

To: X Office of Planning and Research
1400 Tenth Street, Room 121
Sacramento, CA 95814

X County Clerk
County of Kern
1115 Truxton Ave., 1st Floor
Bakersfield, CA 93301-4639

From: Kern County Water Agency
P.O. Box 58
3200 Rio Mirada Drive
Bakersfield, CA 93302

Subject: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

Project Title: Kern River Restoration and Water Supply Program

State Clearinghouse Number: SCH #2000081017
(If submitted to Clearinghouse)

Lead Agency: Kern County Water Agency
Contact Person: Thomas N. Clark, General Manager
Telephone: (661) 634-1400

Project Location: See attached Negative Declaration.
(include county)

Project Description: See attached Negative Declaration.

This is to advise that on September 7, 2000, the Kern County Water Agency (as lead agency) approved the project (more particularly described in the attached Negative Declaration) and has determined that no additional environmental review is required.

An Initial Study and Subsequent Negative Declaration with findings were prepared for the Agency's recent action pursuant to the provisions of CEQA Guidelines sections 15070 through 15075 concluding that no additional environmental review is required. The recent action will not have any significant effect on the environment. Mitigation measures were made a condition of the Agency's recent action on the project. A Statement of Overriding Considerations was not adopted in connection with the Agency's recent action on this project.

This is to certify that the Initial Study with comments and responses and record of project approval is available to the general public at: Kern County Water Agency, P.O. Box 58, 3200 Rio Mirada Drive, Bakersfield, Kern County, CA 93302.

Signature, _____
Thomas N. Clark, General Manager, Kern County Water Agency

Date _____

Date received for filing at OPR: _____

EXHIBIT C

CALIFORNIA DEPARTMENT OF FISH AND GAME

CERTIFICATE OF FEE EXEMPTION

De Minimis Impact Finding

Project Title: Kern River Restoration and Water Supply Program

Location: Kern River Corridor area, fromMetropolitan Bakersfield to the California Aqueduct, Kern County

Project Description: This project will generate broad local water supply, environmental and community benefits, and targeted drinking water quality benefits within the metropolitan Bakersfield area.
The Project consists of the four components, generally described below.

1. Acquisition of the Kern River lower water right;
2. Construction of enough urban area wells to achieve a flow capacity of about 60 cfs;
3. Construction of water conveyance exchange facilities;
4. Construction and acquisition of local facilities to enhance groundwater recharge and recovery opportunities.

Findings of Exemption:

1. The project consists of water right transfer and minimal construction and/or modification of water transfer and exchange facilities.

2. The lead agency has no evidence before it, including the information in the Initial Study and comments of appropriate reviewing agencies, to indicate that the proposed project could have any potential for adverse effects on fish and wildlife resources.

Certification:

I hereby certify that the public agency has made the above finding(s) and that the project will not individually or cumulatively have an adverse effect on wildlife resources, as defined in Section 71.2 of the Fish and Game Code.

Date: September 7, 2000 Local Lead Agency: Kern County Water Agency

_____

Title: General Manger Manager

EXHIBIT D

MITIGATION, MONITORING AND REPORTING PROGRAM

OVERVIEW

Comments received on the Proposed Negative Declaration regarding the Kern River Program highlight a significant feature of the design of the program: the program has been designed and will be implemented to comply with all aspects of existing law. Important laws with which the project has been designed to comply are the Federal Endangered Species Act, State Endangered Species Act, and a variety of laws and regulations governing water quality and impacts on legal users of water. While compliance with such laws and regulations is an integral feature of the program, the Agency understands that some entities would prefer a formal acknowledgment of intended compliance as a form of mitigation, and appropriate monitoring and reporting. Accordingly, the Agency agrees to clarify the following mitigation measures which are part of the program as designed and adopt appropriate monitoring and reporting measures.

MONITORING & REPORTING FOR DESIGNED MITIGATION ELEMENTS

1. **ADOPTED MITIGATION ELEMENT: Federal and State Endangered Species Act**

   (a) **Program Design:**

   The program has been designed to avoid any impact on known endangered or threatened species, federal or state, or other species of concern. In the first instance, the program has been designed to have an extremely small footprint of disrupted land in the construction of facilities. Additionally, the facility construction will occur primarily on existing highly cultivated farmland or highly maintained rights of way in which it is unlikely that such species or their habitat will be encountered. Further, care will be utilized to have such locations examined by personnel knowledgeable in the identification of endangered and threatened

species and their habitat to ensure the avoidance of any impact. In the unlikely event that unavoidable impacts are encountered, the Agency will comply fully with Federal and State Endangered Species Acts to ensure that such impacts are mitigated to insignificance.

In summary, the Agency commits to full compliance with both Federal and State Endangered Species Act requirements. While no impact on such species is contemplated due to the design of the program, any unexpected impacts will be handled in full compliance with federal and state law.

(b) Monitoring & Reporting:

The General Manager is hereby directed to provide knowledgeable staff assistance, and consultants where required, to monitor the progress of construction and implementation to ensure compliance with federal and state endangered species laws and regulations.

(1) During the construction phase of the program, the General Manager shall report to the Board on a quarterly basis regarding the following:

- **(i)** The identification, if any, of any potentially impacted federal or state threatened or endangered species.
- **(ii)** Specification of all measures taken to avoid any impact on such species or on the habitat of such species.
- **(iii)** Where impact proves to be unavoidable, whether a project component was abandoned or whether sufficient mitigation measures were utilized to reduce the level of impact to insignificance.

(2) After construction, the General Manager shall include in annual reports to the Board the following:

- **(i)** Whether any potential significant impacts on federal or state endangered or threatened species have been identified, and
- **(ii)** What measures have been taken to reduce such potential impacts to

insignificance.

2. **ADOPTED MITIGATION ELEMENT: Injury to Rights of Legal Users of Water and Facilities**

(a) **Program Design:**

The program is designed to ensure that all water and facilities utilized by the program are obtained with full protection of the rights of existing legal users. Full compensation will be provided by the Agency where such rights of legal users of water or facilities are impaired, and absent such compensation such rights of legal users will not be impaired. This extends to the legal users of ground water as the program has been designed to avoid significant impact on such users. In the event of disputes regarding the existence of such impacts, the Agency will submit such disputes to the previously established Kern Fan Monitoring Committee for handling under established rules.

(b) **Monitoring and Reporting:**

The General Manager shall include in an annual report to the Board a report on the following items of concern:

(1) The alleged occurrence of any impact on the rights of legal users of water or facilities, including any alleged impacts on groundwater;

(2) The measures utilized to investigate such alleged impacts;

(3) The results of such investigation;

(4) The measures utilized to avoid impacts to such rights of legal users, or the measures utilized to reduce such impacts to insignificance.

3. **ADOPTED MITIGATION ELEMENT: Water Quality**

(a) **Program Design:**

The program is designed to avoid any potential adverse impacts on water quality. Utilization of the water rights acquired under the program will not significantly differ in water quality impacts from the existing uses of such water. The intent of

the program is to secure the benefits of Kern River water quality for drinking water quality and Kern County. The program will be operated to avoid significant adverse impact on the water quality available to any legal user of water.

(b) Monitoring and Reporting:

The General Manager shall include in an annual report to the Board of Directors the following items:

(1) A statement regarding the water quality status of the program during the prior year;

(2) An identification of all problem areas encountered, if any, and the measures taken to avoid any significant adverse impact on the water quality of any legal user of water.

GENERAL REPORTING REQUIREMENTS

The annual report referred to herein shall be prepared under the direction of the General Manager and a registered engineer of the State of California, in consultation with individual(s) knowledgeable in the identification of endangered or threatened species and their habitats. The report may include additional operational, and economic data of interest to the community, but at a minimum shall contain the information specified above as required elements of the report.

KR/KRP

TRUSTEES

STEVE FRANETOVICH
RICHARD FREELAND
ROY JOHNSON
MORRIS MAHLMANN
ROBERT MAYBORN
WILLIAM PROUT
J B SELVIDGE
DC ZACHARY

MANAGER
ROBERT A. QUIRING

SUPERINTENDENT
TOM BLANTON

KERN
MOSQUITO AND VECTOR CONTROL DISTRICT

DISTRICT OFFICE

4705 ALLEN RD. BAKERSFIELD, CALIFORNIA 93312
PH: (661) 589-2744 FAX: (661) 589-4913 E MAIL: kmvcd@lightspeed.net

RECEIVED
AUG 16 2000
Kern County Water Agency
TNC JFS JMB GLB LWF
RBI DWM JWP SHR SMR ALL

August 3, 2000

Tom Clark, General Manager
Kern County Water Agency
P. O. Box 58
Bakersfield, California 93302-0058

RE: Kern River Restoration & Water Supply Project

Tom:

The District has several comments in regard to the recharge basins that would be constructed as part of this proposed project.

During years when groundwater recharge operations were being conducted, it would not be feasible to treat these basins by aircraft if they produced mosquitoes because of the proximity of residential areas and heavily-traveled roads (i.e Stockdale, Buena Vista, Allen). During the last couple of years when performing mosquito control operations, the District's airplane pilot has encountered increasing numbers of joggers, bikers, horseback riders, etc. in the "2800" and the other recharge areas west of Allen Road. These new basins will, also, attract similar attention by the public.

Ideally, vegetation in the basins would be managed in a manner that would allow the control of the aquatic stage of mosquitoes through the use of mosquitofish. Due to the size of these basins, treatment by ground rigs spraying around the perimeter would be ineffective. The use of insecticides in areas frequented by the public is a real challenge these days due to the increasingly negative reaction by people to pesticide usage in general.

Hopefully, these concerns will be considered by the Agency when the basins are constructed.

Sincerely,

Rob Quiring
District Manager

KERN COUNTY WATER AGENCY

Directors:

Fred L. Starrh
President
Division 1

Terry Rogers
Division 2

Peter Frick
Division 3

Michael Radon
Division 4

Adrienne J. Mathews
Division 5

Henry C. Garnett
Vice President
Division 6

Gene A. Lundquist
Division 7

Thomas N. Clark
General Manager

John F. Stovall
General Counsel

GROUNDWATER Kern River Program

August 29, 2000

Mr. Rob Quiring, District Manager
Kern Mosquito and Vector Control District
4705 Allen Road
Bakersfield, CA 93312

RE: Response to letter regarding CEQA compliance for the Kern River Restoration and Water Supply Program

Dear Mr. Quiring:

Thank you for your letter dated August 3, 2000 responding to the Kern County Water Agency's (Agency) Initial Study and Proposed Negative Declaration for the Kern River Restoration and Water Supply Program (Program). The Agency has reviewed your concerns expressed in the letter and outlined below is the Agency's response.

Under the Program , two (2) recharge ponds (10 acre and 5 acre) are proposed for construction, both located just east of Allen Road and near the Kern River Stockdale Highway bridge . A proposed 40 acre to 50 acre Soccer field to be constructed may be used for groundwater recharge in the wettest years on the Kern River. This proposed field is also located east of Allen Road and north of the Kern River near the Stockdale bridge. The recharge ponds will be operated very similar to the Truxtun Lake recharge ponds owned by the City of Bakersfield, which we understand have not created a mosquito concern to the surrounding community. The Soccer field will probably be operated by the North of the River Parks and Recreation District under an arrangement with the City of Bakersfield. The two recharge ponds may be jointly managed by the Agency's Improvement District No. 4 and the City of Bakersfield's Water Resources Department. The recharge ponds and Soccer field are planned as part of a community park under a residential and commercial development proposed by Castle and Cooke California, Inc.

As with other existing recharge basins under the Agency's control, we do not anticipate any concerns with mosquitoes , however, we will comply with any applicable regulations and cooperate with your District to address any concerns you may have, should any arise at some future time. Please contact Kane Totzke at (661) 634-1468 with any questions regarding this matter.

Sincerely,

Tom Clark
General Manger

Mailing Address:
P.O. Box 58
Bakersfield, CA 93302-0058
Phone: 661/634-1400
Fax: 661/634-1428

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, W-2605
Sacramento, California 95825

RECEIVED
AUG 2 1 2000
Kern County Water Agency

IN REPLY REFER TO
1-1-00-TA-2553

August 14, 2000

Mr. Thomas N. Clark, General Manager
Kern County Water Agency
P.O. Box 58
Bakersfield, California 93302-0058

Subject: California Environmental Quality Act (CEQA) Compliance for the Kern River Restoration and Water Supply Program, Kern County, California

Dear Mr. Clark:

This is in response to your July 27, 2000, letter concerning the Initial Study and Proposed Draft Negative Declaration for the Kern River Restoration and Water Supply Program in Kern County, California. We understand from the materials enclosed with your letter that some of the property proposed for development is inside, and some is outside the boundaries of the Metropolitan Bakersfield Habitat Conservation Plan (HCP). We appreciate your efforts to provide water in the river channel for a greater part of the year, and we agree that this will enhance riparian vegetation and could provide habitat for some protected species in an area where they historically occurred, such as the least Bell's vireo (*Vireo bellii pusillus*) and southwestern willow flycatcher (*Empidonax traillii extimus*).

1 We expect that some parts of the project will occur within the boundaries of the Metropolitan Bakersfield HCP, and that fees will be paid into the habitat compensation fund. We think this should be mentioned in the Negative Declaration, as it is a mitigation under CEQA for effects on protected species. We are concerned about the effects of portions of the project outside the Metropolitan Bakersfield HCP on San Joaquin kit foxes (*Vulpes macrotis mutica*), Tipton kangaroo rats (*Dipodomys nitratoides nitratoides*), and blunt-nosed leopard lizards (*Gambelia silus*), which are protected under the Federal Endangered Species Act of 1973, as amended (Act). The map of the project mentions potential agricultural and urban area well sites, and installation of recharge ponds on an 80-acre parcel now belonging to Castle and Cooke. Kit fox are known to forage on, and disperse across natural land, fallow land, farmland in row crops, and grazing
2 land. Any construction of structures on farmland, fallow land, grazing land, or natural land likely will require compensation under the Act. No indication is given of the present land uses and

project footprints for portions of the project outside the MB HCP, so we cannot provide an adequate evaluation at this time.

Section 9 of the Act and its implementing regulations prohibit the "take" of federally listed fish and wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any listed wildlife species. "Harm" in this definition includes significant habitat modification or degradation where it actually kills or injures wildlife, by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR § 17.3).

? Take incidental to an otherwise lawful activity may be authorized by one of two procedures. If a Federal agency is involved with the permitting, funding, or carrying out of the project, then initiation of formal consultation between that agency and the Service pursuant to section 7 of the Act is required if it is determined that the proposed project will adversely affect a listed species. Such a consultation would result in a biological opinion that addresses the anticipated effects of the project to the listed species and may authorize a limited level of incidental take. If a Federal agency is not involved with the project, and a listed species may be taken as a result of the project, then an incidental take permit pursuant to section 10(a)(1)(B) of the Act should be obtained. The Service may issue a permit upon completion of a satisfactory HCP for the listed species that would be subject to take as a result of the project. Applicants approved by the Service and the California Department of Fish and Game, as applicable, may satisfy the Act by buying credits and obtaining incidental take authority through the Kern Water Bank HCP and Master Permit.

While the Metropolitan Bakersfield HCP is not applicable to portions of the project outside its borders, it sets a precedent in Kern County for providing endangered species compensation for conversion of farmland to buildings and other structures. For example, we worked with the Kern County Planning Department in the development of the compensation measures that were required for the Rio Bravo Tomato Company plant, which was sited on row crop farmland.

We appreciate you contacting us about your proposed project. We would appreciate receiving more detailed information about the project concerning proposed construction locations and footprints, related access roads if any, and schedule. Thank you for your interest in conserving threatened and endangered species. Please contact Susan Jones or Peter Cross at (916) 414-6600 if you have any questions about this letter.

Sincerely,

Karen J. Miller

Karen J. Miller
Chief, Endangered Species Division

cc: Andy Gordus, CDFG, Fresno, California
Steve Strait, Kern County Planning Department
Cheryl Harding, Kern Water Bank Authority

KERN COUNTY
WATER AGENCY

Directors:

Fred L. Starrh
President
Division 1

Terry Rogers
Division 2

Peter Frick
Division 3

Michael Radon
Division 4

Adrienne J. Mathews
Division 5

Henry C. Garnett
Vice President
Division 6

Gene A. Lundquist
Division 7

Thomas N. Clark
General Manager

John F. Stovall
General Counsel

GROUNDWATER Kern River Program

August 29, 2000

Ms. Susan Jones
U.S. Fish and Wildlife Service
2800Cottage Way, W-2605
Sacramento, CA 95825

RE: Response to letter regarding CEQA compliance for the Kern River Restoration and Water Supply Program

Dear Ms. Jones:

Thank you for your letter dated August 21, 2000 responding to the Kern County Water Agency's (Agency) Initial Study and Proposed Negative Declaration for the Kern River Restoration and Water Supply Program (Program). We concur with the U.S. Fish and Wildlife Service's (Service) statement that the Program as proposed will provide environmental benefits to the local environment: the Agency believes the Program is an opportunity to secure environmental local benefits along the Kern River corridor for wildlife and the community of Bakersfield.

In response to the Service's concern regarding participation in the Metropolitan Bakersfield Habitat Conservation Plan (HCP), the Agency plans to comply with any regulations including those requiring participation in payment of habitat management fees, where applicable. We note however that,the Program facilities proposed for modification and/or construction taking place within the Metropolitan Bakersfield HCP are projects less than ten (10) acres in size undertaken for strictly public purposes and therefore exempt from the Habitat Management Fees, pursuant to the City of Bakersfield Ordinance 3556.

Other Program facilities, as described in the Initial Study and proposed Negative Declaration may occur on active farmland owned by the Agency, on well maintained right-of-ways owned by the Agency or other local water districts. These proposed facilities will have a very small footprint of permanently disturbed land, e.g., less than 1/10th of an acre disturbance per well site, in areas devoid of species subject to the Federal Endangered Species Act. Furthermore, since no take of threatened or endangered species will occur due to construction of facilities on farmland, fallow land, grazing land or natural land, the Agency believes no incidental take permit or compensation is required for the Program. The Agency will, of course, comply with the regulations if avoidance of impacts is not feasible.

Mailing Address:
P.O. Box 58
Bakersfield, CA 93302-0058
Phone: 661/634-1400
Fax: 661/634-1428

The Agency hopes this letter resolves any concerns you may have with the Program. Again, we believe the overall Program will secure significant water quality, water supply, environmental and community benefits to the citizens of the greater Bakersfield area. The Program will also complement and supplement the existing the Kern River Parkway Plan adopted by the City of Bakersfield in 1988 through cooperative water exchanges and groundwater recovery to keep the Kern River wet through the center of Bakersfield during the peak recreational months of May through September. Please contact Kane Totzke at (661) 634-1468 with any questions regarding this matter.

Sincerely,

Tom Clark
General Manager

GW/KRT
Govst/RWQCB

California Regional Water Quality Control Board

Central Valley Region

Steven T. Butler, Chair

n H. Hickox
ary for
nmental
otection

Gray Davis
Governor

Fresno Branch Office
Internet Address: http://www.swrcb.ca.gov/~rwqcb5
3614 East Ashlan Avenue, Fresno, California 93726
Phone (559) 445-5116 • FAX (559) 445-5910

RECEIVED
Scan
2-sided
AUG 25 2000
Kern County Water Agency

TNC ☐ JBS ☑ JMB ☑ GLB ☐ LWF ☐ ☐
RBT ☑ DWM ☐ JWP ☐ SHR ☐ SMR ☐ ALL ☐
XC: Karl Rick

Mr. Thomas N. Clark, General Manager
Kern County Water Agency
P. O. Box 58
Bakersfield, CA 93302-0058

23 August 2000

SCH # 2000081017, KERN RIVER RESTORATION AND WATER SUPPLY PROJECT, KERN COUNTY

We have reviewed the Initial Study and Proposed Negative Declaration to provide groundwater and surface water augmentations to the Kern River as it flows through the City of Bakersfield. The augmentations will occur during the summer months and be used for recreation. We understand that the project will involve construction of new agricultural and urban wells, modification of existing water exchange facilities and, possibly, construction of an interconnection in the area of the Kern River.

If more than five acres will be disturbed, the construction activities will be subject to regulation under the General Construction Activity Storm Water Permit, State Water Resources Control Board Order No. 99-08-DWQ, National Pollutant Discharge Elimination System, General Permit No. CA000002 (general permit). A copy of the permit is enclosed. Before construction begins, a Notice of Intent to comply with the permit must be submitted to the State Water Resources Control Board at the address indicated in the permit, and a Storm Water Pollution Prevention Plan must be prepared. Further information regarding the storm water program is available at the State Board web site at: http://www.swrcb.ca.gov or you may call Jarma Bennett at (559) 445-6046.

If the construction activities will involve the discharge of dredged or fill material into navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the US Army Corps of Engineers. For more information, please call Kathy Norton with the US Army Corps of Engineers at (916) 557-5260.

If a permit is needed from the US Army Corps of Engineers, certification of conformance with water quality standards pursuant to Section 401 of the Clean Water Act will be needed. Enclosed is a summary of information that we would need to consider a request for water quality certification.

If you have any questions, please call Betty Yee of this office at (559) 445-5128.

Lonnie M. Wass

LONNIE M. WASS
Senior Engineer
RCE No. 38917

Enclosure

Distribution List – Kern River Restoration & Water Supply Program

ARVIN-EDISON WSD
P.O. BOX 175
ARVIN, CA 93203

BELRIDGE WSD
P.O. BOX 1087
BAKERSFIELD, CA 93302

BERRENDA MESA WD
2100 "F" STREET, SUITE 100
BAKERSFIELD, CA 93301

BUENA VISTA WSD
P.O. BOX 756
BUTTONWILLOW, CA 93206

CALIFORNIA WATER SERVICE COMPANY
3725 S. "H" STREET
BAKERSFIELD, CA 93304

CAWELO WATER DISTRICT
17207 INDUSTRIAL FARM ROAD
BAKERSFIELD, CA 93308

CHEVRON PRODUCTION COMPANY
ATT: MR. JIM WALDRON
5001 CALIFORNIA AVENUE
BAKERSFIELD, CA 93302

CITY OF BAKERSFIELD
ATT: MR. MARC GAUTHIER
1715 CHESTER AVENUE
BAKERSFIELD, CA 93301

CITY OF BAKERSFIELD WATER RESOURCES
ATT: GENE BOGART
1000 BUENA VISTA RD
BAKERSFIELD, CA 93311

OILDALE MUTUAL WATER COMPANY
P.O. BOX 5638
BAKERSFIELD, CA 93388

DELANO-EARLIMART ID
14181 AVENUE 24
DELANO, CA 93215

DEPARTMENT OF FISH AND GAME
ATT: MR. JEFF SINGLE
1234 EAST SHAW AVENUE
FRESNO, CA 93710

DIVISION OF OIL, GAS, AND GEOTHERMAL
ESOURCES
800 STOCKDALE HWY
BAKERSFIELD, CA 93309

MR. JAMES L. NICKEL
P.O. BOX 60679
BAKERSFIELD, CA 93386-0679

DUDLEY RIDGE WATER DISTRICT
286 W. CROMWELL AVENUE
FRESNO, CA 93711-6162

AST NILES COMMUNITY SERVICES DISTRICT
P.O. BOX 6038
AKERSFIELD, CA 93386

HENRY MILLER WATER DISTRICT
P.O. BOX 9759
BAKERSFIELD, CA 93389-9759

KERN COUNTY MOSQUITO & VECTOR CONTROL
DISTRICT
4705 ALLEN ROAD
BAKERSFIELD, CA 93312-3429

ERN AUDUBON SOCIETY
ATT: MARY GRIFFIN
1604 DUKE DRIVE
AKERSFIELD, CA 93305

KERN WATER BANK AUTHORITY
P.O. BOX 80607
BAKERSFIELD, CA 93380-0607

KERN DELTA WD
501 TAFT HIGHWAY
BAKERSFIELD, CA 93307

ERN COUNTY PLANNING DEPARTMENT
TT: MR. TED JAMES
2700 "M" STREET, SUITE 100
AKERSFIELD, CA 93301

KERN-TULARE WD
1820 21ST STREET
BAKERSFIELD, CA 93301

KERN COUNTY PARKS AND RECREATION
DEPT
1110 GOLDEN STATE HWY
BAKERSFIELD, CA 93301

LOST HILLS WATER DISTRICT
008 SILLECT AVENUE, SUITE 205
BAKERSFIELD, CA 93308

LOWER TULE RIVER ID
ATT: DAN VINK
P.O. BOX 4388
PORTERVILLE, CA 93258

NORTH KERN WSD
P.O. BOX 81435
BAKERSFIELD, CA 93380-1435

RAG GULCH WD
1820 21ST STREET
AKERSFIELD, CA 93301

ROSEDALE RIO-BRAVO WSD
P.O. BOX 867
BAKERSFIELD, CA 93302-0867

SEMITROPIC WSD
P.O. BOX Z
WASCO, CA 93280

SHAFTER WASCO IRRIGATION DISTRICT
P.O. BOX 158
WASCO, CA 93280-0158

SIERRA CLUB
KERN-KAWEAH CHAPTER
2815 LA CRESTA DRIVE
BAKERSFIELD, CA 93305-1719

SOUTHERN SAN JOAQUIN MUD
P.O. BOX 279
DELANO, CA 93216

TEHACHAPI CUMMINGS COUNTY WD
P.O. BOX 326
TEHACHAPI, CA 93581-0326

TEJON-CASTAC WD
P.O. BOX 1000
LEBEC, CA 93243

TEXACO EXPLORATION AND PRODUCTION
COMPANY, ATT: MR. DAVE WRIGHT
BOX 5197X,
BAKERSFIELD, CA 93388

U.S. FISH AND WILDLIFE SERVICE
SAN JOAQUIN VALLEY BRANCH CHIEF
2800 COTTAGE WAY #W-2605
SACRAMENTO, CA 95825-1846

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
1601 NEW STINE ROAD, SUITE 270
BAKERSFIELD, CA 93309-3698

VAUGHN WATER COMPANY
10014 GLEN STREET
BAKERSFIELD, CA 93312

WEST KERN WD
P.O. BOX 1105
TAFT, CA 93268-1105

WHEELER RIDGE-MARICOPA WSD
P.O. BOX 9429
BAKERSFIELD, CA 93389-9429

RICH O'NEILL
KERN RIVER PARKWAY COMMITTEE
208 LOS NIETOS
BAKERSFIELD, CA 93309

THOMAS FALLGATTER
KERN RIVER CORRIDOR ENDOWMENT & HOLDING CO.
P.O. BOX 11172
BAKERSFIELD, CA 93306

CAROLYN BELL
KERN RIVER CORRIDOR ENDOWMENT & HOLDING CO.
5025 PANORAMA DRIVE
BAKERSFIELD, CA 93306

BILL BOLTHOUSE
WM. BOLTHOUSE FARMS INC.
7200 EAST BRUNDAGE LANE
BAKERSFIELD, CA 93307-3099

CARL VOSS
GRIMMWAY FARMS
P.O. BOX 81498
LAMONT, CA 93380-1498

DAVE RUSSELL
MCCALLISTER RANCH IRRIGATION DISTRICT
230 TRUXTUN AVENUE
BAKERSFIELD, CA 93301-5312

ROYCE FAST
17958 KRANENBURG STREET
BAKERSFIELD, CA 93312

ALAN DESTEFANI
8035 OLD RIVER ROAD
BAKERSFIELD, CA 93311

STEVE DEBRANCH
CASTLE & COOKE CALIFORNIA INC.
10000 STOCKDALE HIGHWAY
BAKERSFIELD, CA 93311

State Clearing House
15 copies

County Clerk - 2 copies

The Bakersfield Californian
1707 Eye Street
Bakersfield, CA 93301

Date: 7/31/00 2:31:40PM

To:	KERN CO WATER AGENCY	From:	Marie Ricks
Phone:	661-634-1400	Phone:	661-395-7314
Fax:	661-634-1428	Fax:	661-395-7540

Customer Information
KERN CO WATER AGENCY
PO BOX 58
BAKERSFIELD, CA 93302

Here is a proof of your ad. Please check the ad carefully and call with any corrections.

Notes:

Ad Information:

This ad will run in Classification:	Legal Notices
Ad Depth in Lines:	149
Total Price:	$219.03
Ad Number:	376048

This Ad will run in the following paper(s)

Non-Publishing Publication
Run Dates; 08/05/00
The Bakersfield Californian
Run Dates; 08/05/00

This Fax is Magnified: 2 X

KERN COUNTY WATER AGENCY
OTICE OF INTENT TO ADOPT
NEGATIVE DECLARATION
[to confirm CEQA Guidelines section 15072 determination]

suant to the California Envi-
onmental Quality Act and CEQA
idelines, the Kern County Water
ncy hereby provides notice of
s intent to adopt a Negative Dec-
ration pursuant to CEQA Guide-
s section 15072 for the fol-
ing:

Name of Project: Kern River Res-
ation and Water Supply Pro-
n

. Project Lead Agency and Spon-
r: Kern County Water Agency,
. Box 58, 3200 Rio Mirada
ve, Bakersfield CA 93302-
058. Contact person: Thomas N.
rk, General Manager, 661-634-
00.

. Project Description: Project
oposes to provide significant wa-
quality, water supply, envi-
onmental and community bene-
s for the metropolitan
ersfield area and a broad range
Kern County water users
hrough the coordinated imple-
ntation of a number of program
ponents including: (1) acquisi-
ion of the Lower Kern River water
ght (Lower Right), i.e., Haci-
a/Garces pre-1914 water right,
uding associated Lake Isabella
Storage; (2) Purchase of land from
tle and Cooke California, Inc.,
additional recharge and recov-
ery facilities; (3) construction of
2 new water Ag recovery wells
construction of enough urban
wells to achieve a flow capac-
ty of about 60 cfs; and (4) Con-
ction of water exchange facili-
and modification of the Pool 1
portion of the Cross Valley Canal.
or more information concerning

...e project, see the Kern County ...ter Agency Environmental Ini... Study Form [for CEQA Guide...nes section 15072 Determina...n] dated July 27, 2000 (the ...itial Study"), which is available ...r review and copying during ...gular business hours at the ...ncy office at the above address.

...Purpose and explanation of Ini...al Study: The Agency has pre...ed the Initial Study in order to ...ermine whether the approval ...nd implementation of the project described in the Initial Study ...y have a significant effect on the ...ironment under CEQA Guide...nes section 15063. The Kern ...er Restoration and Water Sup... Program is intended to provide ...ignificant water quality, water ...pply, environmental and com...nity benefits for the metropoli... Bakersfield area and a broad ...nge of Kern County water users. ... Agency has determined, in ...it of the record as a whole, there ...n no substantial evidence that the ...oject may have a significant ef... on the environment.

...Project Location: The Project is ...cated in the City of Bakersfield ...narily located along the Kern ...er corridor from the projected ...xtension of Haley Street on the ...t side, to the California Aque...t on the west end, and south ...nd west of Bakersfield in the un...corporated portion of the county ...ng the Cross Valley Canal and ...in-Edison Canal (see maps at...ached to Initial Study):

...Proposed Finding: The Agency ...rd of Directors has reviewed ...he proposed project, Initial Study, ...mments received on the pro...al to adopt this Negative Decla...on, and other documents and ...nformation from Agency staff,

1 the basis of this informa-
id the whole record before
, hereby finds and deter-
as follows: (a) The Initial
and Negative Declaration re-
gency's independent judg-
and analysis; and (b) miti-
measures have been included
ce to less than significant
otential environmental ef-
of the project and nothing
is required. This Negative
ation confirms this conclu-

ial Study: A copy of the Ini-
udy is either attached or
le for public review at the
y office at the above address.
ation of Background Docu-
The Initial Study, notice of
to adopt Negative Declara-
comments on the Initial
and other documents con-
g this project are on file and
ble for public review at the
office at the above address.
gency Board Secretary (same
s) is the custodian of the
ents that constitute the rec-
proceedings upon which the
on in this matter is based.
ublic Review: Pursuant to
Guideline section 15105,
comments on this proposal
opt a Negative Declaration
received by the Agency at
ove address beginning July
00 and ending September 1,
. The Agency Board of Direc-
expected to consider the
on of the Negative Declara-
t a public meeting scheduled
ursday, September 7, 2000
p.m., at the Agency's office
above address.
al signed on July 27, 2000
s N. Clark
l Manager
County Water Agency
5, 2000 (376048)

KERN COUNTY
WATER AGENCY

Kane

MEMORANDUM
BC Wat.Man
GROUNDWATER Pioneer

TO: Water Management Committee
Agenda Item No. 5

FROM: John Stovall/Kane Totzke

DATE: July 27, 2000

SUBJECT: Notice of Intent to adopt a Negative Declaration for the Kern River Program, including acquisition of water rights, and discussion of a program

Issue
Consider authorizing filing and distribution of an Initial Study, Environmental Checklist/Response to Checklist and Proposed Draft Negative Declaration for the Kern River Restoration and Water Supply Program.

Recommended Motion:
Adopt Resolution No. 49-00 authorizing the General Manager, upon approval as to legal form by the General Counsel, to file the Initial Study and Proposed Draft Negative Declaration for the Kern River Restoration and Water Supply Program.

Discussion
Over the past few months, local water leaders have been working to implement the Kern River Restoration and Water Supply Program, utilizing $23 million from the "Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Act" (Proposition 13). This project will generate broad local water supply, environmental and community benefits, and targeted drinking water quality benefits within the metropolitan Bakersfield area. In order to implement the proposed Project, the Kern County Water Agency (Agency) must first comply with the California Environmental Quality Act (CEQA). The Agency, as the Lead Agency under CEQA, has prepared an Initial Study and associated Environmental Checklist and Response to Checklist, and a proposed draft Negative Declaration for the Project to be filed with the County Clerk and State Clearing House, and to be distributed to interested parties and responsible agencies for comment. Staff is recommending that a Negative Declaration be prepared for this Project, since an evaluation of the environmental impacts resulting from implementing the Project are shown to be less than significant. In order to provide the required 30 day public review period, the public hearing for the Board to consider adoption of the Negative Declaration is set for Thursday at 4:00pm, on September 7, 2000 at the Agency office.

D:\WPDOCS\KRRandWSP\bai5.wpd

The Project consists of the four components, generally described below.

1. Acquisition of the Kern River lower water right;
2. Construction of enough urban area wells to achieve a flow capacity of about 60 cfs;
3. Construction of water conveyance exchange facilities;
4. Construction and acquisition of local facilities to enhance groundwater recharge and recovery opportunities.

For a complete description of the Project and proposed Project Operation, see the *Initial Study* Project Description (attached). A brief description of the Project follows. Water quality and water supply benefits from the Project will be realized through the acquisition of high flow lower Kern River water right (Lower Right), i.e., Hacienda and Garces pre-1914 water right. This high flow water is estimated to be available when the river is at or above 120% of normal or in about one out of every five years. The estimated long-term average annual yield is 40,000 acre-feet. Due to the high quality nature of Kern River water, up to the maximum of 40,000 acre-feet of annual Lower Right water available will be given priority for delivery to Improvement District No. 4 Henry C. Garnett Water Purification Plant (Purification Plant) and delivered for urban use in the greater Bakersfield area. Annual Lower Right water available above the amount used by the Purification Plant will be used for groundwater recharge and provide water supply benefits to local agricultural water districts.

Environmental and community benefits are an important part of the Project. The Project plans to assure through acquisition of the Lower Right and by annual water exchanges with local water districts having Kern River water rights, that the heart of the City of Bakersfield (from Manor Street downstream to Stockdale Hwy bridge) will enjoy a re-watered Kern River, at least from May through September. This stretch of the Kern River has been dry since the mid-1950's, except in wet years.

An integral component of the program is the proposed construction of enough urban area wells along the right-of-way of the Kern Island, Carrier, Kern River and Cross Valley Canals, east of Allen Rd to achieve a capacity of about 60 cfs. In dry years, estimated to be when the supply for the SWP and the Kern River is at or below 50% of normal, these wells will be pumped as part of the exchange to keep the Kern River channel wet between Manor Street on the east end, and the Stockdale Hwy bridge at the west end of the City. Water that has previously been released down the Kern River channel and percolated will be recaptured and recirculated by these wells. The ability to recirculate water is accomplished by an exchange among ID4 and Kern Delta WD/North Kern WSD. These wells will only be pumped during the driest of years to pay back to North Kern WSD and Kern Delta WD for release of their Kern River water from Isabella into the Kern River channel. This component of the Project will serve to keep the river flowing during the peak recreational use months of May through

September, without decreasing the supplies that are needed during the critical water short years.

Also, a component of the Project includes water conveyance exchange facilities, i.e., modifications and improvements to existing surface water delivery systems to increase their integration and flexibility, thus generating both water quality and water supply benefits to local water users. These improvements will be made to facilities which provide for the exchange/delivery of high quality Kern River water to areas which currently receive water of lesser quality. They include structures on the Arvin-Edison Canal to increase water deliveries to the Kern Delta WD service area, and improvements on the Cross Valley Canal and Beardsley Canal to increase deliveries of water to Kern Delta WD and to North Kern WSD from the Cross Valley Canal, and a Cross River pipeline from the CVC near the Purification Plant to the Kern Island Canal or Carrier Canal.

Another program component is to acquire and construct facilities to enhance local groundwater recharge and recovery operations. To accomplish this goal, additional regulation/recharge basins will be constructed on approximately 80 acres of property which has been targeted for acquisition from Castle and Cooke California, Inc. The property is located along both sides of the Kern River near the Stockdale bridge. Portions of the property will be dedicated to groundwater recharge and other portions will be used for a multi-propose park facility, with groundwater recharge given a priority when the Kern River is in a high flow year, thus combining a prominent water feature into the park.

To enhance the capability of existing canals to convey recovered water, the Project proposes to interconnect the Kern River Canal with the Kern Water Bank Canal and to raise the lining of the CVC in Pool 1. The CVC would be modified to "float" off the Aqueduct to increase the operational opportunity for water exchanges. The modification will also reduce water over-topping the lining, increase flexibility to move water around the County, reduce energy costs, and reduce operations and maintenance costs. This work covers the portion of the CVC that extends from the California Aqueduct turnout near Tupman to the forebay of Pumping Plant 1.

To recover the Lower Right water that will be recharged during wet years, the Project proposes to construct 12 additional groundwater recovery wells (Ag wells). The Ag wells will be constructed on either the Agency's Pioneer property, Kern Water Bank, City of Bakersfield's Kern River Canal right-of-way, and/or on private land near the Cross Valley Canal or Kern River Canal. In dry years, these wells will be pumped and the recovered water delivered to the CVC and/or the Kern River Canal for direct delivery or by exchange to water districts to supplement deficiencies in surface water deliveries. The Ag wells will have an annual recovery capacity of approximately 36,000 acre-feet.

To address any concerns that may arise from the Agency implementing this project, the Agency proposes to incorporate a number of mitigation measures into the Negative Declaration as part of the Project. These measures include but are not limited to the following:

1. Throughout the term of the proposed Project, Project water quality, groundwater monitoring, and groundwater recharge losses will be consistent with the Memorandum of Understanding Regarding Operation and Monitoring of the Kern Water Bank Groundwater Banking Program, dated October 26, 1995, and consistent with the Operation and Monitoring Procedure for the Pioneer Project, dated May 28, 1998.
2. Project recharge and recovery well areas will be designed and located to avoid areas suspected to have hydrocarbon contamination, and to the extent practical, not to interfere with operation of oil (crude or refined) or natural gas pipelines or other sensitive oilfield facilities.
3. Project recharge and recovery well areas will be designed and located to minimize potential impacts to the Agency's Cross Valley Canal.
4. The Agency will develop agreements with Kern Delta WD and North Kern WSD to address concerns regarding the water exchanges with ID4 for the Kern River Restoration component of the Project.
5. The Agency will develop agreements to share the portion of Lower Right water available for groundwater recharge with the Member Units not required by the ID4 Water Purification Plant.
6. The Agency will develop agreements with the Member Units to share the recovery capacity of the 12 agricultural wells.
7. Improvement District No. 4 will develop agreements with the Kern River Interests to account for natural and unavoidable post-1950 Isabella Reservoir river losses when operating the urban area wells for the Kern River Restoration Project, for banking purposes.
8. Agreements with public and/or private landowners for construction and operation of Agricultural wells.

In conclusion, the Project will provide significant water quality, water supply, environmental and community benefits for the Metropolitan Bakersfield area and for a broad range of Kern County water users through the coordinated implementation and operation of the above-mentioned program components. The Project would be a cooperative arrangement among the Kern County Water Agency, Improvement District No. 4, City of Bakersfield, Kern Delta Water District, and the North Kern Water Storage District.

BEFORE THE BOARD OF DIRECTORS

OF THE

KERN COUNTY WATER AGENCY

In the Matter of:

INITIAL STUDY AND PROPOSED	*
NEGATIVE DECLARATION FOR THE	*
KERN COUNTY WATER AGENCY	*
KERN RIVER RESTORATION AND	*
WATER SUPPLY PROGRAM	*

I, PAM BOSWORTH, Secretary of the Board of Directors of the Kern County Water Agency, of the County of Kern, State of California, do hereby certify that the following resolution proposed by Director _____ and seconded by Director _____, was duly passed and adopted by said Board of Directors at an official meeting hereof this _____ day of _____, 2000, by the following vote to-wit:

Ayes:

Noes:

Absent:

_____

Secretary of the Board of Directors
of the Kern County Water Agency

RESOLUTION 49-00

WHEREAS, with the passage in March 2000, of Proposition 13, the *Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Act*, more than $1.9 billion was made available to improve California's water infrastructure; and

WHEREAS, it is estimated these funds could generate nearly 1,000,000 acre-feet of new dry-year supply, restoring a portion of the Bay-Delta water supply that have been lost to federal actions, as well as generate important water quality and flood control benefits; and

WHEREAS, Chapter 9, Article 4 of Proposition 13, the *Interim Water Reliability Supply and Water Quality Infrastructure and Management Program*, provides $180 million in competitive grants and loans to local agencies located in the Delta export service areas for programs or projects that can be completed and provide the intended benefits not later than March 8, 2009, and are designed to increase water supplies, enhance water supply reliability, or improve water quality; and

WHEREAS, Kern County water leaders and planners have been working to develop a comprehensive local program that would encompass the specific types of activities targeted for funding under Chapter 9, Article 4 portion of the bond; and

WHEREAS, the Kern County Water Agency (Agency) has been approved for a grant by the Governor for $23 million under the above described Chapter 9, Article 4 of Proposition 13 to fund the *Kern River Restoration and Water Supply Program*, (Project) which proposes to provide significant water quality, water supply, environmental and community benefits; and

WHEREAS, the Project proposes to achieve these benefits through construction and acquisition of facilities defined in four broad based components: 1) acquisition of the Lower Kern River water right (Lower Right), i.e., Hacienda/Garces pre-1914 water right, including associated Lake Isabella Storage; 2) purchase of land from Castle and Cooke California, Inc., to provide for construction of additional recharge and recovery facilities; 3) construction of 12 new water Ag recovery wells and enough Urban area wells to achieve a flow capacity of about 60cfs; 4) construction of water exchange facilities, including modifications to the Pool 1 portion of the Cross Valley Canal (CVC); and 5) interconnection of other existing canals; and

WHEREAS, all the above proposed components comprise the Project and are subject to the California Environmental Quality Act (CEQA); and

WHEREAS, the Agency's acquisition of the Lower Right will not result in any new operation or reoperation of the Kern River and as such, any environmental impacts created as a result of acquisition

of the Lower Right will be less than significant; and

WHEREAS, construction of the urban area wells to achieve a flow capacity of about 60 cfs and 12 Agricultural wells will be on existing right-of-way owned by the Agency and/or the City of Bakersfield, and/or on land owned by the Agency and/or Kern Water Bank Authority, and/or on private land currently being farmed or fallowed, and as such, will have less than a significant impact on the environment; and

WHEREAS, construction of proposed water exchange facilities and CVC modifications will occur in the existing right-of-way of local water districts conveyance canals/facilities, and as such, will have a less than significant impact on the environment; and

WHEREAS, no threatened or endangered species pursuant to State and Federal Endangered Species Act will be impacted as a result of Project implementation; and

WHEREAS, the Agency has prepared an Initial Study and proposed draft Negative Declaration for the *Kern River Restoration and Water Supply Program* pursuant to CEQA; and

WHEREAS, in light of the whole record, the Agency has made an evaluation of the potential environmental effects from implementation of the Project and has found these effects, based on the Initial Study to be less than significant and therefore recommends preparation of the proposed Negative Declaration for the Project.

NOW, THEREFORE, BE IT RESOLVED by the Kern County Water Agency Board of Directors that:

1. The Board hereby finds and determines that the foregoing recitals are true and correct; and
2. Directs the General Manager to file with the State Clearinghouse and County Clerk, the Initial Study/Environmental Checklist and proposed draft Negative Declaration for the Kern County Water Agency *Kern River Restoration and Water Supply Program*, in the form shown attached hereto as Exhibit "A"; and

3. Set the hearing time, date and location for 4:00 p.m., Thursday, September 7, 2000, at the Kern County Water Agency, 3200 Rio Mirada Drive, Bakersfield, Kern County, California in order to consider adoption of the proposed Negative Declaration; and

4. Directs the Secretary of the Board to advertise a "Notice to Intent to Adopt Negative Declaration" in a local newspaper no later than one week before the public hearing.

EXHIBIT "A"

KERN COUNTY WATER AGENCY

Directors:

Fred L. Starrh
President
Division 1

Terry Rogers
Division 2

Peter Frick
Division 3

Michael Radon
Division 4

Adrienne J. Mathews
Division 5

Henry C. Garnett
Vice President
Division 6

Gene A. Lundquist
Division 7

Thomas N. Clark
General Manager

John F. Stovall
General Counsel

GROUNDWATER
Pioneer

TO: All Responsible Agencies and Interested Parties

FROM: Thomas N. Clark

DATE: July 27, 2000

SUBJECT: California Environmental Quality Act (CEQA) Compliance for the Kern River Restoration and Water Supply Program

Pursuant to the California Environmental Quality Act (CEQA), the Kern County Water Agency (Agency) will be the Lead Agency and has prepared an Initial Study, Environmental Checklist/Explanation of Responses and Proposed Draft Negative Declaration for the Kern River Restoration and Water Supply Program. We are soliciting the views of your agency as to the scope and content of the environmental information which is applicable to your agency's statutory responsibilities in connection with the proposed project.

In order to review and consider your comments during the public review period, the Agency requests that all comments be received no later than September 1, 2000. Following the review and comment period, the Initial Study and Negative Declaration will be presented for adoption by the Agency Board of Directors at a public hearing to be held at 4:00pm on Thursday, September 7, 2000, at 3200 Rio Mirada Drive, Bakersfield. Please submit comments to:

Mr. Thomas N. Clark, General Manager
Kern County Water Agency
P.O. Box 58
Bakersfield, CA 93302-0058

If you require any further information, please contact Kane Totzke at (661) 634-1468.

Sincerely,

Thomas N. Clark
General Manager

Enclosures

Mailing Address:
P.O. Box 58
Bakersfield, CA 93302-0058
Phone: 661/634-1400
Fax: 661/634-1428

CEQA Notice of Determination

COPY

RECEIVED WITH FEE
RECEIPT # DeMinimus

To: X Office of Planning and Research
1400 Tenth Street, Room 121
Sacramento, CA 95814

X County Clerk
County of Kern
1115 Truxton Ave., 2nd Floor
Bakersfield, CA 93301

RECEIVED
JAN 1 8 2002
Kern County Water Agency

TNC ☐
JFS ☑
JMB ☑
GLB ☑ Copy
DWM ☐
LWF ☐
HM ☑ Copy
GLG ☑ Copy

From: Kern County Water Agency
P.O. Box 58
3200 Rio Mirada Drive
Bakersfield, CA 93302

RBI ☐
CWW ☐
JWP ☐
DML ☐
SMR ☐
ALL ☐

6

A Burnette

Subject: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

Project Title: Transfer of 10,000 acre-feet per year of Banked Lower Kern River Water

State Clearinghouse Number (If submitted to Clearinghouse)	Lead Agency/ Contact Person	Area Code/Telephone/Extension
SCH # 2000081017	Kern County Water Agency/ General Manager Thomas N. Clark	661-634-1400

Project Location (include county)
See attached Negative Declaration.

Project Description:
See attached Negative Declaration.

This is to advise that on November 13 , 2001 the Kern County Water Agency (as lead agency) approved the project (more particularly described in the attached Negative Declaration) and determined that no additional environmental review is required.

An Initial Study and Subsequent Negative Declaration with findings were prepared for the Agency's recent action pursuant to the provisions of CEQA Guidelines section 15162 concluding that no additional environmental review is required. The recent action will not have any significant effect on the environment that was not already addressed in the previous CEQA documents for this project. Mitigation measures and statements of overriding consideration were already adopted for the previously considered project.

This is to certify that the Initial Study with comments and responses and record of project approval is available to the general public at: Kern County Water Agency, P.O. Box 58, 3200 Rio Mirada Drive, Bakersfield, CA 93302.

Date received for filing and posting at OPR:_____

Signature, Thomas N. Clark, General Manager, Kern County Water Agency

11/13/01
Date

Notice of Environmental Document
Posted by County Clerk on 11-16-01
and for 30 days thereafter, Pursuant to
Section 21152(c), Public Resources Code

1069

KERN COUNTY WATER AGENCY
SUBSEQUENT NEGATIVE DECLARATION
[to confirm CEQA Guidelines section 15162 determination]

Pursuant to the California Environmental Quality Act and CEQA Guidelines, the Kern County Water Agency hereby adopts this Subsequent negative declaration pursuant to CEQA Guidelines section 15162 for the following:

1. **Name of Project:** Transfer of 10,000 acre-feet per year of Banked Lower Kern River water.

2. **Project Lead Agency and Sponsor:** Kern County Water Agency, P.O. Box 58, 3200 Rio Mirada Drive, Bakersfield CA 93302-0058. Contact person: Thomas N. Clark, General Manager, 661-634-1400.

3. **Project Description:** In September 2000, the Kern County Water Agency (Agency) certified a Negative Declaration for the *Kern River Restoration and Water Supply Program* (Program). A component of the Program was acquisition of the Lower Kern River water right (Lower Right), i.e., Hacienda/Garces pre-1914 water right. Studies conducted by Agency staff showed that the controllable average annual yield from the Lower Right was approximately 40,000 acre-feet. Historically, the prior owner of the Lower Right, Nickel Family, LLC had exported at least 10,000 acre-feet per year from the basin under various terms and conditions. For example, during the period from 1992 through 2001, approximately 13,000 acre-feet of Lower River water was exported out-of-County. Subsequent to the Board certification of the Negative Declaration for the Program, the Agency detailed a proposal to continue to transfer, on an annual basis, the 10,000 acre-feet of water from the Agency's groundwater bank account. The transferred water will be recovered from the Agency's storage account in the Pioneer Groundwater Recharge and Recovery Project and/or from other local banking facilities either directly or by exchange and delivered back to the California Aqueduct either directly or by exchange, via the Kern Water Bank Canal and/or the Cross Valley Canal. For more information concerning the project, see the *Kern County Water Agency Environmental Initial Study Form [for CEQA Guidelines section 15162 Determination]* dated September 27, 2001 (the "Initial Study"), which is available for review and copying during regular business hours at the Agency office at the above address.

4. **Purpose and explanation of Initial Study:** The Agency has prepared the Initial Study in order to determine whether the approval and implementation of the project as described in the Initial Study require subsequent or additional environmental review under CEQA Guidelines section 15162. The purpose of the project is to continue to transfer the 10,000 acre-feet of water per year. The recipient entity(s) of the transferred water are unknown at this time. A portion or all of this water may be transferred outside Agency boundaries. In comparing water transfers between the prior owner and the Agency, except for which groundwater banking project the water is delivered from, the physical arrangement and potential impacts remain very much the same.

The Initial Study evaluates the incremental differences between the impacts of the transfer of the 10,000 acre-feet from the prior owner verus transfer by the Agency as the new owner of the water and use of the Agency's Pioneer groundwater bank supply and/or other local banking facilities, as previously described, analyzed and approved in the previous CEQA documents For more information concerning the purpose of the Initial Study and this Subsequent Negative Declaration, see the Initial Study. CEQA compliance for acquisition of the Lower Kern River water right and the Pioneer Groundwater Recharge and Recovery Project are available for review at the above address.

5. **Project Location:** Water storage in and transfer from Agency Pioneer Groundwater Recharge and Recovery Project and/or other local banking facilities, Kern County, California (see map attached to Initial Study); water delivery via the State Department of Water Resources California Aqueduct.

6. **Finding:** The Agency Board of Directors has reviewed the proposed project, Initial Study, comments received on the proposal to adopt this Subsequent Negative Declaration, and other documents and information from Agency staff, and on the basis of this information and the whole record before Agency,

hereby finds and determines as follows: (a) The Initial Study and Subsequent Negative Declaration reflect Agency's independent judgment and analysis; and (b) the Agency's Kern River Restoration and Water Supply Program and the Pioneer Groundwater Recharge and Recovery Project and other local banking facilities (i) have been analyzed adequately in the previous CEQA documents pursuant to applicable standards, and (ii) impacts have been avoided or mitigated pursuant to the previous negative declarations, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required. This Subsequent Negative Declaration confirms this conclusion.

7. Initial Study: A copy of the Initial Study is either attached or available for public review at the Agency office at the above address.

8. Location of Background Documents: The Initial Study, documents referenced in the Initial Study, notice of intent to adopt Subsequent Negative Declaration, comments on the Initial Study, and other documents concerning this project are on file and available for public review at the Agency office at the above address. The Agency Board Secretary (same address) is the custodian of the documents that constitute the record of proceedings upon which the decision in this matter is based.

By: Pat M. Frank
President

Date: 11/13/01

CALIFORNIA DEPARTMENT OF FISH AND GAME

CERTIFICATE OF FEE EXEMPTION

De Minimis Impact Finding

Project Title: Kern County Water Agency's (Agency) Transfer of 10,000 acre-feet per year of Banked Lower Kern River Water Project

Location: California Aqueduct, Kern County

Project Description: The Project is to continue the transfer 10,000 acre-feet per year of banked Lower Kern River Water. The transferred water would come from the Agency's banked groundwater account stored in the Pioneer Groundwater Recharge and Recovery Project and/or other local banking facilities and would be recovered either directly or by exchange and conveyed back to the California Aqueduct either directly or by exchange.

Findings of Exemption:

1. The project consists of a water transfer.

2. A Subsequent Negative Declaration has been conducted by Kern County Water Agency (lead agency) which evaluates the potential for adverse environmental impacts resulting from the approval and implementation of the project.

3. The lead agency has no evidence before it, including the information in the Subsequent Negative Declaration and comments of appropriate reviewing agencies, to indicate that the proposed project could have any potential for adverse effects on fish and wildlife resources.

Certification:

I hereby certify that the public agency has made the above finding(s) and that the project will not individually or cumulatively have an adverse effect on wildlife resources, as defined in Section 71.2 of the Fish and Game Code.

Title: GeneralManager

Local Lead Agency: Kern County Water Agency

Date: November 13, 2001